

# PETROS MARAGOS

## Curriculum Vitae

### **PROFESSIONAL OCCUPATION**

Professor, National Technical University of Athens

School of Electrical & Computer Engineering (Division of Signals, Control and Robotics)

Zografou, Athens 15773, Greece.

Tel: + 30-210-7722360. Fax: + 30-210-7723397.

E-mail: [maragos@cs.ntua.gr](mailto:maragos@cs.ntua.gr)

Web: <http://cvsp.cs.ntua.gr/maragos> , <http://robotics.ntua.gr>

### **EDUCATION**

**M.Eng. Diploma in Electrical Engineering**, National Technical University of Athens, 1980.

**M.Sc. in Electrical Engineering**, Georgia Institute of Technology, Atlanta, USA, 1982.

**Ph.D.**, Georgia Institute of Technology (Georgia Tech), Atlanta, USA, 1985.

### **I. PROFESSIONAL EXPERIENCE**

1. *HARVARD UNIVERSITY*, Division of Applied Sciences, Cambridge, USA

- **Associate Professor**, July 1989 - June 1993.
- **Assistant Professor**, Sep. 1985 - June 1989.
- **Lecturer**, Aug. – Sep. 1985.
- *Head Coordinator* for Harvard's Undergraduate Program in Engineering Sciences, 1988 - 91.

2. *GEORGIA INSTITUTE OF TECHNOLOGY*, School of Electr. & Comp. Enginr., Atlanta, USA

- **Associate Professor**, June 1993 - Sep. 1998.  
(On sabbatical and academic leave during 1996-98 periods of visits to NTUA and ILSP)

3. *INSTITUTE FOR LANGUAGE AND SPEECH PROCESSING*, Athens, Greece

- **Director of Research**, Mar. 1996 - Sep. 1998.

4. *NATIONAL TECHNICAL UNIVERSITY OF ATHENS*, School of Electr. & Comp. Engineering

- **Full Professor**, Oct. 1998 -- present.
- *Director of ECE Division of Signals, Control & Robotics*, 2009 – 2011, 2013-2019.
- *Director of Intelligent Robotics and Automation Laboratory*, 2009 – present.
- *Director of Graduate Program & Chair of Graduate Studies Committee*, NTUA, ECE, 2000-04.

5. *INSTITUTE OF COMMUNICATION AND COMPUTER SYSTEMS*, Athens, Greece

- **Faculty Member and Principal Investigator of research projects**, 1999 - present.

6. *ATHENA RESEARCH & INNOVATION CENTER*, Maroussi, Greece.

- **Scientific Director** of the *Robot Perception and Interaction Unit*, 2012 - present.

7. *VISITING POSITIONS*

- Visiting Professor, Univ. Pennsylvania, Dept. Computer & Information Science, Philadelphia, USA, Fall 2016.
- MHI Distinguished Visitor, University of Southern California, Viterbi School of Engineering, USA, Feb. 2016.
- Visiting Scientist, Massachusetts Institute of Technology, LIDS, USA, Fall 2012, Feb.2014.
- Visiting Professor, NTUA, School ECE, Greece, Fall 1992, Oct. 1995 - Jun. 1996.

## 8. NATIONAL COMMITTEES

- **Member of National Council for Research and Technology**, Greece, 2005 – 2009.
- Member of Scientific Council for Mathematics & Information Sciences, Greece, 2011-2014.
- Member of Scientific Council of National Documentation Center, Greece, 2005 – 2006.

## 9. CONSULTING POSITIONS

### • Industry

- The Analytic Sciences Corporation, Massachusetts, 1986--1989.
- Atlantic Aerospace Electronics Corporation, Waltham, Massachusetts, 1988.
- Alphatech, Burlington, Massachusetts, 1990--1991.
- Xerox, Palo Alto Research Center, California, 1989 -- 1992.

### • Government

- Ministry of Internal Affairs & Administration, Greece, 1995 – 96.
- Ministry of Aegean and Island Policy, 2005.

## II. AWARDS AND HONORS

### Research Awards from Professional Scientific Societies

- Received a **1987 U.S.A. National Science Foundation's Presidential Young Investigator Award** "In Recognition of Research and Teaching Accomplishments and Academic Potential".
- Received the **1988 IEEE Acoustics, Speech, and Signal Processing Society's Young Author Best Paper Award** "for an especially meritorious paper published in the Society's Transactions by an author under 30 years of age". This paper was "Morphological Filters -- Parts I and II", IEEE Trans. on A.S.S.P., Aug. 1987 (co-authored by P. Maragos and R. W. Schafer).
- Co-Recipient of the **1994 IEEE Signal Processing Society's Senior Best Paper Award** for his paper entitled "Energy Separation in Signal Modulations with Application to Speech Analysis", IEEE Trans. on Signal Processing, Oct. 1993 (co-authored by P. Maragos, J. F. Kaiser, and T. F. Quatieri).
- Co-Recipient of the **1995 IEEE W.R.G. Baker Prize Award** "for the most outstanding paper reporting original work in any of the IEEE Transactions, Journals, Magazines, or Proceedings of the IEEE issued during the previous calendar year". This paper was "Energy Separation in Signal Modulations with Application to Speech Analysis", IEEE Trans. on Signal Processing, Oct. 1993 (co-authored by P. Maragos, J. F. Kaiser, and T. F. Quatieri).
- Co-Recipient of the **1996 Pattern Recognition Society's Honorable Mention Award** "for the most original manuscript of all manuscripts published in the 1995 issues of the journal". This paper was "Min-Max Classifiers: Theory, Design, and Application", Pattern Recognition, June 1995. (co-authored by P.-F. Yang and P. Maragos).
- Co-author of a paper that received the *Best Student Paper Award* at the 1<sup>st</sup> International Conference on Scale Space and Variational Methods in Computer Vision (Italy, May-June 2007). This paper was "Vector-Valued Image Interpolation by an Anisotropic Diffusion-Projection PDE", co-authored by A. Roussos and P. Maragos. It also received *Best Student Paper Award* at the 1st Panhellenic Conference of Electrical and Computer Engineering Students, Athens, 2007.
- Recipient of the **2007 European Signal Processing Association's (EURASIP) Technical Achievements Award** "for contributions to Nonlinear Signal Processing and Systems Theory, Image Processing, and Speech Processing".
- Co-Recipient of the *Best Paper Award* at the IEEE CVPR-2011 Workshop on Gesture Recognition (Colorado Springs, USA, June 2011). This paper was "Advances in Phonetics-based Sub-Unit Modeling

for Transcription Alignment and Sign Language Recognition”, co-authored by V. Pitsikalis, S. Theodorakis, C. Vogler and P. Maragos.

- Co-Recipient of the **Best Paper Award** at the 9<sup>th</sup> Panhellenic Conference of Electrical and Computer Engineering Students, Chania, 2016. The paper was “Hard Threshold Least Mean Squares Algorithm”, co-authored by L. Flokas and P. Maragos.
- Co-Recipient of the **Data Modeling Challenge Winner Award** at the 1<sup>st</sup> International Workshop on Bodily Expressed Emotion Understanding, 16th European Computer Vision Conference, Aug. 2020. The paper was “Emotion Understanding in Videos Through Body, Context, and Visual-Semantic Embedding Loss”, co-authored by P.-P. Filntisis, N. Efthymiou, G. Potamianos and P. Maragos.
- **CVPR-2022 Best Paper Finalist** for the paper: F. Paraperas-Papantoniou, P.P. Filntisis, P. Maragos and A. Roussos, “Neural Emotion Director: Speech-preserving semantic control of facial expressions in “in-the-wild” videos”, *Proc. 2022 IEEE/CVF Conference on Computer Vision and Pattern Recognition (CVPR)*, New Orleans, USA, June 2022.

### Awards-Honors during studies or teaching

- Recipient of the 1<sup>st</sup> Honorary Commendation at the 1975 Panhellenic Mathematical Competition for senior high school students organized by the Greek Mathematical Society.
- Recipient of government scholarships in 1977 and 1979 from the Greek National Scholarship Foundation based on academic achievement during his undergraduate studies at NTUA in electrical engineering.
- Recipient of Graduate Research Assistantships at Georgia Tech School of Electrical Engineering, 1980--1985. Ranked 1<sup>st</sup> at the 1982 entrance exams for the PhD program of Georgia Tech’s School of Electrical Engineering from which he graduated with GPA 4.0/4.
- Recipient of the **1983 Sigma Xi Best Thesis Award** (Georgia Tech Chapter) for “outstanding Masters research in engineering”.
- Nominated by students for the 1988 Levenson Memorial Teaching Prize for excellence in undergraduate teaching among Harvard University faculty members.

### Honors from Scientific & Professional Societies

- Elected to **Fellow of the IEEE** in 1995 “for contributions to the theory and application of nonlinear signal processing systems”.
- Elected to President (1994 – 1996) and Vice-President (1993 – 1994) of the International Society for Mathematical Morphology.
- Member of National Council of Research and Technology, Greece, 2005 – 2009; also, member and chairman of its Scientific Council on Mathematics and Information Sciences (2011 – 2014).
- Chairman of Invention Award Committee of Hellenic Industrial Property Organisation, 2007 – 2008.
- Recipient of an Honorary Diploma from the 3<sup>rd</sup> Forum of Dodecanese Diaspora and the Municipality of Kalymnos, Rhodes, Greece, 1-2 Aug. 2009.
- Elected **Fellow of the European Signal Processing Association (EURASIP)** in 2010 “for contributions to morphological signal processing and nonlinear systems with applications in computer vision, image processing, speech and language processing, multimedia and cognitive systems”.
- **IEEE Signal Processing Society Distinguished Lecturer**, January 2017 through December 2018.
- **ICASSP 2022 Outstanding Reviewer Recognition.**
- **General Chair** of Int’l Flagship Scientific Conferences: **EUSIPCO 2017 and ICASSP 2023.**

### Keynote/Plenary Speaker at Conferences, Invited DL Talks

- *European Signal Processing Conference (EUSIPCO-1998)*, Rhodes, Greece, Sep. 1998.

- *International Symposium on Computer Graphics, Image Processing and Vision*, Rio de Janeiro, Brazil, Oct. 1998.
- *International Conference on Computing*, Mexico City, Mexico, Nov. 2002.
- *European Signal Processing Conference (EUSIPCO-2010)*, Aalborg, Denmark, Aug. 2010.
- *International Gesture Workshop (GW-2011)*, Athens, May 2011.
- *FIRST: Workshop on Image Processing and Reaction-Diffusion*, Jerusalem, Israel, Sep. 2012
- *Research Workshop on Shape and Image Modeling and Analysis*, Ein-Gedi, Israel, May 2014.
- *8<sup>th</sup> Panhellenic Conference of University Students in Electrical and Computer Engineering*, Patras, Greece, Apr. 2015.
- *GTTI Thematic Meeting on Multimedia Signal Processing 2017*, IEEE SPS Italy Chapter, Courmayeur, Italy, Jan. 2017.
- *Summer School on Speech Production, Satellite Event of INTERSPEECH 2018*, DA-IICT, Gandhinagar, India, Sep. 2018.
- *IEEE Workshop on Spoken Language Technology (SLT 2018)*, Athens, Dec. 2018.
- *15 IEEE SPS Distinguished Lecturer Talks, Jan. 2017 -- Sep. 2018* (3 in Italy, 2 in China, 4 in Greece, 2 in India, 4 in USA).

### **III. PROFESSIONAL SOCIETY ACTIVITIES**

#### **1. Editorships:**

- *Associate Editor* for *IEEE Transactions on Pattern Analysis and Machine Intelligence*, 2006 - 2010.
- *Associate Editor* for *IEEE Transactions on Acoustics, Speech, and Signal Processing*, 1989 - 1992.
- *Editorial Board Member* for *Journal of Mathematical Imaging and Vision*, Springer, 2010 - 2013.
- *Editorial Board Member* for *Journal of Visual Communication and Image Representation*, Academic Press, 1990 - 1992.
- *Editorial Board Member* for *EURASIP Journal on Signal Processing*, 2005 - 2008.
- Editorial Board Member for Journal Publications of the Greek Technical Chamber, 2004.
- *Guest Editor* for *IEEE Journal of Selected Topics in Signal Processing*, Special Issue on *Mathematical Morphology and its Applications to Image and Signal Processing*, Nov. 2012.
- *Guest Editor* for *IEEE Transactions on Image Processing*, *Special Issue on Nonlinear Image Processing*, June 1996.
- *Guest Editor* for *EURASIP Journal of Applied Signal Processing*, *Special Issue on Object-Based And Semantic Image and Video Analysis*, Nov. 2004.

#### **2. Conference & Workshop Chairman and/or Organization:**

- *General Co-Chairman* of *SPIE Conference on Visual Communications and Image Processing II (VCIP-1987)*, Cambridge, MA, Sep. 1987.
- *Co-Chairman* of *Workshop on Speech Processing and Recognition*, Brown-Harvard-MIT Center for Intelligent Control Systems, Harvard University, Cambridge, MA, Jan. 1990.
- *General Chairman* of *SPIE Conference on Visual Communications and Image Processing VII (VCIP-1992)*, Boston, MA, Nov. 1992.
- *General Co-Chairman* of *Int'l Symposium on Mathematical Morphology and its Applications to Signal Processing (ISMM-1996)*, Atlanta, GA, May 1996.
- *General Co-Chairman* of *Int'l Workshop on Very Low Bit Rate Video Coding (VLBV-2001)*, Athens, Greece, Oct. 2001.

- **General Co-Chairman** of *2007 IEEE Int'l Workshop on Multimedia Signal Processing (MMSP 2007)*, Chania, Greece, Oct. 2007.
- **Program Co-Chair** of *2010 European Conference on Computer Vision (ECCV-2010)*, Hersonissos, Iraklion Crete, Sep. 2010.
- **Co-Organizer** of *Workshop on Sign, Gesture and Activity (Satellite Workshop of ECCV-2010)*, Hersonissos, Iraklion Crete, Sep. 2010.
- **Co-Organizer** of *2011 Dagstuhl Seminar on "Innovations for Shape Analysis: Models and Algorithms"*, Germany, Apr. 2011.
- **Co-Organizer** (Tutorial Co-Chair) of *2012 European Signal Processing Conference (EUSIPCO-2012)*, Bucharest, Romania, Aug. 2012.
- **Co-Organizer** of *2014 Dagstuhl Seminar on "New Perspectives in Shape Analysis"*, Germany, Feb. 2014.
- **Co-Organizer** of *2015 IROS Workshop on "Cognitive Mobility Assistance Robots"*, Germany, Sep. 2015.
- **General Co-Chairman** of *2017 European Signal Processing Conference (EUSIPCO-2017)*, Kos, Greece, Aug.-Sep. 2017.
- **Advisor** for *2018 IEEE International Conference on Image Processing (ICIP-2018)*, Athens, Greece, Oct. 2018.
- **Co-Organizer** of *2018 Dagstuhl Seminar on "Shape Analysis: Euclidean, Discrete and Algebraic Geometric Methods"*, Germany, Oct. 2018.
- **Co-Chairman** of *IEEE 14<sup>th</sup> Image, Video and Multidimensional Signal Processing Workshop (IVMSP)*, Nafplio, Greece, June 2022.
- **General Chairman** of *IEEE 48<sup>th</sup> International Conference on Acoustics, Speech and Signal Processing (ICASSP-2023)*, Rhodes, Greece, June 2023.

### 3. Conference Special Session Organizer:

- **EUSIPCO-2008:** Special Session on "*Audio-Visual Speech Inversion*".
- **ICIP-2009:** Special Session on "*Adaptive Morphology*".
- **EUSIPCO-2014:** Special Session on "*Acoustic Scene Analysis in Domestic Environments*".

### 4. IEEE Technical Committees:

- Member of IEEE SPS *Digital Signal Processing Technical Committee*, 1992 -- 2000.
- Member of IEEE SPS *Image & Multidimensional DSP Technical Committee*, 1994 -- 2000.
- Member of IEEE SPS *Multimedia Signal Processing Technical Committee*, 2009 -- 2012.
- Member-at-Large of *IEEE SPS Education Board*, 2020 – 2022.

### 5. Member of Int'l Conference Technical/Advisory/Program Committees:

1. 1987 SPIE Conference on Visual Communications and Image Processing (VCIP-97) USA.
2. 1988 SPIE Conference on Visual Communications and Image Processing, USA.
3. 1989 SPIE Conference on Visual Communications and Image Processing, USA.
4. 1990 SPIE Conference on Visual Communications and Image Processing, USA.
5. 1991 SPIE Conference on Visual Communications and Image Processing, USA.
6. 1991 IEEE Workshop on Visual Communications and Image Processing, Taiwan.
7. 1992 SPIE Conference on Visual Communications and Image Processing, USA.
8. 1993 SPIE Conference on Visual Communications and Image Processing.
9. 1993 Int'l Conference on Signal Processing, Beijing (ICSP-93), China.
10. 1993 Int'l Workshop on Math. Morphology and its Application to Signal Processing, Spain.
11. 1994 SPIE Conference on Visual Communications and Image Processing.
12. 1994 Int'l Workshop on Language Engineering and the Information Highway, Santorini, Greece.
13. 1994 Int'l Symposium on Math. Morphology & its Application to Image Processing (ISMM-94), France.
14. 1994 IEEE Int'l Conference on Image Processing, Austin (ICIP-94), Texas.
15. 1995 IEEE Workshop on Nonlinear Signal and Image Processing (NSIP-95), Halkidiki, Greece.

16. 1995 SPIE Conference on Visual Communications and Image Processing.
17. 1996 SPIE Conference on Visual Communications and Image Processing.
18. 1998 Int'l Symposium on Math. Morphology & its Application to Image Processing (ISMM-98), Holland.
19. 2000 Int'l Symposium on Math. Morphology and its Application to Image Processing (ISMM-2000), USA.
20. 2001 Panhellenic Conf. on Automation, Robotics & Industrial Production, Santorini, Greece.
21. 2001 Int'l Workshop on Scale-Space & Morphology Theories in Computer Vision, Canada.
22. 2002 Int'l Conference on Signal Processing (ICSP-2002), Beijing, China.
23. 2002 Int'l Conference on Digital Signal Processing (DSP-2002), Santorini, Greece.
24. 2003 Int'l Conference on Scale-Space Theories in Computer Vision (Scale-Space 2003), Scotland.
25. 2003 IEEE CS Conference on Computer Vision and Pattern Recognition (CVPR 2003), USA.
26. 2003 Int'l Workshop on Variational, Geometric & Level Set Methods in Computer Vision (VLSM 2003), France.
27. 2003 Int'l Conference on Scale-Space Theories in Computer Vision (Scale-Space 2003), Scotland.
28. 2004 IEEE Int'l Conference on Image Processing (ICIP-2004), Singapore.
29. 2005 Int'l Conference on Scale-Space and Diffusion Methods in Computer Vision (Scale-Space 2005), Germany.
30. 2005 Int'l Symposium on Math. Morphology and its Application to Image Processing (ISMM-2005), France.
31. 2005 IEEE CS Conference on Computer Vision and Pattern Recognition (CVPR 2005), USA.
32. 2005 IEEE Int'l Conference on Image Processing (ICIP-2005), Genoa, Italy.
33. 2005 Int'l Workshop on Variational, Geometric & Level Set Methods in Computer Vision (VLSM 2005), China.
34. 2005 Int'l Conference on Computer Vision (ICCV 2005), Peking, China.
35. 2006 European Conference on Computer Vision (ECCV 2006), Gratz, Austria.
36. 2006 IEEE Int'l Conference on Image Processing (ICIP-2006), Toulouse, France.
37. 2006 IEEE CS Conference on Computer Vision and Pattern Recognition (CVPR 2006), USA.
38. 2007 Int'l Conference on Scale-Space and Variational Methods in Computer Vision (SSVM 2007), Italy.
39. 2007 Confer. on Energy Minimiz. Methods in Comp. Vision & Pattern Recognition (EMMCVPR 2007), China.
40. 2007 European Control Conference (ECC 2007), Kos, Greece.
41. 2007 InterSpeech2007-EuroSpeech Int'l Conference, Antwerp, Belgium.
42. 2007 Int'l Symposium on Math. Morphology and its Application to Image Processing (ISMM-2007), Brazil.
43. 2007 Int'l Conference in Computer Vision (ICCV 2007), Rio de Janeiro, Brazil.
44. 2007 IEEE Int'l Workshop on Multimedia Signal Processing (MMSP 2007), Chania, Greece.
45. 2008 European Conference on Signal Processing (EUSIPCO-2008), Lausanne, Switzerland.
46. 2008 Interspeech, Brisbane, Australia.
47. 2008 IEEE Int'l Conf. on BioInformatics and BioEngineering (BIBE 2008), Athens, Greece.
48. 2008 European Conference on Computer Vision (ECCV 2008), Marseille, France.
49. 2008 Int'l Conference on Signal Processing (ICSP-2008), Beijing, China.
50. 2009 Int'l Conference on Digital Signal Processing (DSP-2009), Santorini, Greece.
51. 2009 Int'l Symposium on Math. Morphology and its Application to Image Processing (ISMM-2009), Holland.
52. 4<sup>th</sup> Workshop on the Representation and Processing of Sign Languages, LREC-2010, Malta, May 2010.
53. 2010 European Conference on Computer Vision (ECCV 2010), Crete, Greece.
54. 2010 Int'l Conference on Signal Processing (ICSP-2010), Beijing, China.
55. 2011 Int'l Symposium on Math. Morphology and its Application to Image Processing (ISMM-2011), Italy.
56. 5<sup>th</sup> Workshop on the Representation and Processing of Sign Languages, LREC-2012, Turkey, May 2012.
57. 2012 Int'l Conference on Signal Processing (ICSP-2012), Beijing, China.
58. 2012 European Conference on Signal Processing (EUSIPCO-2012), Bucharest, Romania.
59. 2013 Int'l Symposium on Math. Morphology and its Application to Image Processing (ISMM-2013), Sweden.
60. 2014 European Conference on Signal Processing (EUSIPCO-2014), Lisbon, Portugal.
61. 2014 IEEE Int'l Conference on Image Processing (ICIP-2014), Paris, France.
62. 2017 European Conference on Signal Processing (EUSIPCO-2017), Kos, Greece.
63. 2018 European Conference on Signal Processing (EUSIPCO-2018), Rome, Italy.
64. 2018 IEEE Int'l Conference on Image Processing (ICIP-2018), Athens, Greece.

## 6. Conference Session Chairman :

1. 1987 SPIE Conference on Visual Communications and Image Processing (VCIP-97), USA.
2. 1988 SPIE Conference on Visual Communications and Image Processing, USA.
3. 1989 SPIE Conference on Visual Communications and Image Processing, USA.
4. 1989 IEEE Conference on Systems, Man and Cybernetics, Boston, USA.
5. 1990 SPIE Conference on Image Algebra and Morphological Image Processing, USA.
6. 1990 IEEE Workshop on Digital Signal Processing, USA.
7. 1991 SPIE Conference on Visual Communications and Image Processing (VCIP-91), USA.
8. 1993 Int'l Workshop on Math. Morphology and its Application to Signal Processing, Spain.
9. 1994 Int'l Symposium on Math. Morphology & its Application to Image Processing (ISMM-94), France.

10. 1994 IEEE Int'l Conference on Image Processing (ICIP-94), Austin, Texas, USA.
11. 1995 IEEE Int'l Conf. on Acoustics, Speech & Signal Processing (ICASSP-95), Detroit, USA.
12. 1996 IEEE Int'l Conf. on Acoustics, Speech & Signal Processing (ICASSP-96), Atlanta, USA.
13. 1996 Int'l Symposium on Math. Morphology and its Application to Image Processing (ISMM-96), USA.
14. 1997 IEEE Int'l Conf. on Acoustics, Speech & Signal Processing (ICASSP-97), Munich, Germany.
15. 1997 European Speech Processing Conference (EUROSPEECH-97), Rhodes, Greece.
16. 1998 Int'l Symposium on Math. Morphology & Its Applications to Image Processing (ISMM-98), Holland.
17. 1998 European Robotics, Intelligent Systems & Control Conference (EURISCON-98), Athens, Greece.
18. 2000 Int'l Symposium on Math. Morphology & its Application to Image Processing (ISMM-2000), USA.
19. 2001 European Worksh. on Intelligent Forecasting, Diagnosis & Control, Santorini, Greece.
20. 2001 Panhellenic Conf. on Automation, Robotics & Industrial Production, Santorini, Greece.
21. 2001 Int'l Workshop on Scale-Space & Morphology Theories in Computer Vision, Vancouver, Canada.
22. 2001 IEEE Int'l Conf. on Image Processing (ICIP-2001), Thessaloniki, Greece.
23. 2002 Int'l Conf. on Digital Signal Processing (DSP-2002), Santorini, Greece.
24. 2003 IEEE Int'l Conf. on Image Processing (ICIP-2003), Barcelona, Spain.
25. 2005 Int'l Symposium on Math. Morphology and its Application to Image Processing (ISMM-2005), France.
26. 2005 IEEE Int'l Conference on Image Processing (ICIP-2005), Genoa, Italy.
27. 2005 InterSpeech2005-EuroSpeech Int'l Conference, Lisbon, Portugal.
28. 2007 IEEE Int'l Workshop on Multimedia Signal Processing (MMSP-2007), Chania, Greece.
29. 2007 Int'l Symposium on Math. Morphology & its Application to Signal/Image Processing (ISMM-2007), Brazil.
30. 2008 European Signal Processing Conference (EUSIPCO-2008), Lausanne, Switzerland.
31. 2008 IEEE Int'l Conference on Image Processing (ICIP-2008), San Diego, USA.
32. 2009 IEEE Int'l Conference on Image Processing (ICIP-2009), Cairo, Egypt.
33. 2010 ECCV'10 Area Chair Colloquium, Ecole Normale Supérieure, Paris, June 2010.
34. 2010 European Signal Processing Conference (EUSIPCO-2010), Aalborg, Denmark.
35. 2011 European Signal Processing Conference (EUSIPCO-2011), Barcelona, Spain.
36. 2012 European Signal Processing Conference (EUSIPCO-2012), Bucharest, Romania.
37. 2013 International Conference on Digital Signal Processing (DSP-2013), Santorini, Greece.
38. 2013 European Signal Processing Conference (EUSIPCO-2013), Marrakech, Morocco.
39. 2014 IEEE Int'l Conference on Image Processing (ICIP-2014), Paris, France.
40. 2016 IEEE Int'l Conf. on Acoustics, Speech & Signal Processing (ICASSP-2016), Shanghai, China.
41. 2018 IEEE Int'l Workshop on Signal Processing Advances in Wireless Communications (SPAWC-2018), Kalamata, Greece.
42. 2018 IEEE Int'l Conference on Image Processing (ICIP-2018), Athens, Greece.
43. 2021 IEEE Int'l Conference on Robotics & Automation (ICRA-2021), Xi'an, China.
44. 2021 European Signal Processing Conference (EUSIPCO-2021), Dublin, Ireland.

## 7. Technical Reviewer:

### Journals:

- IEEE Journals:
  - IEEE Transactions on:
    - Signal Processing; Audio, Speech & Language Processing; Image Processing;
    - Pattern Analysis and Machine Intelligence;
    - Communications; Circuits and Systems. Biomedical Engineering.
  - IEEE Signal Processing Letters.
  - IEEE Geoscience and Remote Sensing Letters.
- EURASIP Journals:
  - Signal Processing. Speech Communication.
  - Journal of Applied Signal Processing.
  - Digital Signal Processing
- Pattern Recognition.
- Circuits, Systems and Signal Processing. Systems and Control Letters.
- Computer Vision & Image Understanding; Computer Graphics and Image Processing.
- International Journal of Computer Vision.
- Journal of Visual Communications and Image Representation.
- Journal of Mathematical Imaging and Vision.
- Image and Vision Computing.

- SPIE Journals:
  - Journal of Electronic Imaging; Optical Engineering.
- Journal of Intelligent Systems and Robotics.
- Journal of Optical Society of America. Applied Optics.
- Journal of Acoustical Society of America.
- Multidimensional Systems and Signal Processing
- SIAM Journal of Imaging Sciences.
- Cognitive Processing
- Information Systems

#### **Conferences:**

- IEEE Signal, Speech & Processing Conferences: ICASSP, ICIP, MMSP.
- SPIE Conferences: VCIP.
- Computer Vision Conferences: ICCV, ECCV, CVPR, ScaleSpace, VLISM, EMMCVPR.
- EURASIP Conferences: EUSIPCO, EUROSPEECH
- Speech & Language Processing Conferences: INTERSPEECH, ICSLP.
- ISMM (Int'l Symposia on Mathematical Morphology and its Application to Image Processing)
- IEEE Workshop on Multimedia Signal Processing.
- IEEE Workshop on Image, Video and Multidimensional Signal Processing
- Other European Conferences: ECC

#### **Proposals:**

- NSF Research Proposals.
- European Research Proposals
- Greek Research Proposals: G.S.R.T. and Ministry of Education.

#### **8. Member of Research Review Panels:**

- Review Panel for NSF Presidential Young Investigator Awards, 1993.
- Review Panel for NSF Research Initiation Awards, 1993.
- Member of GSRT committee for evaluation of National Research Institutes, 1995.
- Member of European Commission expert evaluation panels for FP7 research proposals.

#### **9. Committees for Evaluation and Election of Faculty Members and Institute Researchers:**

- Referee for Faculty Evaluation and Promotion for USA and European Universities.
- Member of Evaluation Committees for Faculty Election and Promotion at Greek Universities.
- Member of Evaluation & Election Committees for Researchers and Directors at Greek Research Institutes.

#### **10. Research & Technology Committees:**

- Member of Greek National Council of Research and Technology, 2005 – 2009.
- Member of Greek Research Council for Mathematics and Information Sciences, 2011 - 2013.
- Member of Greek Scientific Council of National Documentation Centre, 2005 – 2006.
- Chairman of Invention Award Committee of Hellenic Industrial Property Organisation, 2007 – 2008.
- Member of Steering Committee for European Research Network of Excellence “MUSCLE”, 2004-08.

#### **11. Award Committees:**

- IEEE Fellows Nomination Committees
- EURASIP Fellows Selection Committee, 2015--2021.
- ICASSP 2015 Best Student Paper Award Selection Committee.

#### **12. Professional Affiliations:**

- Fellow of IEEE.
- Member of IEEE Societies: Signal Processing, Communications, Computer, Robotics
- Fellow of EURASIP (European Association for Signal Processing)
- Member of Technical Chamber of Greece.



## **IV. PUBLICATIONS AND RESEARCH EXPERIENCE**

### **SYNOPSIS**

**Number of Publications:** (as of May 2022)

He has authored or co-authored more than 400 publications as scientific journal papers, book chapters, books, or conference proceeding articles.

**Citations:** (as of May 2022)

Source: Google Scholar: <http://scholar.google.com/citations?user=A2XydgGCY9gC>

The number of citations to his published work exceeds 18.500, with h-index =62 and i10-index=242.

### **RESEARCH INTERESTS**

#### **General:**

- Signal Processing, Systems Theory, Pattern Recognition and Machine Learning, Robotics.
- Detection, Estimation. Algorithms. Control.
- Applied Mathematics. Acoustics. Optics.
- Cognitive Systems

#### **Special:**

- Image Processing and Computer Vision. Action and Gesture Recognition.
- Audio, Music & Speech Processing, Synthesis and Recognition. Natural Language Processing.
- Multisensory Audio and Video Processing, Smart Environments.
- Multimodal Human-Robot Interaction, Robot Perception.
- Visual SLAM. Autonomous Vehicles. Drones.
- Nonlinear Systems: Mathematical Morphology. Chaos. Fractals. Lattice Theory.

### **THESES**

1. "Recognition of Phonemes of the Greek Language by Matched Filters", *Diploma (M.Eng.) Thesis*, National Technical University of Athens, School of Electrical Engineering, Athens, Greece, June 1980. (with T. Anagnostou) (Thesis Advisor: G. Carayannis.)
2. "On the Adaptive Predictive Coding of Digital Monochrome Still Images", *M.Sc. Thesis*, Georgia Institute of Technology, Atlanta, GA, July 1982.
3. "A Unified Theory of Translation-Invariant Systems with Applications to Morphological Analysis and Coding of Images", *Ph.D. Thesis*, Georgia Institute of Technology, Atlanta, USA, July 1985. (Thesis Advisor: R. W. Schafer.)

### **Edited BOOKS**

1. P. Maragos, (Ed.), *Visual Communications and Image Processing*, Proceedings SPIE vol. 1818, SPIE Optical Engineering Press, Bellingham, Washington, USA, 1992.
2. P. Maragos, R. W. Schafer and M. A. Butt (Eds.), *Mathematical Morphology and its Application to Image and Signal Processing*, Kluwer Academic Publishers, Boston, 1996.
3. P. Maragos, A. Potamianos and P. Gros (Eds.), *Multimodal Processing and Interaction: Audio, Video, Text*, Springer, Boston, MA, 2008. (Multimedia Systems and Applications, vol. 33) <https://doi.org/10.1007/978-0-387-76316-3>
4. K. Daniilidis, P. Maragos and N. Paragios (Eds.), *Computer Vision – ECCV 2010*, Lecture Notes in Computer Science: vol.6311 – 6316, Springer, 2010.
5. R. Bowden, P. Dreuw, P. Maragos and J. Piater (Eds.), *Proceedings of ECCV-2010 Workshop on Sign, Gesture, Activity*, Heraklion, Crete, Sep. 2010. Published as *Trends and Topics in Computer Vision*, (K. Kutulakos, ed.), LNCS vol. 6553, Springer, 2012.
6. M. Breuss, A. Bruckstein and P. Maragos (Eds.), *Innovations for Shape Analysis: Models and Algorithms*, Springer, 2013. <https://doi.org/10.1007/978-3-642-34141-0>

7. M. Breuss, A. Bruckstein, P. Maragos and S. Wuhler (Eds.), *New Perspectives in Shape Analysis*, Springer, 2016. <https://doi.org/10.1007/978-3-319-24726-7>
8. M. Breuss, A. Bruckstein, C. Kiselman and P. Maragos (Eds.), *Shape Analysis: Euclidean, Discrete and Algebraic Geometric Methods*, Springer, 2020 (to appear).

### *Authored BOOKS*

- P. Maragos, *Image Analysis and Computer Vision*, Lecture Notes, NTUA, Athens, 2005-2018. Textbook under preparation.
- G. Carayannis and P. Maragos, *Basic Principles of Signals and Systems*, (in greek), Pappasotiriou, 2011.
- P. Maragos, V. Charisopoulos, G. Smyrnis and E. Theodosis, *Tropical Geometry and Machine Learning*, Monograph under preparation.

### *PUBLICATIONS IN SCIENTIFIC JOURNALS*

1. P. Maragos, R. W. Schafer and R. M. Mersereau, "Two-Dimensional Linear Prediction and Its Application to Adaptive Predictive Coding of Images", *IEEE Transactions on Acoustics, Speech, and Signal Processing*, vol.32, no.6, pp.1213-1229, Dec. 1984.
2. P. Maragos and R. W. Schafer, "Morphological Skeleton Representation and Coding of Binary Images", *IEEE Transactions on Acoustics, Speech, and Signal Processing*, vol.34, no.5, pp.1228-1244, Oct. 1986.
3. P. Maragos, "Tutorial on Advances in Morphological Image Processing and Analysis", (Invited Paper), *Optical Engineering*, vol.26, no.7, pp.623-632, July 1987.
4. P. Maragos and R. W. Schafer, "Morphological Filters - Part I: Their Set-Theoretic Analysis and Relations to Linear Shift-Invariant Filters", *IEEE Transactions on Acoustics, Speech, and Signal Processing*, vol.35, no.8, pp.1153-1169, Aug. 1987. **Best Paper Award.**
5. P. Maragos and R. W. Schafer, "Morphological Filters - Part II: Their Relations to Median, Order-Statistic, and Stack Filters", *IEEE Transactions on Acoustics, Speech, and Signal Processing*, vol.35, no.8, pp.1170-1184, Aug. 1987. ("Corrections", vol.37, no.4, p.597, Apr. 1989.) **Best Paper Award.**
6. P. Maragos, "A Representation Theory for Morphological Image and Signal Processing", *IEEE Transactions on Pattern Analysis and Machine Intelligence*, vol.11, no.6, pp.586-599, June 1989.
7. P. Maragos, "Pattern Spectrum and Multiscale Shape Representation", *IEEE Transactions on Pattern Analysis and Machine Intelligence*, vol.11, no.7, pp.701-716, July 1989.
8. P. Maragos and R. W. Schafer, "Morphological Systems for Multidimensional Signal Processing", *Proceedings of IEEE*, vol.78, no.4, pp.690-710, April 1990.
9. P. Maragos and R. D. Ziff, "Threshold Superposition in Morphological Image Analysis Systems", *IEEE Transactions on Pattern Analysis and Machine Intelligence*, vol.12, no.5, pp.498-504, May 1990.
10. C.-S. Fuh and P. Maragos, "Motion Displacement Estimation Using an Affine Model for Image Matching", (Invited Paper), *Optical Engineering*, vol.30, no.7, pp.881-887, July 1991.
11. P. Maragos and F. K. Sun, "Measuring the Fractal Dimension of Signals: Morphological Covers and Iterative Optimization", *IEEE Transactions on Signal Processing*, vol.41, no.1, pp.108-121, Jan. 1993.
12. P. Maragos, J. F. Kaiser, and T. F. Quatieri, "On Amplitude and Frequency Demodulation Using Energy Operators", *IEEE Transactions on Signal Processing*, vol.41, no.4, pp.1532-1550, April 1993.
13. P. Maragos, J. F. Kaiser, and T. F. Quatieri, "Energy Separation in Signal Modulations with Application to Speech Analysis", *IEEE Transactions on Signal Processing*, vol.41, no.10, pp.3024-3051, Oct. 1993. **Best Paper Award.**

14. A. C. Bovik, P. Maragos, and T. F. Quatieri, "AM--FM Energy Detection and Separation in Noise Using Multiband Energy Operators", *IEEE Transactions on Signal Processing*, vol.41, no.12, pp.3245-3265, Dec. 1993.
15. A. C. Bovik and P. Maragos, "Conditions for Positivity of an Energy Operator", *IEEE Transactions on Signal Processing*, vol.42, no.2, pp.469-471, Feb. 1994.
16. A. Potamianos and P. Maragos, "A Comparison of the Energy Operator and Hilbert Transform Approaches for Signal and Speech Demodulation", *Signal Processing*, vol.37, no.1, pp.95-120, May 1994.
17. H. M. Hanson, P. Maragos, and A. Potamianos, "A System for Finding Speech Formants and Modulations via Energy Separation", *IEEE Transactions on Speech and Audio Processing*, vol.2, no.3, pp.436-443, July 1994.
18. P. Maragos, "Morphological Systems: Slope Transforms and Max-Min Difference and Differential Equations", *Signal Processing*, vol.38, pp.57-77, Sep. 1994.
19. R. W. Brockett and P. Maragos, "Evolution Equations for Continuous-Scale Morphological Filtering", *IEEE Transactions on Signal Processing*, vol.42, no.12, pp.3377-3386, Dec. 1994.
20. P. Maragos, "Slope Transforms: Theory and Application to Nonlinear Signal Processing", *IEEE Transactions on Signal Processing*, vol.43, no.4, pp.864--877, April 1995.
21. P.-F. Yang and P. Maragos, "Min--Max Classifiers: Theory, Design, and Application", *Pattern Recognition*, vol.28, no.6, pp.879--899, June 1995. **Best Paper Award.**
22. P. Maragos and A. Potamianos, "Higher-Order Differential Energy Operators", *IEEE Signal Processing Letters*, vol.2, no.8, pp.152-154, Aug. 1995.
23. P. Maragos and A. C. Bovik, "Image Demodulation Via Multidimensional Energy Separation", *Journal of Optical Society of America A*, vol.12, no.9, pp.1867-1876, Sep. 1995.
24. C.-S. Fuh and P. Maragos, "Least-Squares Algorithms for Motion and Shape Recovery under Perspective Projection", *Journal of Information Science and Engineering*, vol.12, pp.1-23, 1996.
25. A. Potamianos and P. Maragos, "Speech Formant Frequency and Bandwidth Tracking Using Multiband Energy Demodulation", *Journal of Acoustical Society of America*, vol.99 (6), pp.3795-3806, June 1996.
26. P. Maragos, "Differential Morphology and Image Processing", *IEEE Transactions on Image Processing*, vol.5, no.6, pp.922--937, June 1996.
27. B. Santhanam and P. Maragos, "Energy Demodulation of Two-Component AM--FM Signal Mixtures", *IEEE Signal Processing Letters*, vol.3, no.11, pp.294-299, Nov. 1996.
28. H. Heijmans and P. Maragos, "Lattice Calculus of the Morphological Slope Transform", *Signal Processing*, vol.59, no.1, pp.17-42, 1997.
29. L. F.C. Pessoa and P. Maragos, "MRL-Filters: A General Class of Nonlinear Systems and Their Optimal Design for Image Processing", *IEEE Transactions on Image Processing*, vol.7, no.7, pp.966-978, July 1998.
30. M. A. Butt and P. Maragos, "Optimal Design of Chamfer Distance Transforms", *IEEE Transactions on Image Processing*, vol.7, no.10, pp.1477-1484, Oct. 1998.
31. B. Santhanam and P. Maragos, "Harmonic Analysis and Restoration of Methods for Separating Mixtures of Periodic Signals: Algebraic Separation Vs. Comb Filtering", *Signal Processing*, vol.69, no.1, pp.81-91, Aug. 1998.
32. P. Maragos, "Nonlinear Signal Processing", in *Recent Developments in the Core of Digital Signal Processing*, edited by L. Atlas and P. Duhamel, *IEEE Signal Processing Magazine*, vol. 16, no. 1, pp. 13-16, Jan. 1999.
33. P. Maragos and A. Potamianos, "Fractal Dimensions of Speech Sounds: Computation and Application to Automatic Speech Recognition", *Journal of Acoustical Society of America*, vol.105 (3), pp.1925--1932, March 1999.
34. A. Potamianos and P. Maragos, "Speech Processing Applications Using an AM-FM Modulation Model", *Speech Communication*, vol.28, no.3, pp.195-209, July 1999.

35. L. F.C. Pessoa and P. Maragos, "Hybrid Neural Networks with Morphological/Rank/Linear Nodes: A Unifying Framework with Application to Handwritten Character Recognition", *Pattern Recognition*, vol.33, pp.945-960, 2000.
36. P. Maragos and M. A. Butt, "Curve Evolution, Differential Morphology and Distance Transforms as Applied to Multiscale and Eikonal Problems", *Fundamentae Informatica*, vol.41, pp.91-129, Jan. 2000.
37. B. Santhanam and P. Maragos, "Multicomponent AM--FM Demodulation via Periodicity-based Algebraic Separation and Energy-based Demodulation", *IEEE Transactions on Communications*, vol.48, no.3, pp.473-490, March 2000.
38. F. Meyer and P. Maragos, "Nonlinear Scale-Space Representation with Morphological Levelings", *Journal of Visual Communications and Image Representation*, vol.11, pp.245-265, 2000.
39. A. Potamianos and P. Maragos, "Time-Frequency Distributions for Automatic Speech Recognition", *IEEE Transactions on Speech and Audio Processing*, vol.9, no.3, pp.196-200, Mar. 2001.
40. D. Dimitriadis, P. Maragos, V. Pitsikalis and A. Potamianos, "Modulation and Chaotic Acoustic Features for Speech Recognition", Invited Paper, *Control and Intelligent Systems*, vol.30, no.1, pp.19-26, 2002.
41. M. Faundez-Zanuy, S. McLaughlin, A. Esposito, A. Hussain, J. Schoentgen, G. Kubin, W.B. Kleijn, and P. Maragos, "Nonlinear Speech Processing: Overview and Applications", *Control and Intelligent Systems*, vol.30, no.1, pp.1-10, 2002.
42. C. Tzafestas and P. Maragos, "Shape Connectivity: Multiscale Analysis and Application to Generalized Granulometries", *Journal of Mathematical Imaging and Vision*, vol.17 (2), pp.109-129, Sep. 2002.
43. P. Maragos, "Algebraic and PDE Approaches for Lattice Scale-Spaces with Global Constraints", *International Journal of Computer Vision*, vol.52 (2/3) pp.121-137, May 2003.
44. P. Maragos, A. Sofou, G. B. Stamou, V. Tzouvaras, E. Papatheodorou and G. P. Stamou, "Image Analysis of Soil Micromorphology: Feature Extraction, Segmentation and Quality Inference", *Journal of Applied Signal Processing*, vol.2004, no.6, pp.902-912, June 2004.
45. P. Maragos, "Lattice Image Processing: A Unification of Morphological and Fuzzy Algebraic Systems" *Journal of Mathematical Imaging and Vision*, vol.22, pp.333-353, 2005.
46. I. Kokkinos and P. Maragos, "Nonlinear Speech Analysis Using Models for Chaotic Systems", *IEEE Transactions on Speech and Audio Processing*, vol.13, no.6, pp.1098-1109, Nov. 2005.
47. A. G. Dimakis and P. Maragos, "Phase Modulated Resonances Modeled as Self-Similar Processes With Application to Turbulent Sounds", *IEEE Transactions on Signal Processing*, vol.53, no.11, pp.4261-4272, Nov. 2005.
48. D. Dimitriadis, P. Maragos, and A. Potamianos, "Robust AM-FM Features for Speech Recognition", *IEEE Signal Processing Letters*, vol.12, no.9, pp.621-624, Sep. 2005.
49. A. Sofou, G. Evangelopoulos and P. Maragos, "Soilsection Image Segmentation and Texture Analysis: A Computer Vision Approach", *IEEE Geoscience and Remote Sensing Letters*, vol.2, no.4, pp.394-398, Oct. 2005.
50. D. Dimitriadis and P. Maragos, "Continuous Energy Demodulation Methods and Application to Speech Analysis", *Speech Communication*, vol.48, no.7, pp.819-837, July 2006.
51. V. Pitsikalis and P. Maragos, "Filtered Dynamics and Fractal Dimensions for Noisy Speech Recognition", *IEEE Signal Processing Letters*, vol.13, no.11, pp.711-714, Nov. 2006.
52. G. Evangelopoulos and P. Maragos, "Multiband Modulation Energy Tracking for Noisy Speech Detection", *IEEE Transactions on Audio, Speech and Language Processing*, vol.14, no.6, pp.2024-2038, Nov. 2006.
53. G. Papandreou and P. Maragos, "Multigrid Geometric Active Contour Models", *IEEE Transactions on Image Processing*, vol.16, no.1, pp.229-240, Jan.2007.
54. S. Lefkimmiatis and P. Maragos, "A Generalized Estimation for Linear and Nonlinear Microphone Array Post-Filters", *Speech Communication*, vol.49, pp.657-666, 2007.
55. A. Sofou and P. Maragos, "Generalized Flooding and Multicue PDE-based Image Segmentation", *IEEE Transactions on Image Processing*, vol.17, no.3, pp.364-376, March 2008.

56. I. Kokkinos, R. Deriche, O. Faugeras and P. Maragos, "Computational Analysis and Learning for a Biologically Motivated Model of Boundary Detection", *Neurocomputing*, vol.71, pp.1798-1812, 2008.
57. M. Kotti, D. Ververidis, G. Evangelopoulos, I. Panagakis, C. Kotropoulos, P. Maragos and I. Pitas, "Audio-Assisted Movie Dialogue Detection", *IEEE Transactions on Circuits and Systems for Video Technology*, vol.18, no.11, pp.1618-1627, Nov. 2008.
58. I. Kokkinos, G. Evangelopoulos and P. Maragos, "Modulation Features, Generative Models and Weighted Curve Evolution for Texture Analysis and Segmentation", *IEEE Transactions on Pattern Analysis and Machine Intelligence*, vol.31, no.1, p.142-157, Jan.2009.
59. A. Katsamanis, G. Papandreou and P. Maragos, "Face Active Appearance Modeling and Speech Acoustic Information to Recover Articulation", *IEEE Transactions on Audio, Speech and Language Processing*, vol.17, no.3, pp.411-422, March 2009.
60. G. Papandreou, A. Katsamanis, V. Pitsikalis, and P. Maragos, "Adaptive Multimodal Fusion by Uncertainty Compensation with Application to Audio-Visual Speech Recognition", *IEEE Transactions on Audio, Speech and Language Processing*, vol.17, no.3, pp.423-435, March 2009.
61. D. Dimitriadis, A. Potamianos and P. Maragos, "A Comparison of the Squared Energy and Teager-Kaiser Operators for Short-Term Energy Estimation in Additive Noise", *IEEE Transactions on Signal Processing*, vol.57, no.7, pp.2569-2581, July 2009.
62. A. Roussos and P. Maragos, "Reversible Interpolation of Vectorial Images by an Anisotropic Diffusion-Projection PDE", *International Journal of Computer Vision*, vol.84, no.2, pp.130-145, Aug.2009.
63. I. Kokkinos and P. Maragos, "Synergy Between Object Recognition and Image Segmentation using the Expectation Maximization Algorithm", *IEEE Transactions on Pattern Analysis and Machine Intelligence*, vol.31, no.8, pp.1486-1501, Aug. 2009.
64. S. Lefkimmiatis, P. Maragos and G. Papandreou, "Bayesian Inference on Multiscale Models for Poisson Intensity Estimation: Applications to Photon-Limited Image Denoising", *IEEE Transactions on Image Processing*, vol.18, no.8, pp.1724-1741, Aug. 2009.
65. V. Pitsikalis and P. Maragos, "Analysis and Classification of Speech Signals by Generalized Fractal Dimension Features", *Speech Communication*, vol.51, no.12, pp.1206-1223, Dec. 2009.
66. D. Dimitriadis, P. Maragos and A. Potamianos, "On the Effects of Filterbank Design and Energy Computation on Robust Speech Recognition", *IEEE Transactions on Audio, Speech and Language Processing*, vol.19, no.6, pp.1504-1516, Aug.2011.
67. A. Vatakis, P. Maragos, I. Rodomagoulakis and C. Spence, "Assessing the effect of physical differences in the articulation of consonants and vowels on audiovisual temporal perception", *Frontiers in Integrative Neuroscience*, Special Issue on "Multisensory Perception and Action: Psychophysics, neural mechanisms, and applications", vol.6 (art.71), pp.1-18, Oct.2012, <https://doi.org/10.3389/fnint.2012.00071>.
68. K. Drakopoulos and P. Maragos, "Active Contours on Graphs: Multiscale Morphology and Graphcuts", *IEEE Journal of Selected Topics in Signal Processing* (Special Issue on Filtering and Segmentation in Mathematical Morphology), vol.6, no.7, pp.780-794, Nov. 2012. DOI: [10.1109/JSTSP.2012.2213675](https://doi.org/10.1109/JSTSP.2012.2213675)
69. A. Zlatintsi and P. Maragos, "Multiscale Fractal Analysis of Musical Instrument Signals with Application to Recognition", *IEEE Transactions on Audio, Speech and Language Processing*, vol.21, no.4, pp.737-748, Apr. 2013. DOI: [10.1109/TASL.2012.2231073](https://doi.org/10.1109/TASL.2012.2231073)
70. A. Roussos, S. Theodorakis, V. Pitsikalis and P. Maragos, "Dynamic Affine-Invariant Shape-Appearance Handshape Features and Classification in Sign Language Videos", *Journal of Machine Learning Research*, vol. 14, pp. 1627-1663, June 2013.
71. G. Evangelopoulos, A. Zlatintsi, A. Potamianos, P. Maragos, K. Rapantzikos, G. Skoumas and Y. Avrithis, "Multimodal Saliency and Fusion for Movie Summarization based on Aural, Visual, and Textual Attention", *IEEE Transactions on Multimedia*, vol. 15, no. 7, pp.1553-1568, Nov. 2013. DOI: [10.1109/TMM.2013.2267205](https://doi.org/10.1109/TMM.2013.2267205)
72. E. Antonakos, V. Pitsikalis and P. Maragos, "Classification of Extreme Facial Events in Sign Language Videos", *EURASIP Journal on Image and Video Processing* 2014, 2014:14. <https://doi.org/10.1186/1687-5281-2014-14>

73. S. Theodorakis, V. Pitsikalis and P. Maragos, “Dynamic–static unsupervised sequentiality, statistical subunits and lexicon for sign language recognition”, *Image and Vision Computing*, vol.32, no.8, pp.533–549, Aug. 2014. <https://doi.org/10.1016/j.imavis.2014.04.012>
74. V. Pitsikalis, A. Katsamanis, S. Theodorakis and P. Maragos, “Multimodal Gesture Recognition via Multiple Hypotheses Rescoring”, *Journal of Machine Learning Research*, vol.16, pp.255-284, Feb. 2015.
75. S. Lefkimmiatis, A. Roussos, P. Maragos and M. Unser, “Structure Tensor Total Variation”, *SIAM Journal on Imaging Sciences*, vol.8, no.2, pp.1090-1122, 2015. <https://doi.org/10.1137/14098154X>
76. T. Chaspari, C. Soldatos and P. Maragos, “The development of the Athens Emotional States Inventory (AESI): collection, validation and automatic processing of emotionally loaded sentences”, *The World Journal of Biological Psychiatry*, vol.16, issue 5, pp.312-322, Jun. 2015.  
DOI: [10.3109/15622975.2015.1012228](https://doi.org/10.3109/15622975.2015.1012228)
77. P. Koutras and P. Maragos, “A Perceptually-based Spatio-Temporal Computational Framework for Visual Saliency Estimation”, *Signal Processing: Image Communication*, vol.38, pp.15–31, Oct. 2015. DOI:10.1016/j.image.2015.08.004. <https://doi.org/10.1016/j.image.2015.08.004>
78. C. G. Bampis, P. Maragos and A. C. Bovik, "Graph-Driven Diffusion and Random Walk Schemes for Image Segmentation", *IEEE Transactions on Image Processing*, vol.26, no.1, pp.35-50, Jan. 2017. DOI: [10.1109/TIP.2016.2621663](https://doi.org/10.1109/TIP.2016.2621663)
79. I. Rodomagoulakis, A. Katsamanis, G. Potamianos, P. Giannoulis, A. Tsiami, P. Maragos, “Room-localized spoken command recognition in multi-room, multi-microphone environments”, *Computer Speech & Language*, vol.46, pp.419-443, Nov. 2017. <https://doi.org/10.1016/j.csl.2017.02.004> .
80. A. Zlatintsi, P. Koutras, G. Evangelopoulos, N. Malandrakis, N. Efthymiou, K. Pastra, A. Potamianos and P. Maragos, “COGNIMUSE: a multimodal video database annotated with saliency, events, semantics and emotion with application to summarization”, *EURASIP Journal on Image and Video Processing* (2017) 2017:54. <https://doi.org/10.1186/s13640-017-0194-1> .
81. C. Sakaridis, K. Drakopoulos and P. Maragos, "Theoretical Analysis of Active Contours on Graphs", *SIAM J. Imaging Sciences*, vol. 10, no. 3, pp. 1475-1510, 2017. <https://doi.org/10.1137/16M1100101> .
82. P.P. Filntisis, A. Katsamanis, P. Tsiakoulis and P. Maragos, “Video-realistic expressive audio-visual speech synthesis for the Greek language”, *Speech Communication*, vol.95, pp.137–152, 2017. DOI: <http://dx.doi.org/10.1016/j.specom.2017.08.011> .
83. P. Maragos, “Dynamical Systems on Weighted Lattices: General Theory”, *Mathematics of Control, Signals, and Systems*, 29:21, (vol.29, article no. 21), Dec. 2017. DOI: <https://doi.org/10.1007/s00498-017-0207-8> .
84. L. Flokas and P. Maragos, “Online Wideband Spectrum Sensing Using Sparsity”, *IEEE Journal of Selected Topics in Signal Processing*, vol.12, no.1, pp.35-44, Feb. 2018. DOI: [10.1109/JSTSP.2018.2797422](https://doi.org/10.1109/JSTSP.2018.2797422) .
85. I. Kordonis, P. Maragos and G. P. Papavassilopoulos, “Stochastic Stability in Max-Product and Max-Plus Systems with Markovian Jumps”, *Automatica*, vol.92, pp.123-132, June 2018. DOI: <https://doi.org/10.1016/j.automatica.2018.03.008>
86. G. Chalvatzaki, X. S. Papageorgiou, C. S. Tzafestas, and P. Maragos, “Augmented Human State Estimation using Interacting Multiple Model Particle Filters with Probabilistic Data Association”, *IEEE Robotics and Automation Letters*, 3 (3), pp. 1872-1879, July 2018. DOI: [10.1109/LRA.2018.2800084](https://doi.org/10.1109/LRA.2018.2800084)
87. A. Tsiamis and P. Maragos, “Sparsity in Max-plus Algebra”, *Discrete Events Dynamic Systems*, 29:163–189, May 2019. DOI: <https://doi.org/10.1007/s10626-019-00281-1>
88. A. Tsiami, P. Koutras, A. Katsamanis, A. Vatakis and P. Maragos, “A behaviorally inspired fusion approach for computational audiovisual saliency modeling”, *Signal Processing: Image Communication*, vol. 76, pp.186-200, Aug. 2019. DOI: <https://doi.org/10.1016/j.image.2019.05.001>
89. I. Rodomagoulakis and P. Maragos, “Improved Frequency Modulation Features for Multichannel Distant Speech Recognition”, *IEEE Journal of Selected Topics in Signal Processing*, vol.13, no.4, pp. 841-849, Aug. 2019. DOI: [10.1109/JSTSP.2019.2923372](https://doi.org/10.1109/JSTSP.2019.2923372)
90. P. Giannoulis, G. Potamianos and P. Maragos, “Room-Localized Speech Activity Detection in Multi-Microphone Smart Homes”, *EURASIP Journal on Audio, Speech, and Music Processing*, (2019) 2019:15. DOI: <https://doi.org/10.1186/s13636-019-0158-8> .

91. G. Chalvatzaki, X. S. Papageorgiou, P. Maragos and C. S. Tzafestas, "Learn to Adapt to Human Walking: A Model-based Reinforcement Learning Approach for a Robotic Assistant Rollator", *IEEE Robotics and Automation Letters*, vol. 4, no. 4, pp. 3774-3781, Oct. 2019. DOI: [10.1109/LRA.2019.2929996](https://doi.org/10.1109/LRA.2019.2929996)
92. P. P. Filntisis, N. Efthymiou, P. Koutras, G. Potamianos and P. Maragos, "Fusing Body Posture with Facial Expressions for Joint Recognition of Affect in Child-Robot Interaction", *IEEE Robotics and Automation Letters*, vol. 4, no. 4, pp. 4011-4018, Oct. 2019. DOI: [10.1109/LRA.2019.2930434](https://doi.org/10.1109/LRA.2019.2930434)
93. C. Werner, N. Kardaris, P. Koutras, A. Zlatintsi, P. Maragos, J. M. Bauer, and K. Hauer, "Improving gesture-based interaction between an assistive bathing robot and older adults via user training on the gestural commands", *Archives of Gerontology and Geriatrics* 87 (2020). DOI: <https://doi.org/10.1016/j.archger.2019.103996>.
94. A. Zlatintsi, A. Dometios, N. Kardaris, I. Rodomagoulakis, P. Koutras, X. Papageorgiou, C.S. Tzafestas, P. Maragos, P. Vartholomeos, K. Hauer, C. Werner, R. Annicchiarico, M.G. Lombardi, F. Adriano, T. Asfour, A.M. Sabatini, C. Laschi, M. Cianchetti, A. Güler, I. Kokkinos, B. Klein, R. López, "I-Support: A robotic platform for an assistive bathing robot for the elderly population", *Robotics and Autonomous Systems*, vol. 126, April 2020, (article) 103451. DOI: <https://doi.org/10.1016/j.robot.2020.103451>
95. C. Werner, A. C. Dometios, C. S. Tzafestas, Petros Maragos, J. M. Bauer and Klaus Hauer, "Evaluating the task effectiveness and user satisfaction with different operation modes of an assistive bathing robot in older adults", *Assistive Technology* (2020). DOI: <https://doi.org/10.1080/10400435.2020.1755744>
96. K. Kritsis, C. Garoufis, A. Zlatintsi, M. Bouillon, C. Acosta, D. Martín-Albo, R. Piechaud, P. Maragos, and V. Katsouros, "iMuSciCA Workbench: Web-based Music Activities For Science Education", *Journal of the Audio Engineering Society*, vol. 68 (10), pp.738-746, Oct. 2020. DOI: <https://doi.org/10.17743/jaes.2020.0021>
97. P. Maragos, V. Charisopoulos and E. Theodosis, "Tropical Geometry and Machine Learning", Invited Paper, in *Proceedings of the IEEE*, (Special Issue: Machine Learning and Deep Learning), vol. 109, no. 5, pp. 728-755, May 2021. DOI: <https://doi.org/10.1109/JPROC.2021.3065238>.
98. N. Melanitis and P. Maragos, "A linear method for camera pair self-calibration", *Computer Vision and Image Understanding*, vol. 210, Sep. 2021, (article) 103223. DOI: <https://doi.org/10.1016/j.cviu.2021.103223>
99. G. Moustiris, N. Kardaris, A. Tsiami, G. Chalvatzaki, P. Koutras, A. Dometios, P. Oikonomou, C. Tzafestas, P. Maragos, E. Efthymiou, X. Papageorgiou, S-E Fotinea, Y. Koumpouros, A. Vacalopoulou, E. Papageorgiou, A. Karavasili, F. Koureta, D. Dimou, A. Nikolakakis, K. Karaiskos and P. Mavridis,, "The i-Walk Lightweight Assistive Rollator: First Evaluation Study", *Frontiers in Robotics and AI*, vol.8, (article 677542), Sep. 2021. DOI: <https://doi.org/10.3389/frobt.2021.677542>
100. N. Efthymiou, P. P. Filntisis, G. Potamianos, and P. Maragos, "Visual Robotic Perception System with Incremental Learning for Child–Robot Interaction Scenarios," *Technologies*, vol. 9, no. 4, article 86, Nov. 2021. DOI: <https://doi.org/10.3390/technologies9040086>
101. N. Efthymiou, P. P. Filntisis, P. Koutras, A. Tsiami, J. Hadfield, G. Potamianos and P. Maragos, "ChildBot: Multi-robot perception and interaction with children", *Robotics and Autonomous Systems*, vol. 150, April 2022, (article) 103975. DOI: <https://doi.org/10.1016/j.robot.2021.103975>
102. N. Tsilivis, A. Tsiamis and P. Maragos, "Toward a Sparsity Theory on Weighted Lattices", *Journal of Mathematical Imaging and Vision* (2022). DOI: <https://doi.org/10.1007/s10851-022-01075-1>

### **CHAPTERS IN BOOKS**

103. P. Maragos, "Fractal Signal Analysis Using Mathematical Morphology", in *Advances in Electronics and Electron Physics*, vol.88, edited by P. Hawkes and B. Kazan, Academic Press, 1994, pp.199-246. DOI: [https://doi.org/10.1016/S0065-2539\(08\)60549-1](https://doi.org/10.1016/S0065-2539(08)60549-1)
104. P. Maragos, "Morphological Signal and Image Processing", in *Digital Signal Processing Handbook*, edited by V. Madisetti and D. Williams, CRC Press, Boca Raton, Florida, 1998, pp.74:1-74:31
105. P. Maragos and S. Tzafestas, "Min-Max Control with Application to Discrete Event Dynamic Systems", in *Advances in Manufacturing: Decision, Control and Information Technology*, edited by S. G.

- Tzafestas, Springer-Verlag London Limited, 1999, pp.217-230. DOI: [https://doi.org/10.1007/978-1-4471-0855-9\\_21](https://doi.org/10.1007/978-1-4471-0855-9_21)
106. P. Maragos and L. F.C. Pessoa, "Morphological Filtering for Image Enhancement and Detection", in *The Image and Video Processing Handbook*, edited by A. C. Bovik, Acad. Press, 2000, pp.101-116.
  107. P. Maragos, "Differential Morphology", in *Nonlinear Image Processing*, edited by S.K. Mitra and G.L. Sicuranza, Academic Press, 2001, pp.289-329.
  108. P. Maragos, "Morphological Global Reconstruction and Levelings: Lattice and PDE Approaches", in *Geometric Level Sets Methods in Imaging, Vision and Graphics*, edited by S. Osher and N. Paragios, Springer Verlag, 2003, pp.141-155. DOI: [https://doi.org/10.1007/0-387-21810-6\\_8](https://doi.org/10.1007/0-387-21810-6_8)
  109. F. Guichard, P. Maragos and J.-M. Morel, "Partial Differential Equations for Morphological Operators", in *Space, Structure, and Randomness: Contributions in Honor of Georges Matheron in the Fields of Geostatistics, Random Sets, and Mathematical Morphology*, edited by M. Bilodeau, F. Meyer and M. Schmitt, Springer Verlag (Lecture Notes in Statistics), 2005, pp.369-390. DOI: [https://doi.org/10.1007/0-387-29115-6\\_15](https://doi.org/10.1007/0-387-29115-6_15)
  110. P. Maragos, "Morphological Filtering for Image Enhancement and Feature Detection", in *The Image and Video Processing Handbook, Second Edition*, edited by A. C. Bovik, Elsevier Acad. Press, 2005, pp.135-156. DOI: <https://doi.org/10.1016/B978-012119792-6/50072-3>
  111. P. Maragos, "Partial Differential Equations for Morphological Scale-Spaces and Eikonal Applications", in *The Image and Video Processing Handbook, Second Edition*, edited by A. C. Bovik, Elsevier Acad. Press, 2005, pp.587-612. DOI: <https://doi.org/10.1016/B978-012119792-6/50098-X>
  112. S. McLaughlin and P. Maragos, "Nonlinear Methods for Speech Analysis and Synthesis", in *Advances in Nonlinear Signal and Image Processing*, edited by S. Marshall and G. L. Sicuranza, EURASIP Book Series on Signal Processing and Communications, Hindawi Publ. Corp., 2006, pp.103-140.
  113. P. Maragos, P. Gros, A. Katsamanis and G. Papandreou, "Cross-Modal Integration for Performance Improving in Multimedia: A Review", in *Multimodal Processing and Interaction: Audio, Video, Text*, edited by P. Maragos, A. Potamianos and P. Gros, Springer, Boston, MA, 2008, (pp.3-48). DOI: [https://doi.org/10.1007/978-0-387-76316-3\\_1](https://doi.org/10.1007/978-0-387-76316-3_1)
  114. G. Papandreou, A. Katsamanis, V. Pitsikalis and P. Maragos, "Adaptive Multimodal Fusion by Uncertainty Compensation with Application to Audio-Visual Speech Recognition", in *Multimodal Processing and Interaction: Audio, Video, Text*, edited by P. Maragos, A. Potamianos and P. Gros, Springer, 2008, pp.111-125. DOI: [10.1109/TASL.2008.2011515](https://doi.org/10.1109/TASL.2008.2011515)
  115. G. Evangelopoulos, K. Rapantzikos, P. Maragos, Y. Avrithis and A. Potamianos, "Audiovisual Attention Modeling and Salient Event Detection", in *Multimodal Processing and Interaction: Audio, Video, Text*, edited by P. Maragos, A. Potamianos and P. Gros, Springer, Boston, MA, 2008, (pp.179-199). DOI: [https://doi.org/10.1007/978-0-387-76316-3\\_8](https://doi.org/10.1007/978-0-387-76316-3_8)
  116. P. Maragos, "Morphological Filtering", in *The Essential Guide to Image Processing Handbook*, edited by A. C. Bovik, Elsevier, 2010. DOI: <https://doi.org/10.1016/B978-0-12-374457-9.00013-5>
  117. P. Maragos and K. Drakopoulos, "Segmentation and Skeletonization on Arbitrary Graphs Using Multiscale Morphology and Active Contours", in M. Breuss, A. Bruckstein and P. Maragos (eds), *Innovations for Shape Analysis: Models and Algorithms*, Springer, 2013, pp.53-75. DOI: [https://doi.org/10.1007/978-3-642-34141-0\\_3](https://doi.org/10.1007/978-3-642-34141-0_3)
  118. P. Maragos, "Representations for Morphological Image Operators and Analogies with Linear Operators", in *Advances in Imaging and Electron Physics*, vol.177, edited by P. W. Hawkes, Acad. Press: Elsevier Inc., 2013, pp.45-187. DOI: <https://doi.org/10.1016/B978-0-12-407702-7.00002-4>
  119. P. Maragos, V. Pitsikalis, A. Katsamanis, G. Pavlakos and S. Theodorakis, "On Shape Recognition and Language", in M. Breuss, A. Bruckstein, P. Maragos and S. Wuhler (eds), *Perspectives in Shape Analysis*, Springer, Cham, 2016, pp.321-344. DOI: [https://doi.org/10.1007/978-3-319-24726-7\\_15](https://doi.org/10.1007/978-3-319-24726-7_15)
  120. A. Katsamanis, V. Pitsikalis, S. Theodorakis and P. Maragos, "Multimodal Gesture Recognition", in S. Oviatt, B. Schuller, P. Cohen, D. Sonntag, G. Potamianos and A. Kruger (eds), *The Handbook of Multimodal-Multisensor Interfaces, Vol. 1: Foundations, User Modeling, and Multimodal Combinations*, Morgan Claypool Publ., San Rafael, CA, 2017. DOI: <https://doi.org/10.1145/3015783.3015796>
  121. C. Sakaridis, N. Kolotouros, K. Drakopoulos and P. Maragos, "Active contour methods on arbitrary graphs based on partial differential equations", in *Handbook of Numerical Analysis, Vol.20: Processing*,



*Analyzing and Learning of Images, Shapes, and Forms: Part 2*, R. Kimmel and X.-C. Tai, Eds., Elsevier North-Holland, 2019, pp.149-190. <https://doi.org/10.1016/bs.hna.2019.07.002>

122. P. Maragos and E. Theodosis, "Tropical Geometry and Piecewise-Linear Approximation of Curves and Surfaces on Weighted Lattices", in *Shape Analysis: Euclidean, Discrete and Algebraic Geometric Methods*, edited by M. Breuss, A. Bruckstein, C. Kiselman and P. Maragos, Springer, to appear.
123. V. Charisopoulos and P. Maragos, "Geometry of Neural Networks with Piecewise-Linear Activations", in *Shape Analysis: Euclidean, Discrete and Algebraic Geometric Methods*, edited by M. Breuss, A. Bruckstein, C. Kiselman and P. Maragos, Springer, to appear.

### **PUBLICATIONS IN CONFERENCE PROCEEDINGS**

124. P. Maragos, R. M. Mersereau and R. W. Schafer, "Some Experiments in ADPCM Coding of Images", *Proceedings of 1982 International Conference on Acoustics, Speech, and Signal Processing (ICASSP-1982)*, Paris, France, pp.1227-1230, May 1982.
125. P. Maragos, R. M. Mersereau and R. W. Schafer, "Two-Dimensional Linear Predictive Analysis of Arbitrarily-Shaped Regions", *Proceedings of 1983 International Conference on Acoustics, Speech, and Signal Processing (ICASSP-1983)*, Boston, Massachusetts, pp.104-107, April 1983.
126. P. Maragos and R. W. Schafer, "Multichannel Linear Predictive Coding of Color Images", *Proceedings of 1984 International Conference on Acoustics, Speech, and Signal Processing (ICASSP-1984)*, San Diego, California, pp.29.5.1-29.5.4, March 1984.
127. P. Maragos and R. W. Schafer, "Morphological Skeleton Representation and Coding of Binary Images", *Proceedings of 1984 International Conference on Acoustics, Speech, and Signal Processing (ICASSP-1984)*, San Diego, California, pp.29.2.1-29.2.4, March 1984.
128. P. Maragos and R. W. Schafer, "A Unification of Linear, Median, Order-Statistics and Morphological Filters under Mathematical Morphology", *Proceedings of 1985 International Conference on Acoustics, Speech, and Signal Processing (ICASSP-1985)*, Tampa, Florida, pp.1329-1332, March 1985.
129. P. Maragos and R. W. Schafer, "Applications of Morphological Filtering to Image Analysis and Processing", *Proceedings of 1986 International Conference on Acoustics, Speech, and Signal Processing (ICASSP-1986)*, Tokyo, Japan, pp.2067--2070, Apr. 1986.
130. P. Maragos, "Tutorial on Advances in Morphological Image Processing and Analysis", (Invited Paper), *Visual Communications and Image Processing I*, T. R. Hsing, Ed., Proceedings of SPIE, vol.707, pp. 64-74, Sep. 1986.
131. P. Maragos, "Morphology-Based Multidimensional Signal Processing", (Invited Paper), *Proceedings of 21st Annual Conference on Information Sciences and Systems*, Johns Hopkins University, Baltimore, MD, pp.513-518, March 1987.
132. P. Maragos, "Pattern Spectrum of Images and Morphological Shape-Size Complexity", *Proceedings of 1987 International Conference on Acoustics, Speech, and Signal Processing (ICASSP-1987)*, Dallas, Texas, pp.241-244, Apr. 1987.
133. R. Libeskind-Hadas and P. Maragos, "Application of Iterated Function Systems and Skeletonization to Synthesis of Fractal Images", *Visual Communications and Image Processing II*, T. R. Hsing, Ed., Proceedings of SPIE, vol.845, pp.276-284, Oct. 1987.
134. P. Maragos, "Symbolic Signal Representation Using Nonlinear Filtering," *Proceedings of 1988 International Conference on Acoustics, Speech, and Signal Processing (ICASSP-1988)*, New York, pp.944-947, April 1988.
135. P. Maragos, "Morphology-based Symbolic Image Modeling, Multiscale Nonlinear Smoothing, and Pattern Spectrum", *Proceedings of 1988 IEEE Conference on Computer Vision and Pattern Recognition (CVPR-1988)*, Ann Arbor, MI, pp.766-773, June 1988.
136. P. Maragos, "Some Applications of Mathematical Morphology to Image Analysis", *Proceedings of 1988 Electronic Imaging East Conference*, Boston, MA, pp.277-279, Oct.
137. P. Maragos and R. D. Ziff, "Threshold Parallelism in Morphological Feature Extraction, Skeletonization, and Pattern Spectrum", *Visual Communications and Image Processing III*, T. R. Hsing, Ed., Proceedings of SPIE, vol.1001, pp.106--115, Nov. 1988.

138. P. Maragos, "Optimal Morphological Approaches to Image Matching and Object Detection", *Proceedings of 1988 International Conference on Computer Vision (ICCV-1988)*, Tarpon Springs, Florida, pp.695-699, Dec. 1988.
139. P. Maragos, "Morphological Correlation and Mean Absolute Error Criteria", *Proceedings of 1989 International Conference on Acoustics, Speech, and Signal Processing (ICASSP-1989)*, Glasgow, Scotland, pp.1568-1571, May 1989.
140. C.-S. Fuh and P. Maragos, "Region-based Optical Flow Estimation", *Proceedings of 1989 IEEE Conference on Computer Vision and Pattern Recognition (CVPR-1989)*, San Diego, CA, pp.130-135, June 1989.
141. P. Maragos, "Analysis of Image-like Information in Speech Signals using Mathematical Morphology", *Proceedings of 1989 Electronic Imaging East Conference*, Boston, MA, pp.278-283, Oct. 1989.
142. P. Maragos and F. K. Sun, "Measuring Fractal Dimension: Morphological Estimates and Iterative Optimization", *Visual Communications and Image Processing IV*, W. A. Pearlman, Ed., Proceedings of SPIE, vol.1141, pp.416-430, Philadelphia, PA, Nov. 1989.
143. F.-K. Sun and P. Maragos, "Experiments on Image Compression Using Morphological Pyramids", *Visual Communications and Image Processing IV*, W. A. Pearlman, Ed., Proceedings of SPIE, vol.1141, pp.1303-1312, Philadelphia, PA, Nov. 1989.
144. P. Maragos and K. L. Young, "Fractal Excitation Signals For CELP Speech Coders", *Proceedings of 1990 International Conference on Acoustics, Speech, Signal Processing (ICASSP-1990)*, Albuquerque, New Mexico, pp.669-672, April 1990.
145. K.-M. Yang, P. Maragos, and L. Wu, "A VLSI Chip Architecture Design for 2-D Gray-level Morphological Operations", *Pattern Recognition and Image Processing*, Proceedings of SPIE, vol.1297, Orlando, FL, April 1990.
146. P. Maragos, "Affine Morphology and Affine Signal Models", *Image Algebra and Morphological Image Processing*, P. D. Gader, Ed., Proceedings of SPIE, vol.1350, pp.31-43, San Diego, CA, July 1990.
147. D. Bloomberg and P. Maragos, "Generalized Hit-Miss Operations", *Image Algebra and Morphological Image Processing*, P. D. Gader, Ed., Proceedings of SPIE, vol.1350, pp.116-128, San Diego, CA, July 1990.
148. C.-S. Fuh and P. Maragos, "Applications of Mathematical Morphology to Motion Image Analysis", *Proceedings of 1990 Electronic Imaging East Conference*, Boston, MA, pp.261-264, Oct. 1990.
149. P. Maragos, T. F. Quatieri and J. F. Kaiser, "Detecting Speech Nonlinearities in Speech using an Energy Operator", *Proceedings of 4th IEEE Digital Signal Processing Workshop*, Mohonk (New Paltz), NY, pp.1.10:1--2, Sep. 1990.
150. P. Maragos, T. F. Quatieri and J. F. Kaiser, "Speech Nonlinearities, Modulations, and Energy Operators", *Proceedings of 1991 International Conference on Acoustics, Speech, and Signal Processing (ICASSP-1991)*, Toronto, Canada, pp.421-424, May 1991.
151. P. Maragos, "Fractal Aspects of Speech Signals: Dimension and Interpolation", *Proceedings of 1991 International Conference on Acoustics, Speech, and Signal Processing (ICASSP-1991)*, Toronto, Canada, pp.417--420, May 1991.
152. C.-S. Fuh and P. Maragos, "Affine Models for Image Matching and Motion Detection", *Proceedings of 1991 International Conference on Acoustics, Speech, and Signal Processing (ICASSP-1991)*, Toronto, Canada, pp.2409-2412, May 1991.
153. P.-F. Yang and P. Maragos, "Learnability of Min-Max Pattern Classifiers", *Visual Communications and Image Processing VI*, K.-H. Tzou and Koga, Eds., Proceedings of SPIE vol.1606, pp.294-308, Boston, MA, Nov. 1991.
154. R. W. Brockett and P. Maragos, "Evolution Equations for Continuous-Scale Morphology", *Proceedings of 1992 International Conference on Acoustics, Speech, and Signal Processing (ICASSP-1992)*, San Francisco, CA, pp.III:125--128, March 1992.
155. P. Maragos, J. F. Kaiser, and T. F. Quatieri, "On Separating Amplitude from Frequency Modulations Using Energy Operators", *Proceedings of 1992 International Conference on Acoustics, Speech, and Signal Processing (ICASSP-1992)*, San Francisco, CA, pp.II:1-4, March 1992.
156. C.-S. Fuh and P. Maragos, "Affine Models for Motion and Shape Recovery", *Visual Communications and Image Processing '92*, P. Maragos, Ed., Proceedings of SPIE, vol.1818, pp.120--134, Boston, Nov. 1992.

157. P.-F. Yang and P. Maragos, "Character Recognition using Min-Max Classifiers Designed via an LMS Algorithm", *Visual Communications and Image Processing '92*, P. Maragos, Ed., Proceedings of SPIE, vol.1818, pp.674--685, Boston, Nov. 1992.
158. P. Maragos, A. C. Bovik, and T. F. Quatieri, "A Multidimensional Energy Operator for Image Processing", *Visual Communications and Image Processing '92*, P. Maragos, Ed., Proceedings of SPIE, vol.1818, pp.177-186, Boston, Nov. 1992.
159. A. C. Bovik, P. Maragos, and T. F. Quatieri, "Measuring Amplitude and Frequency Modulations in Noise Using Multiband Energy Operators", *Proceedings of 1992 International Symposium on Time-Frequency and Time-Scale Analysis*, Victoria, B.C., Canada, Oct. 1992.
160. A. C. Bovik, J. P. Havlicek, and P. Maragos, "Modulation Models for Image Processing and Wavelet-based Image Demodulation", *Proceedings of 26th Annual Asilomar Conference on Signals, Systems and Computers*, Monterey, CA, Oct. 1992.
161. A. C. Bovik, P. Maragos, and T. F. Quatieri, "Demodulation of AM--FM Signals in Noise Using Multiband Energy Operators", *Proceedings of 1993 International Symposium on Information Theory*, San Antonio, TX, Jan. 1993.
162. H. M. Hanson, P. Maragos, and A. Potamianos, "Finding Speech Formants and Modulations via Energy Separation: With an Application to a Vocoder", *Proceedings of 1993 Int'l Conference on Acoustics, Speech, and Signal Processing (ICASSP-1993)*, Minneapolis, MN, pp.II:716--719, April 1993.
163. P.-F. Yang and P. Maragos, "Morphological Systems for Character Image Processing and Recognition", *Proceedings of 1993 International Conference on Acoustics, Speech, and Signal Processing (ICASSP-1993)*, Minneapolis, MN, pp.V:97--100, April 1993.
164. P. Maragos, "Max--Min Difference Equations and Recursive Morphological Systems", *Proceedings of 1993 International Workshop on Mathematical Morphology and its Applications to Signal Processing*, Barcelona, Spain, pp.168--173, May 1993.
165. C.S. Fuh, P. Maragos, and L. Vincent, "Visual Motion Correspondence by Region-Based Approaches", *Proceedings of Asian Conference on Computer Vision (ACCV-1993)*, Osaka, Japan, pp.784--789, Nov. 1993.
166. P. Maragos, T. F. Quatieri, J. F. Kaiser, and A. Potamianos, "Demodulation of AM--FM Speech Resonances Using Energy Separation," *J. Acoust. Soc. Amer.*, vol.95, no.5, pt.2, p.2818, May 1994. (*Proceedings of 127th Meeting of the Acoustical Society of America*, Cambridge, MA, June 1994.)
167. P. Maragos, "Morphological Systems Theory: Slope Transforms, Max-Min Dynamics, Envelope Filters, and Sampling", *Mathematical Morphology and its Application to Image Processing*, J. Serra and P. Soille, Eds., Kluwer Academic Publishers, 1994, pp.149--160. (Proceedings of ISMM 1994, Fontainebleau, France, Sep. 1994.)
168. P. Maragos, "A Time and Slope Domain Theory of Morphological Systems: Slope Transforms and Max-Min Dynamics", *Proceedings of 1994 European Signal Processing Conference (EUSIPCO-1994)*, Edinburgh, Scotland, pp.II:971--974, Sep. 1994.
169. A. Potamianos and P. Maragos, "Speech Processing Applications using AM--FM Models and Energy Operators", *Proceedings of 1994 European Signal Processing Conference (EUSIPCO-1994)*, Edinburgh, Scotland, pp.III:1669--1672, Sep. 1994.
170. P. Maragos, "Differential Morphology: Multiscale Image Dynamics, Max--Min Difference Equations, and Slope Transforms", *Proceedings of 1994 International Conference on Image Processing (ICIP-1994)*, Austin, TX, pp.II:545--549, Nov. 1994.
171. P. Maragos and A. C. Bovik, "Demodulation of Images Modeled by Amplitude--Frequency Modulations Using Multidimensional Energy Separation", *Proceedings of 1994 International Conference on Image Processing (ICIP-1994)*, Austin, TX, pp.III:421--425, Nov. 1994.
172. A. Potamianos and P. Maragos, "Speech Formant Frequency and Bandwidth Tracking Using Multiband Energy Demodulation", *Proceedings of 1995 International Conference on Acoustics, Speech, and Signal Processing (ICASSP-1995)*, Detroit, MI, May 1995.
173. P. Maragos, A. Potamianos, and B. Santhanam, "Instantaneous Energy Operators: Applications to Speech Processing and Communications", *Proceedings of 1995 IEEE Workshop on Nonlinear Signal and Image Processing (NSIP-1995)*, Halkidiki, Greece, pp.955-958, June 1995.

174. B. Santhanam and P. Maragos, "Energy Demodulation of Two-Component AM-FM Signals with Application to Speaker Separation", *Proceedings of 1996 International Conference on Acoustics, Speech, and Signal Processing (ICASSP-1996)*, Atlanta, GA, May 1996.
175. L. F.C. Pessoa and P. Maragos, "Morphological/Rank Neural Networks and Their Adaptive Optimal Design for Image Processing", *Proceedings of 1996 International Conference on Acoustics, Speech, and Signal Processing (ICASSP-1996)*, Atlanta, GA, May 1996.
176. M. A. Butt and P. Maragos, "A Comparison of Multiscale Morphology Approaches: PDE's Implemented via Curve Evolution versus Chamfer Distance Transform" in *Mathematical Morphology and its Application to Image and Signal Processing*, P. Maragos, R. W. Schafer and M. A. Butt, Eds., Kluwer Academic Publishers, Boston, 1996, pp.31--40. (Proceedings of ISMM 1996, Atlanta, GA.)
177. L. F.C. Pessoa and P. Maragos, "MRL--Filters: A General Class of Nonlinear Systems and their Optimal Design", in *Mathematical Morphology and its Application to Image and Signal Processing*, P. Maragos, R. W. Schafer and M. A. Butt, Editors, Kluwer Academic Publishers, Boston, 1996, pp.155--162.
178. P. Maragos and M.A. Butt, "Partial Differential Equations in Image Analysis: Continuous Modeling, Discrete Processing", *Proceedings of 1996 International Conference on Image Processing*, Lausanne, Switzerland, Sep. 1996.
179. P. Maragos, "Nonlinear Partial Differential Equations in Image Analysis with Applications", *Proceedings of 1st Int'l Workshop on Advanced Signal Processing for Medical MRI--MRS*, Univ. of Thrace, Xanthi, Greece, March 1997.
180. B. Santhanam and P. Maragos, "Demodulation of Discrete Multicomponent AM-FM Signals Using Algebraic Separation and Energy Demodulation", *Proceedings of International Conference on Acoustics, Speech, and Signal Processing (ICASSP-97)*, Munich, Germany, April 1997.
181. A. Potamianos and P. Maragos, "Speech Analysis and Synthesis using an AM--FM Modulation Model", *Proceedings of 1997 European Speech Processing Conference*, Rhodes, Greece, Sep. 1997.
182. P. Maragos and A. Potamianos, "On Using Fractal Features of Speech Sounds in Automatic Speech Recognition", *Proceedings of 1997 European Speech Processing Conference*, Rhodes, Greece, Sep. 1997.
183. P. Maragos, "Modulation and Fractal Models for Speech Analysis and Recognition", *Proceedings of COST-249 Meeting*, pp.121-129, 1998.
184. P. Maragos and M. A. Butt, "Advances in Differential Morphology: Image Segmentation via Eikonal PDE & Curve Evolution and Reconstruction via Constrained Dilation Flow", in *Mathematical Morphology and Its Application to Image and Signal Processing*, H. Heijmans and J. Roerdink, Editors, Kluwer Academic Publishers, Dordrecht, 1998, pp. 167--174. (Proceedings of ISMM 1998, Amsterdam.)
185. P. Maragos and S. Tzafestas, "Min--Max Control with Application to Discrete Event Dynamical Systems", *Proceedings of 3rd European Robotics, Intelligent Systems, and Control Conference (EURISCON--98)*, Athens, pp. 185-186, June 1998.
186. P. Maragos and S. Tzafestas, "A Lattice Calculus Unification of Min--Max Control Systems of the Morphological and Fuzzy Type", *Proceedings of IMACS/IFAC International Symposium on Soft Computing in Engineering Applications (SOFTCOM--98)*, Athens, p. 247-248, June 1998.
187. L. F.C. Pessoa and P. Maragos, "Neural Networks with Hybrid Morphological/Rank/Linear Nodes and Their Application to Handwritten Character Recognition", *Proceedings of 1998 European Signal Processing Conference (EUSIPCO--98)*, Rhodes, Greece, pp. 1305-1308, Sep. 1998.
188. P. Maragos, "Partial Differential Equations in Image Analysis: Continuous Modeling, Discrete Processing", Invited Paper, *Proceedings of 1998 European Signal Processing Conference (EUSIPCO--98)*, Rhodes, Greece, pp. 527-536, Sep. 1998.
189. P. Maragos, M. A. Butt and L. F.C. Pessoa "Two Frontiers in Morphological Image Analysis: Differential Evolution Models and Hybrid Morphological/Linear Neural Networks", Invited Talk, *Proceedings of International Symposium on Computer Graphics, Image Processing and Vision (SIBGRAPI-98)*, Rio de Janeiro, Brazil, pp.10-17, Oct. 1998 (IEEE Comp.Soc. Press).
190. F. Meyer and P. Maragos, "Multiscale Morphological Segmentations Based on Watershed, Flooding, and Eikonal PDE", *Proceedings of International Conference on Scale-Space Theories in Computer Vision (SCALE-SPACE'99)*, Corfu, Greece, Sep. 1999; *Lectures Notes on Computer Science 1682*, pp.351-362, Springer-Verlag.

191. F. Meyer and P. Maragos, "Morphological Scale-Space Representation with Levelings", *Proceedings of International Conference on Scale-Space Theories in Computer Vision (SCALE-SPACE'99)*, Corfu, Greece, Sep. 1999; *Lectures Notes on Computer Science 1682*, pp.187-198, Springer-Verlag.
192. P. Maragos and F. Meyer, "Nonlinear PDEs and Numerical Algorithms for Modeling Levelings and Reconstruction Filters", *Proceedings of International Conference on Scale-Space Theories in Computer Vision (SCALE-SPACE'99)*, Corfu, Greece, Sep. 1999; *Lectures Notes on Computer Science 1682*, pp.363-374, Springer-Verlag.
193. P. Maragos, G. Stamou and S. Tzafestas, "A Lattice Control Model of Fuzzy Dynamical Systems in State-Space", in *Mathematical Morphology and Its Application to Image and Signal Processing*, J. Goutsias, L. Vincent and D. Bloomberg, Editors, Kluwer Acad. Publishers, Boston, 2000, pp. 61--70. (Proceedings of ISMM 2000.)
194. P. Maragos and F. Meyer, "A PDE Approach to Image Simplification via Levelings and Reconstruction Filters", *Proceedings of International Conference on Image Processing (ICIP-2000)*, Vancouver, Canada, Sep. 2000.
195. D. Dimitriadis and P. Maragos, "An Improved Energy Demodulation Algorithm Using Splines", *Proceedings of International Conference on Acoustics, Speech, and Signal Processing (ICASSP-2001)*, Salt Lake, Utah, May 2001.
196. P. Maragos, "Algebraic and PDE Approaches for Multiscale Image Operators with Global Constraints: Reference Semilattice Erosions and Levelings", *Proceedings of 2001 Int'l Conf. on Scale-Space and Morphology Theories in Computer Vision (SCALE-SPACE'01)*, Vancouver, Canada, July 2001; *Lectures Notes on Computer Science 2106*, pp.137-148, Springer-Verlag.
197. P. Maragos, V. Tzouvaras, and G. Stamou, "Synthesis and Applications of Lattice Image Operators Based On Fuzzy Norms", *Proceedings of International Conference on Image Processing (ICIP-2001)*, Thessaloniki, Greece, Oct. 2001.
198. A. Doulamis, N. Doulamis, and P. Maragos, "Generalized Multiscale Connected Operators with Applications to Granulometric Image Analysis ", *Proceedings of International Conference on Image Processing (ICIP-2001)*, Thessaloniki, Greece, Oct. 2001.
199. A. Sofou, C. Tzafestas, and P. Maragos, "Segmentation of Soilsection Images Using Connected Operators", *Proceedings of International Conference on Image Processing (ICIP-2001)*, Thessaloniki, Greece, Oct. 2001.
200. P. Maragos, E. Papatheodorou and S. Varoufakis, "Automated Estimation of the Biological Quality of Soils With Computer Vision Techniques", *Proceedings IFDICON Conference*, Santorini, June 2001.
201. P. Maragos, "A Lattice Model for Control and Computation", *Proceedings of KTISIVIOS Conference*, Santorini, June 2001.
202. D. Dimitriadis, P. Maragos, and A. Potamianos, "Modulation Features for Speech Recognition", *Proceedings of International Conference on Acoustics, Speech, and Signal Processing (ICASSP-2002)*, Orlando, Florida, May 2002.
203. V. Pitsikalis and P. Maragos, "Speech Analysis and Feature Extraction Using Chaotic Models", *Proceedings of International Conference on Acoustics, Speech, and Signal Processing (ICASSP-2002)*, Orlando, Florida, May 2002.
204. P. Maragos, T. Loupas and V. Pitsikalis, "On Improving Doppler Ultrasound Spectroscopy With Instantaneous Multiband Energy Separation", *Proceedings of International Conference on Digital Signal Processing (DSP-2002)*, Santorini, Greece, July 2002.
205. P. Maragos, A. G. Dimakis and I. Kokkinos, "Some Advances In Nonlinear Speech Modeling Using Modulations, Fractals and Chaos", *Proceedings of International Conference on Digital Signal Processing (DSP-2002)*, Santorini, Greece, July 2002.
206. P. Maragos, "Lattice and PDE Approaches for Multiscale Image Analysis and Segmentation Problems in Computer Vision", Invited Keynote Paper, *Proceedings of XI International Conference on Computing*, Mexico City, Nov. 2002.
207. D. Dimitriadis and P. Maragos, "Continuous-Time Models for AM-FM Signal Demodulation and Their Application to Speech Recognition", *Proceedings of ISCA Workshop on Non-Linear Speech Processing (NOLISP-03)*, Le Croisic, France, May 2003.
208. V. Pitsikalis and P. Maragos, "Some Advances on Speech Analysis using Generalized Dimensions", *Proc. ISCA Workshop on Nonlinear Speech Processing (NOLISP-03)*, Le Croisic, France, May 2003.

209. P. Maragos, V. Tzouvaras, and G. Stamou, "Lattice Fuzzy Image Operators and Generalized Image Gradients", *Proceedings of International Fuzzy Systems Association World Congress (IFSA2003)*, Turkey, July 2003. Lecture Notes in Computer Science 2715, Springer-Verlag, 2003, pp.412-419.
210. V. Pitsikalis, I. Kokkinos and P. Maragos, "Nonlinear Analysis of Speech Signals: Generalized Dimensions and Lyapunov Exponents", *Proceedings of European Conference on Speech Communication & Technology (EUROSPEECH-2003)*, Geneva, Switzerland, Sep. 2003.
211. D. Dimitriadis and P. Maragos, "Robust Energy Demodulation Based on Continuous Models with Application to Speech Recognition", *Proceedings of European Conference on Speech Communication & Technology (EUROSPEECH-2003)*, Geneva, Switzerland, pp.2853-2856, Sep. 2003.
212. A. Sofou and P. Maragos, "PDE-Based Modeling of Image Segmentation Using Volumic Flooding", *Proceedings of International Conference on Image Processing (ICIP-2003)*, Barcelona, Spain, Sep. 2003.
213. I. Kokkinos, R. Deriche, P. Maragos and O. Faugeras, "A Biologically Motivated and Computationally Tractable Model Of Low- and Middle-level Computational Vision", *Proceedings of European Conference on Computer Vision (ECCV-2004)*, Prague, May 2004.
214. A.-G. Dimakis and P. Maragos, "Modeling Resonances with Phase-Modulated Self-Similar Processes", *Proceedings of International Conference on Acoustics, Speech, and Signal Processing (ICASSP-2004)*, Montreal, Canada, May 2004, pp.877-880.
215. G. Papandreou and P. Maragos, "A Fast Multigrid Implicit Algorithm for the Evolution of Geodesic Active Contours", *Proceedings of IEEE Conference on Computer Vision and Pattern Recognition (CVPR-2004)*, Washington DC, June-July 2004, Vol.II: pp.689-894.
216. X. C. Halkias and P. Maragos, "Analysis of Kirlian Images: Feature Extraction and Segmentation", *Proceedings International Conference on Signal Processing (ICSP'04)*, Beijing, China, Aug.-Sep. 2004.
217. I. Kokkinos, G. Evangelopoulos and P. Maragos, "Advances in Texture Analysis: Energy Dominant Component & Multiple Hypothesis Testing", *Proceedings of International Conference on Image Processing (ICIP-2004)*, Singapore, Oct. 2004.
218. I. Kokkinos, G. Evangelopoulos and P. Maragos, "Modulation-Feature Based Textured Image Segmentation Using Curve Evolution", *Proceedings of International Conference on Image Processing (ICIP-2004)*, Singapore, Oct. 2004.
219. P. Maragos, "A Variational Formulation of PDE's for Dilations and Levelings", in *Mathematical Morphology: 40 Years On*, edited by C. Ronse, L. Najman and E. Decenciere, Springer, 2005, pp.321-332. (*Proceedings 7<sup>th</sup> International Symposium on Mathematical Morphology – ISMM2005*, Paris, France, Apr. 2005.)
220. G. Papandreou and P. Maragos, "A Cross-Validatory Statistical Approach to Scale Selection for Image Denoising by Nonlinear Diffusion", *Proceedings of IEEE Conference on Computer Vision and Pattern Recognition (CVPR-2005)*, San Diego, June 2005.
221. A. Sofou, G. Evangelopoulos and P. Maragos, "Coupled Geometric and Texture PDE-based Segmentation", *Proceedings of International Conference on Image Processing (ICIP-2005)*, Genoa, Italy, Sep. 2005.
222. G. Papandreou and P. Maragos, "Image Denoising in Nonlinear Scale-Spaces: Automatic Scale Selection Through Cross-Validatory Model Selection", *Proceedings of International Conference on Image Processing (ICIP-2005)*, Genoa, Italy, Sep. 2005.
223. D. Dimitriadis, P. Maragos and A. Potamianos, "Auditory Teager Energy Cepstrum Coefficients for Robust Speech Recognition", *Proceedings of 9<sup>th</sup> European Conference on Speech Communication and Technology (INTERSPEECH 2005 – EUROSPEECH)*, Lisboa, Portugal, Sep. 2005.
224. A. Katsamanis and P. Maragos, "Advances in Statistical Estimation and Tracking of AM-FM Speech Components", *Proceedings of 9<sup>th</sup> European Conference on Speech Communication and Technology (INTERSPEECH 2005 – EUROSPEECH)*, Lisboa, Portugal, Sep. 2005.
225. G. Evangelopoulos and P. Maragos, "Speech Event Detection Using Multiband Modulation Energy", *Proceedings of 9<sup>th</sup> European Conference on Speech Communication and Technology (INTERSPEECH 2005 – EUROSPEECH)*, Lisboa, Portugal, Sep. 2005.
226. D. Dimitriadis, A. Katsamanis, P. Maragos, G. Papandreou and V. Pitsikalis, "Towards Automatic Speech Recognition in Adverse Environments", *Proceedings of HERCMA Conference*, Athens, Sep. 2005.

227. I. Kokkinos and P. Maragos, "An Expectation-Maximization Approach to the Synergy Between Image Segmentation and Object Categorization", *Proceedings of International Conference on Computer Vision (ICCV-2005)*, Beijing, China, Oct. 2005.
228. G. Evangelopoulos, I. Kokkinos and P. Maragos, "Advances in Variational Image Segmentation using AM-FM Models: Regularized Demodulation and Probabilistic Cue Integration", *Proc. ICCV-2005 Int'l Workshop on Variational and Level Set Methods (VLSM-2005)*, Beijing, China, Oct. 2005.
229. I. Kokkinos and P. Maragos, "A Detection-Theoretic Approach to Texture and Edge Discrimination", *Proc. ICCV-2005 Int'l Workshop on Texture*, Beijing, China, Oct. 2005.
230. I. Kokkinos, P. Maragos and A. Yuille, "Bottom-Up & Top-Down Object Detection Using Primal Sketch Features and Graphical Models", *Proceedings of IEEE Conference on Computer Vision and Pattern Recognition (CVPR-2006)*, San Diego, CA, June 2006.
231. E. Alexandratou, A. Sofou, H. Papasaika, P. Maragos, D. Yova and N. Kavantzias, "Computer Vision Algorithms in DNA Ploidy Image Analysis", In *Imaging, Analysis, and Manipulation of Biomolecules, Cells, and Tissues IV*, edited by D.L. Farkas, D.V. Nicolau and R.C. Leif, Proc. SPIE 6088, 2006.
232. A. Katsamanis, G. Papandreou, V. Pitsikalis, and P. Maragos, "Multimodal Fusion by Adaptive Compensation for Feature Uncertainty with Application to Audiovisual Speech Recognition", *Proceedings 14th European Signal Processing Conference (EUSIPCO-2006)*, Florence, Italy, Sep. 2006.
233. S. Leukimmiatis and P. Maragos, "Optimum Post-Filter Estimation for Noise Reduction in Multichannel Speech Processing", *Proceedings of 14th European Signal Processing Conference (EUSIPCO-2006)*, Florence, Italy, Sep. 2006.
234. V. Pitsikalis, A. Katsamanis, G. Papandreou, and P. Maragos, "Adaptive Multimodal Fusion by Uncertainty Compensation" *Proceedings of Int'l Conf. on Spoken Language Processing (INTERSPEECH 2006 - ICSLP)*, Pittsburgh PA, USA, pp. 2458-2461, Sep. 2006.
235. S. Leukimmiatis, D. Dimitriadis and P. Maragos, "An Optimum Microphone Array Post-Filter for Speech Applications", *Proceedings of Int'l Conf. on Spoken Language Processing (INTERSPEECH 2006 - ICSLP)*, Pittsburgh PA, USA, pp. 2142-2145, Sep. 2006.
236. A. Roussos and P. Maragos, "Vector-Valued Image Interpolation by an Anisotropic Diffusion-Projection PDE", *Proceedings of 1<sup>st</sup> International Conference on Scale Space and Variational Methods in Computer Vision (SSVM-2007)*, Ischia, Italy, May-June 2007; *Lecture Notes in Computer Science 4485*, pp. 104-115, Springer-Verlag, 2007. **Best Paper Award.**
237. A. Katsamanis, P. Tsiakoulis, P. Maragos and A. Potamianos, "Investigations in articulatory synthesis", *Proceedings of Int'l Congress of Phonetic Sciences (ICPhS XVI)*, Aug. 2007.
238. D. Dimitriadis, J. C. Segura, L. Garcia, A. Potamianos, P. Maragos and V. Pitsikalis, "Advanced Front-end for Robust Speech Recognition in Extremely Adverse Environments", *Proceedings of International Conference on Speech Technology and Communication (InterSpeech 2007 - EuroSpeech)*, Antwerp, Belgium, Aug. 2007.
239. D. Dimitriadis, P. Maragos and S. Lefkimmiatis, "Multiband, Multisensor Features for Robust Speech Recognition", *Proceedings of International Conference on Speech Technology and Communication (InterSpeech 2007 - EuroSpeech)*, Antwerp, Belgium, Aug. 2007.
240. K. Rapantzikos, G. Evangelopoulos, P. Maragos and Y. Avrithis, "An Audio-Visual Saliency Model for Movie Summarization", *Proceedings of IEEE International Workshop on Multimedia Signal Processing (MMSP-2007)*, Chania, Greece, Oct. 2007.
241. G. Papandreou, A. Katsamanis, V. Pitsikalis, and P. Maragos, "Multimodal Fusion and Learning with Uncertain Features Applied to Audiovisual Speech Recognition", *Proceedings of IEEE International Workshop on Multimedia Signal Processing (MMSP-2007)*, Chania, Greece, Oct. 2007.
242. A. Katsamanis, G. Papandreou and P. Maragos, "Audiovisual-to-Articulatory Speech Inversion Using HMMs", *Proceedings of IEEE International Workshop on Multimedia Signal Processing (MMSP-2007)*, Chania, Greece, Oct. 2007.
243. A. Sofou and P. Maragos, "Generalized Watershed and PDEs for Geometric-Textural Segmentation", *Proceedings of 8<sup>th</sup> International Symposium on Mathematical Morphology (ISMM 2007)*, Rio de Janeiro, Brazil, Oct. 2007. Published in *Mathematical Morphology and its Applications to Signal and Image Processing*, edited by G.J.F. Banon, J. Barrera and U. Braga-Neto, MCT/INPE, Brazil, 2007, pp.411-422.

244. P. Maragos and G. Evangelopoulos, "Leveling Cartoons, Texture Energy Markers, and Image Decomposition", *Proceedings of 8<sup>th</sup> International Symposium on Mathematical Morphology (ISMM 2007)*, Rio de Janeiro, Brazil, Oct. 2007. Published in *Mathematical Morphology and its Applications to Signal and Image Processing*, edited by G.J.F. Banon, J. Barrera and U. Braga-Neto, MCT/INPE, Brazil, 2007, pp.125-138.
245. E. Alexandratou, D. Yova, D. Gorpas, P. Maragos, G. Agrogiannis and N. Kavantzias, "Texture Analysis of Tissues in Gleason Grading of Prostate Cancer", in *Imaging, Manipulation and Analysis of Biomolecules, Cells and Tissues VI*, Proc. SPIE vol. 6859, 2008. (SPIE Photonics West, BiOS 09, San Jose, California, Jan. 2008).
246. A. Katsamanis, G. Papandreou and P. Maragos, "Audiovisual-to-Articulatory Speech Inversion Using Active Appearance Models for the Face and Hidden Markov Models for the Dynamics", *Proceedings of International Conference on Acoustics, Speech, and Signal Processing (ICASSP-08)*, Las Vegas, USA, April 2008.
247. G. Papandreou, P. Maragos and A. Kokaram, "Image Inpainting With a Wavelet Domain Hidden Markov Tree Model", *Proceedings of International Conference on Acoustics, Speech, and Signal Processing (ICASSP-08)*, Las Vegas, USA, April 2008.
248. S. Lefkimmiatis, P. Maragos and A. Katsamanis, "Multisensor Multiband Cross-Energy Tracking For Feature Extraction and Recognition", *Proceedings of International Conference on Acoustics, Speech, and Signal Processing (ICASSP-08)*, Las Vegas, USA, April 2008.
249. D. Spachos, A. Zlatintsi, V. Moschou, P. Antonopoulos, E. Benetos, M. Kotti, K. Tzimouli, C. Kotropoulos, N. Nikolaidis, P. Maragos and I. Pitas, "MUSCLE Movie Database: A Multimodal Corpus With Rich Annotation For Dialogue And Saliency Detection", *Proceedings of International Conference on Language Resources and Evaluation, (LREC-2008)*, Marrakech, Morocco, May 2008.
250. G. Evangelopoulos and P. Maragos, "Image Decomposition into Structure and Texture Subcomponents with Multifrequency Modulation Constraints", *Proceedings of IEEE Conference on Computer Vision and Pattern Recognition (CVPR-2008)*, Anchorage, AL, June 2008.
251. G. Papandreou and P. Maragos, "Adaptive and Constrained Algorithms for Inverse Compositional Active Appearance Model Fitting", *Proceedings of IEEE Conference on Computer Vision and Pattern Recognition (CVPR-2008)*, Anchorage, AL, June 2008.
252. G. Caridakis, O. Diamanti, K. Karpouzis and P. Maragos, "Automatic Sign Language Recognition: Vision-based Feature Extraction and Probabilistic Recognition Scheme From Multiple Cues", *Proceedings of 1st ACM International Conference on Pervasive Technologies Related to Assistive Environments (PETRA)*, Athens, Greece, July 2008.
253. Y. Laprie, P. Maragos and J. Schoentgen, "How Can Acoustic-to-Articulatory Maps Be Constrained?", *Proceedings of 16th European Signal Processing Conference (EUSIPCO-2008)*, Lausanne, Switzerland, Aug. 2008.
254. A. Katsamanis, G. Ananthkrishnan, G. Papandreou, P. Maragos and O. Engwall, "Audiovisual Speech Inversion By Switching Dynamical Modeling Governed By A Hidden Markov Process", *Proceedings of 16th European Signal Processing Conference (EUSIPCO-2008)*, Lausanne, Switzerland, Aug. 2008.
255. M. Aron, A. Roussos, M.-O. Berger, E. Kerrien and P. Maragos, "Multimodality Acquisition of Articulatory Data And Processing", *Proceedings of 16th European Signal Processing Conference (EUSIPCO-2008)*, Lausanne, Switzerland, Aug. 2008.
256. P. Maragos and C. Vachier, "A PDE Formulation For Viscous Morphological Operators With Extensions To Intensity-Adaptive Operators", *Proceedings of International Conference on Image Processing (ICIP-2008)*, San Diego, California, Oct. 2008.
257. G. Evangelopoulos and P. Maragos, "Texture Modulation-Constrained Image Decomposition", *Proceedings of International Conference on Image Processing (ICIP-2008)*, San Diego, California, Oct. 2008.
258. E. Pnevmatikakis and P. Maragos, "An Inpainting System For Automatic Image Structure – Texture Restoration With Text Removal", *Proceedings of International Conference on Image Processing (ICIP-2008)*, San Diego, California, Oct. 2008.
259. O. Diamanti and P. Maragos, "Geodesic Active Regions For Segmentation And Tracking of Human Gestures in Sign Language Videos", *Proceedings of International Conference on Image Processing (ICIP-2008)*, San Diego, California, Oct. 2008.



260. G. Evangelopoulos, K. Rapantzikos, A. Potamianos, P. Maragos, A. Zlatintsi and Y. Avrithis, "Movie Summarization Based On Audio-Visual Saliency Detection", *Proceedings of International Conference on Image Processing (ICIP-2008)*, San Diego, California, Oct. 2008.
261. S. Lefkimiatis, G. Papandreou and P. Maragos, "Photon-Limited Image Denoising By Inference On Multiscale Models", *Proceedings of International Conference on Image Processing (ICIP-2008)*, San Diego, California, Oct. 2008.
262. A. Katsamanis, A. Roussos and P. Maragos, "Inversion from Audiovisual Speech to Articulatory Information by Exploiting Multimodal Data", *Proceedings of International Speech Production Seminar (ISSP-2008)*, Strasbourg, France, Dec. 2008.
263. A. Katsamanis, P. Maragos, "Fricative synthesis investigations using the transmission line matrix method", *J. Acoustical Society of America*, vol. 123, issue 5, 3741, 2008. doi: 10.1121/1.2935277.
264. D. Gorpas, P. Maragos and D. Yova, "A new morphological segmentation algorithm for biomedical imaging applications", *Proc. SPIE* vol.7251, *Image Processing: Machine Vision Applications II*, 72510C, Feb. 2009. doi:10.1117/12.805574.
265. S.-E. Fotinea, E. Efthimiou, G. Caridakis, O. Diamanti, N. Mitsou, K. Karpouzis, C. Tzafestas and P. Maragos, "DIANOEMA: Visual analysis and sign recognition for GSL modelling and robot teleoperation", *Proceedings of 8th International Gesture Workshop*, Bielefeld, Germany, Feb. 2009.
266. S. Theodorakis, A. Katsamanis and P. Maragos, "Product-HMMs for Automatic Sign Language Recognition", *Proceedings of International Conference on Acoustics, Speech and Signal Processing (ICASSP-2009)*, Taipei, Taiwan, April 2009, pp.1601-1604.
267. G. Evangelopoulos, A. Zlatintsi, G. Skoumas, K. Rapantzikos, A. Potamianos, P. Maragos and Y. Avrithis, "Video Event Detection and Summarization Using Audio, Visual and Text Saliency", *Proceedings of International Conference on Acoustics, Speech and Signal Processing (ICASSP-2009)*, Taipei, Taiwan, April 2009, pp.3553-3556.
268. D. Dimitriadis, A. Metallinou, I. Konstantinou, G. Goumas, P. Maragos and N. Koziris, "GRIDNEWS: A Distributed Automatic Greek Broadcast Transcription System", *Proceedings of International Conference on Acoustics, Speech and Signal Processing (ICASSP-2009)*, Taipei, Taiwan, April 2009, pp.1917-1920.
269. E. Efthimiou, S.-E. Fotinea, C. Vogler, T. Hanke, J. Glauert, R. Bowden, A. Braffort, C. Collet, P. Maragos, and J. Segouat, "Sign Language Recognition, Generation, and Modelling: A Research Effort with Applications in Deaf Communication", *Proceedings of 5th Conf. on Universal Access in Human-Computer Interaction* (jointly with *HCI International 2009*), San Diego, USA, July 2009. Springer Lecture Notes in Computer Science vol.5614, pp. 21-30, 2009.
270. C. Tzafestas, N. Mitsou, N. Georgakarakos, O. Diamanti, P. Maragos, S.-E. Fotinea and E. Efthimiou, "Gestural teleoperation of a mobile robot based on visual recognition of sign language static handshapes", *Proceedings of the 18th IEEE International Symposium on Robot and Human Interactive Communication (RO-MAN 2009)*, pp.1073-1079, Sep.-Oct. 2009, Japan.
271. S. Lefkimiatis, G. Papandreou and P. Maragos, "Poisson-Haar Transform: A Nonlinear Multiscale Representation For Photon-Limited Image Denoising", *Proceedings of International Conference on Image Processing (ICIP-2009)*, Cairo, Egypt, Nov. 2009.
272. A. Roussos, A. Katsamanis and P. Maragos, "Tongue Tracking In Ultrasound Images With Active Appearance Models", *Proceedings of International Conference on Image Processing (ICIP-2009)*, Cairo, Egypt, Nov. 2009.
273. P. Maragos and C. Vachier, "Overview of Adaptive Morphology: Trends And Perspectives", *Proceedings of International Conference on Image Processing (ICIP-2009)*, Cairo, Egypt, Nov. 2009.
274. S. Theodorakis, V. Pitsikalis and P. Maragos, "Model-Level Data-Driven Sub-Units for Signs in Videos of Continuous Sign Language", *Proceedings of International Conference on Acoustics, Speech and Signal Processing (ICASSP-2010)*, Dallas, Texas, USA, March 2010.
275. V. Pitsikalis, S. Theodorakis and P. Maragos, "Data-Driven Sub-Units and Modeling Structure for Continuous Sign Language Recognition with Multiple Cues", *Proc. Int'l Conf. LREC: 4th Workshop on the Representation and Processing of Sign Languages: Corpora and Sign Language Technologies*, Valletta, Malta, May 2010.
276. E. Efthimiou, S.-E. Fotinea, T. Hanke, J. Glauert, R. Bowden, A. Braffort, C. Collet, P. Maragos, and F. Goudenove, "Sign Language Recognition, Generation, and Modelling: A Research Effort with

- Applications in Deaf Communication”, *Proc. Int’l Conf. LREC: 4th Workshop on the Representation and Processing of Sign Languages: Corpora and Sign Language Technologies*, Valletta, Malta, May 2010.
277. A. Roussos, S. Theodorakis, V. Pitsikalis and P. Maragos, “Hand Tracking and Affine Shape-Appearance Handshape Sub-units in Continuous Sign Language Recognition”, *Trends and Topics in Computer Vision: ECCV 2010 Workshops*, LNCS 6553, Springer, 2012, pp.258-272. (*Proceedings of ECCV’10 Workshop on Sign, Gesture and Activity*, Hersonissos, Crete, Greece, Sep. 2010.)
  278. A. Roussos and P. Maragos, “Tensor-Based Image Diffusions Derived From Generalizations of the Total Variation and Beltrami Functionals”, *Proceedings of International Conference on Image Processing (ICIP-2010)*, Hong Kong, Sep. 2010.
  279. I. Gkioulekas, G. Evangelopoulos, P. Maragos, “Spatial Bayesian Surprise For Image Saliency And Quality Assessment”, *Proceedings of International Conference on Image Processing (ICIP-2010)*, Hong Kong, Sep. 2010.
  280. A. Roussos, S. Theodorakis, V. Pitsikalis and P. Maragos, “Affine-Invariant Modeling of Shape-Appearance Images Applied On Sign Language Handshape Classification”, *Proceedings of International Conference on Image Processing (ICIP-2010)*, Hong Kong, Sep. 2010.
  281. S. Theodorakis, V. Pitsikalis and P. Maragos, “Advances in Dynamic-Static Integration of Manual Cues for Sign Language Recognition”, GW 2011, *Proceedings 9th International Gesture Workshop (GW 2011): Gesture in Embodied Communication and Human-Computer Interaction*, May 2011, Athens, Greece.
  282. I. Rodomagoulakis, S. Theodorakis, V. Pitsikalis and P. Maragos, “Experiments on Global and Local Active Appearance Models for Analysis of Sign Language Facial Expressions”, *Proceedings 9th International Gesture Workshop (GW 2011): Gesture in Embodied Communication and Human-Computer Interaction*, May 2011, Athens, Greece.
  283. V. Pitsikalis, S. Theodorakis, C. Vogler and P. Maragos, “Advances in Phonetics-based Sub-Unit Modeling for Transcription Alignment and Sign Language Recognition”, *Proceedings of CVPR-2011 Workshop on Gesture Recognition*, Colorado Springs, USA, June 2011. **Best Paper Award.**
  284. A. Zlatintsi and P. Maragos, “Musical Instruments Signal Analysis and Recognition Using Fractal Features”, *Proceedings of 19th European Signal Processing Conference (EUSIPCO-2011)*, Barcelona, Spain, Aug.-Sep. 2011.
  285. E. Efthimiou, S-E. Fotinea, T. Hanke, J. Glauert, R. Bowden, A. Braffort, C. Collet, P. Maragos, F. Lefebvre-Albaret, “The Dicta-Sign Wiki: Enabling Web Communication for the Deaf”, in *Computers Helping People with Special Needs*, (K. Miesenberger et al., eds.), LNCS vol. 7383, pp. 205-212, Springer, July 2012. *Proceedings of 13th Int’l Conference ICCHP 2012*, Linz, Austria, July 2012.
  286. A. Zlatintsi and P. Maragos, “AM-FM Modulation Features for Music Instrument Signal Analysis and Recognition”, *Proceedings of 20th European Signal Processing Conference (EUSIPCO-2012)*, Bucharest, Romania, Aug. 2012.
  287. A. Zlatintsi, P. Maragos, A. Potamianos and G. Evangelopoulos, “A Saliency-Based Approach to Audio Event Detection and Summarization”, *Proceedings of 20th European Signal Processing Conference (EUSIPCO-2012)*, Bucharest, Romania, Aug. 2012
  288. C. Georgakis, P. Maragos, G. Evangelopoulos and D. Dimitriadis, “Dominant Spatio-Temporal Modulations And Energy Tracking In Videos: Application To Interest Point Detection For Action Recognition”, *Proceedings of International Conference on Image Processing (ICIP-2012)*, Orlando, FL, USA, Sep.-Oct. 2012.
  289. S. Theodorakis, V. Pitsikalis, I. Rodomagoulakis and P. Maragos, “Recognition with Raw Canonical Phonetic Movement and Handshape SubUnits on Videos of Continuous Sign Language”, *Proceedings of International Conference on Image Processing (ICIP-2012)*, Orlando, FL, USA, Sep.-Oct. 2012.
  290. E. Antonakos, V. Pitsikalis, I. Rodomagoulakis and P. Maragos, “Unsupervised Classification of Extreme Facial Events using Active Appearance Models Tracking for Sign Language Videos”, *Proceedings of International Conference on Image Processing (ICIP-2012)*, Orlando, FL, USA, Sep.-Oct. 2012.
  291. S. Stasinopoulos and P. Maragos, “Human Action Recognition Using Histogrammic Methods And Hidden Markov Models for Visual Martial Arts Applications”, *Proceedings of International Conference on Image Processing (ICIP-2012)*, Orlando, FL, USA, Sep.-Oct. 2012.

292. S. Lefkimiatis, A. Roussos, M. Unser and P. Maragos, "Convex Generalizations of Total Variation Based on the Structure Tensor with Applications to Inverse Problems", *Proc. International Conference on Scale Space and Variational Methods in Computer Vision (SSVM 2013)*, Springer-Verlag, LNCS 7893, pp. 48–60, 2013.
293. N. Karianakis and P. Maragos, "An Integrated System for Digital Restoration of Prehistoric Theran Wall Paintings", *Proceedings 18<sup>th</sup> International Conference on Digital Signal Processing (DSP-2013)*, Santorini, Greece, July 2013.
294. I. Rodomagoulakis, P. Giannoulis, Z.-I. Skordilis, P. Maragos and G. Potamianos, "Experiments on Far-field Multichannel Speech Processing in Smart Homes", *Proceedings 18<sup>th</sup> International Conference on Digital Signal Processing (DSP-2013)*, Santorini, Greece, July 2013.
295. I. Rodomagoulakis, G. Potamianos and P. Maragos, "Advances In Large Vocabulary Continuous Speech Recognition In Greek: Modeling And Nonlinear Features", *Proceedings 21<sup>st</sup> European Signal Processing Conference (EUSIPCO-2013)*, Marrakech, Morocco, Sep. 2013.
296. A. Katsamanis, I. Rodomagoulakis, G. Potamianos, P. Maragos and A. Tsiami, "Robust Far-Field Spoken Command Recognition for Home Automation Combining Adaptation and Multichannel Processing", *Proceedings of 39<sup>th</sup> International Conference on Acoustics, Speech and Signal Processing (ICASSP 2014)*, Florence, Italy, May 2014.
297. P. Giannoulis, A. Tsiami, I. Rodomagoulakis, A. Katsamanis, G. Potamianos, P. Maragos, "The ATHENA-RC system for speech activity detection and speaker localization in the DIRHA smart home", *Proceedings of 4<sup>th</sup> Joint Workshop on Hands-free Speech Communication and Microphone Arrays (HSCMA 2014)*, Nancy, France, May, 2014.
298. L. Cristoforetti, M. Ravanelli, M. Omologo, A. Sosi, A. Abad, M. Hagmuller and P. Maragos, "The DIRHA Simulated Corpus", *Proceedings of 9<sup>th</sup> Language Resources and Evaluation Conference (LREC 2014)*, Reykjavik, Iceland, May 2014.
299. X. Papageorgiou, G. Chalvatzaki, C. Tzafestas and P. Maragos, "Hidden Markov Modeling of Human Normal Gait using Laser Range Finder for a Mobility Assistance Robot", *Proceedings of International Conference on Robotics and Automation (ICRA 2014)*, Hong Kong, China, May 31 - June 7, 2014. pp.482-487.
300. S.-E. Fotinea, E. Efthimiou, A.-L. Dimou, T. Goulas, P. Karioris, A. Peer, P. Maragos, C. Tzafestas, I. Kokkinos, K. Hauer, K. Mombaur, I. Koumpouros, B. Stanczyk, "Data Acquisition Towards Defining A Multimodal Interaction Model For Human- Assistive Robot Communication", *Proceedings of 16<sup>th</sup> International Conference on Human-Computer Interaction (HCII 2014)*, Heraklion, Crete, June 2014.
301. X. Papageorgiou, C. Tzafestas, P. Maragos, G. Pavlakos, G. Chalvatzaki, G. Moustiris, I. Kokkinos, A. Peer, B. Stanczyk, E. Fotinea, E. Efthimiou, "Advances in Intelligent Mobility Assistance Robot integrating Multimodal Sensory Processing", *Proceedings of 16<sup>th</sup> International Conference on Human-Computer Interaction (HCII 2014)*, Heraklion, Crete, June 2014.
302. P. Koutras, A. Katsamanis, and P. Maragos, "Predicting Eyes' Fixations in Movie Videos: Visual Saliency Experiments on a New Eye-Tracking Database", *Proceedings of 16<sup>th</sup> International Conference on Human-Computer Interaction (HCII 2014)*, Heraklion, Crete, June 2014.
303. T. Chaspari, D. Dimitriadis and P. Maragos, "Emotion Classification of Speech Using Modulation Features", *Proceedings of 22<sup>nd</sup> European Signal Processing Conference (EUSIPCO 2014)*, Lisbon, Portugal, September 2014.
304. A. Zlatintsi and P. Maragos, "Comparison of Different Representations Based on Nonlinear Features for Music Genre Classification", *Proceedings of 22<sup>nd</sup> European Signal Processing Conference (EUSIPCO 2014)*, Lisbon, Portugal, September 2014.
305. A. Tsiami, A. Katsamanis, P. Maragos and G. Potamianos, "Experiments in Acoustic Source Localization Using Sparse Arrays in Adverse Indoors Environments", *Proceedings of 22<sup>nd</sup> European Signal Processing Conference (EUSIPCO 2014)*, Lisbon, Portugal, September 2014.
306. P. Giannoulis, G. Potamianos, A. Katsamanis and P. Maragos, "Multi-Microphone Fusion for Detection of Speech and Acoustic Events in Smart Spaces", *Proceedings of 22<sup>nd</sup> European Signal Processing Conference (EUSIPCO 2014)*, Lisbon, Portugal, September 2014.
307. A. Tsiami, I. Rodomagoulakis, P. Giannoulis, A. Katsamanis, G. Potamianos and P. Maragos, "ATHENA: A Greek Multi-Sensory Database for Home Automation Control", *Proceedings of 15<sup>th</sup>*

- Annual Conference of International Speech Communication Association (INTERSPEECH 2014)*, Singapore, September 2014.
308. G. Pavlakos, S. Theodorakis, V. Pitsikalis, A. Katsamanis and P. Maragos, “Kinect-Based Multimodal Gesture Recognition Using a Two-Pass Fusion Scheme”, *Proceedings of 21<sup>st</sup> International Conference on Image Processing (ICIP 2014)*, Paris, France, October 2014.
  309. K. Maninis, P. Koutras and P. Maragos, “Advances on Action Recognition in Videos Using an Interest Point Detector Based on Multiband Spatio-Temporal Energies”, *Proceedings of 21<sup>st</sup> International Conference on Image Processing (ICIP 2014)*, Paris, France, October 2014.
  310. G. Chalvatzaki, G. Pavlakos, K. Maninis, X. Papageorgiou, V. Pitsikalis, C. Tzafestas and P. Maragos, “Towards an Intelligent Robotic Walker for Assisted Living using Multimodal Sensorial Data”, *Proceedings 4th International Conference on Wireless Mobile Communication and Healthcare (MOBIHEALTH-2014)*, Athens, Greece, Nov. 2014.
  311. Z. I. Skordilis, A. Tsiami, P. Maragos, G. Potamianos, L. Spelgatti and R. Sannino, “Multichannel Speech Enhancement Using MEMS Microphones”, *Proceedings of 40<sup>th</sup> International Conference on Acoustics, Speech and Signal Processing (ICASSP 2015)*, Brisbane, Australia, Apr. 2015, pp.2729-2733.
  312. P. Maragos and P. Koutras, “Max-Product Dynamical Systems And Applications To Audio-Visual Salient Event Detection In Videos”, *Proceedings of 40<sup>th</sup> International Conference on Acoustics, Speech and Signal Processing (ICASSP 2015)*, Brisbane, Australia, Apr. 2015, pp.2284-2288.
  313. A. Zlatintsi, P. Koutras, N. Efthymiou, P. Maragos, A. Potamianos and K. Pastra “Quality Evaluation of Computational Models for Movie Summarization”, *Proc. 7th Int'l. Workshop on Quality of Multimedia Experience (QoMEX-2015)*, Costa Navarino, Messinia, Greece, May 2015.
  314. C. Bambis and P. Maragos, “Unifying the Random Walker Algorithm and the SIR Model for Graph Clustering and Image Segmentation”, *Proc. IEEE Int'l. Conf. on Image Processing (ICIP-2015)*, Quebec, Canada, Sep. 2015.
  315. P. Koutras, A. Zlatintsi, E. Iosif, A. Katsamanis, P. Maragos and A. Potamianos “Predicting Audio-Visual Salient Events Based on Visual, Audio and Text Modalities for Movie Summarization”, *Proc. IEEE Int'l. Conf. on Image Processing (ICIP-2015)*, Quebec, Canada, Sep. 2015.
  316. P. Koutras and P. Maragos, “Estimation of Eye Gaze Direction Angles Based on Active Appearance Models”, *Proc. IEEE Int'l. Conf. on Image Processing (ICIP-2015)*, Quebec, Canada, Sep. 2015.
  317. P. Giannoulis, A. Brutti, M. Matassoni, A. Abad, A. Katsamanis, M. Matos, G. Potamianos and P. Maragos, “Multi-room speech activity detection using a distributed microphone network in domestic environments”, *Proc. European Signal Processing Conf. (EUSIPCO-2015)*, Nice, France, Sep. 2015.
  318. A. Zlatintsi, E. Iosif, P. Maragos and A. Potamianos, “Audio Salient Event Detection and Summarization using Audio and Text Modalities”, *Proc. European Signal Processing Conf. (EUSIPCO-2015)*, Nice, France, Sep. 2015.
  319. X. Papageorgiou, G. Chalvatzaki, C. Tzafestas and P. Maragos, “Hidden Markov Modeling of Human Pathological Gait using Laser Range Finder for an Assisted Living Intelligent Robotic Walker”, *Proc. of the 2015 IEEE/RSJ Int'l Conference on Intelligent Robots and Systems (IROS 2015)*, Hamburg, Germany, Sep. 28 – Oct. 02, 2015.
  320. P. Maragos, V. Pitsikalis, A. Katsamanis, N. Kardaris, E. Mavroudi, I. Rodomagoulakis and A. Tsiami, “Multimodal Sensory Processing for Human Action Recognition in Mobility Assistive Robotics”, *Proc. IROS-2015 Workshop on "Cognitive Mobility Assistance Robots"*, Hamburg, Germany, Sep. 2015. <http://robotics.ntua.gr/IROS2015-Workshop-Cognitive-Mobility-Assistance/>
  321. X. Papageorgiou, G. Moustiris, V. Pitsikalis, G. Chalvatzaki, A. Dometios, N. Kardaris, C. Tzafestas, P. Maragos, “User-Oriented Cognitive Interaction and Control for an Intelligent Robotic Walker”, *Proc. Workshop of the 7th Intl. Conf. on Social Robotics, "Improving the quality of life in the elderly using robotic assistive technology: benefits, limitations, and challenges"*, Paris, France, Oct. 2015.
  322. I. Rodomagoulakis, N. Kardaris, V. Pitsikalis, E. Mavroudi, A. Katsamanis, A. Tsiami, and P. Maragos, “Multimodal Human Action Recognition in Assistive Human-Robot Interaction”, *Proceedings of 41<sup>st</sup> International Conference on Acoustics, Speech and Signal Processing (ICASSP 2016)*, Shanghai, China, Mar. 2016.
  323. L. Flokas and P. Maragos, “Hard Threshold Least Mean Squares Algorithm”, 9<sup>th</sup> Panhellenic Conference of ECE Students, Chania, Apr. 2016. **Best Paper Award.**

324. A. Tsiami, A. Katsamanis, P. Maragos and A. Vataki, "Towards a Behaviorally-Validated Computational Audiovisual Saliency Model", *Proceedings of 41<sup>st</sup> International Conference on Acoustics, Speech and Signal Processing (ICASSP-2016)*, Shanghai, China, Mar. 2016.
325. X.S. Papageorgiou, G. Chalvatzaki, K.-N. Lianos, C. Werner, K. Hauer, C.S. Tzafestas, P. Maragos, "Experimental Validation of Human Pathological Gait Analysis for an Assisted Living Intelligent Robotic Walker", *Proc. 6th IEEE RAS/EMBS Int'l Conf. on Biomedical Robotics and Biomechanics (BioRob)*, Singapore, June, 2016.
326. G. Chalvatzaki, X.S. Papageorgiou, C. Werner, K. Hauer, C.S. Tzafestas, P. Maragos, "Experimental Comparison of Human Gait Tracking Algorithms: Towards a Context-Aware Mobility Assistance Robotic Walker", *Proc. 24th Mediterranean Conf. on Control and Automation (MED)*, Athens, Greece, June 2016.
327. I. Rodomagoulakis, N. Kardaris, V. Pitsikalis, A. Arvanitakis, P. Maragos, "A Multimedia Gesture Dataset for Human Robot Communication: Acquisition, Tools and Recognition Results", *Proc. IEEE Int'l Conference on Image Processing (ICIP-2016)*, Phoenix, AZ, USA, Sep. 2016.
328. G. Panagiotaropoulou, P. Koutras, A. Katsamanis, P. Maragos, A. Zlatintsi, A. Protopapas, E. Karavasilis, N. Smyrnis, "fMRI-Based Perceptual Validation of A Computational Model For Visual and Auditory Saliency in Videos", *Proc. Int'l Conf. Image Processing (ICIP-2016)*, Phoenix, AZ, USA, Sep. 2016.
329. N. Kardaris, V. Pitsikalis, E. Mavroudi, and P. Maragos, "Introducing Temporal Order of Dominant Visual Word Sub-Sequences for Human Action Recognition", *Proc. IEEE Int'l. Conf. on Image Processing (ICIP-2016)*, Phoenix, Arizona, USA, Sep. 2016.
330. C.G. Bampis, P. Maragos, A.C. Bovik, "Projective Non-Negative Matrix Factorization for Unsupervised Graph Clustering", *Proc. IEEE Int'l Conf. on Image Processing (ICIP-2016)*, Phoenix, AZ, USA, Sep. 2016.
331. P. Giannoulis, G. Potamianos, P. Maragos, and A. Katsamanis, "Improved dictionary selection and detection schemes in sparse-CNMF-based overlapping acoustic event detection", *Proc. Detection and Classification of Acoustic Scenes and Events 2016 Workshop (DCASE-2016)*, pp. 25-29, Budapest, Hungary, Sept. 2016.
332. A. Guler, N. Kardaris, S. Chandra, V. Pitsikalis, C. Werner, K. Hauer, C. Tzafestas, P. Maragos, I. Kokkinos, "Human Joint Angle Estimation and Gesture Recognition for Assistive Robotic Vision, *Workshop on Assistive Computer Vision and Robotics*", *European Conference on Computer Vision*, Amsterdam, The Netherlands, Oct. 2016.
333. N. Kardaris, I. Rodomagoulakis, V. Pitsikalis, A. Arvanitakis and P. Maragos, "A platform for building new human-computer interface systems that support online automatic recognition of audio-gestural commands", *Proc. ACM Multimedia Conference 2016*, Amsterdam, The Netherlands, Oct. 2016.
334. A. Zlatintsi, I. Rodomagoulakis, V. Pitsikalis, P. Koutras, N. Kardaris, X. Papageorgiou, C. Tzafestas and P. Maragos, "Social Human-Robot Interaction for the Elderly: Two Real-life Use Cases", *Proc. ACM/IEEE Int'l Conf. on Human-Robot Interaction (HRI-2017)*, Vienna, Austria, March 2017.
335. V. Charisopoulos and P. Maragos, "Morphological Perceptrons: Geometry and Training Algorithms", *Proc. Int'l Symposium on Mathematical Morphology (ISMM-2017)*, Fontainebleau, France, May 2017.
336. X. S. Papageorgiou, G. Chalvatzaki, A. C. Dometios, C. S. Tzafestas, and P. Maragos, "Intelligent Assistive Robotic Systems for the elderly: Two real-life use cases", *Proc. Workshop of the 10th International Conference on Pervasive Technologies Related to Assistive Environments, "Assistive Robots: Technological Challenges and the User Perspective"*, Rhodes, Greece, June 2017.
337. G. Chalvatzaki, X. S. Papageorgiou, C. S. Tzafestas, and P. Maragos, "Comparative Experimental Validation of Human Gait Tracking Algorithms for an Intelligent Robotic Rollator", *Proc. IEEE Int'l Conf. Robotics & Automation (ICRA-2017)*, Singapore, June 2017.
338. G. Chalvatzaki, X. Papageorgiou, C. Tzafestas, and P. Maragos, "Estimating Double Support in Pathological Gaits using an HMM-based Analyzer for an Intelligent Robotic Walker", *Proc. 26th IEEE Int'l Symposium on Robot and Human Interactive Communication (ROMAN-2017)*, Lisbon, Portugal, Aug. 2017.
339. I. Rodomagoulakis and P. Maragos, "On the Improvement of Modulation Features Using Multi-Microphone Energy Tracking for Robust Distant Speech Recognition", *Proc. 25th European Signal Processing Conference (EUSIPCO-2017)*, Kos, Greece, Aug. 2017.

340. P. Filntisis, A. Katsamanis and P. Maragos, "Photorealistic Adaptation and Interpolation of Facial Expressions Using HMMS and AAMS for Audio Visual Speech Synthesis", *Proc. IEEE Int'l Conf. Image Processing (ICIP-2017)*, Beijing, China, Sep. 2017.
341. A. Dometios, X. Papageorgiou, A. Arvanitakis, C. Tzafestas, and P. Maragos, "Real-Time End-Effector Motion Behavior Planning Approach Using On-line Point-Cloud Data Towards a User Adaptive Assistive Bath Robot", *Proc. IEEE/RSJ Int'l Conference on Intelligent Robots and Systems (IROS-2017)*, Vancouver, BC, Canada, Sep. 2017.
342. G. Chalvatzaki, X. Papageorgiou, C. Tzafestas, and P. Maragos, "HMM-based Pathological Gait Analyzer for a User-Adaptive Intelligent Robotic Walker", *Proc. of EUSIPCO-2017 Workshop: "MultiLearn 2017 - Multimodal processing, modeling and learning for human-computer/robot interaction applications"*, Kos, Greece, Sep. 2017.
343. A. Dometios, A. Tsiami, A. Arvanitakis, P. Giannoulis, X. Papageorgiou, C. Tzafestas, and P. Maragos, "Integrated Speech-based Perception System for User Adaptive Robot Motion Planning in Assistive Bath Scenarios", *Proc. of EUSIPCO-2017 Workshop: "MultiLearn 2017 - Multimodal processing, modeling and learning for human-computer/robot interaction applications"*, Kos, Greece, Sep. 2017.
344. P. Giannoulis, G. Potamianos, and P. Maragos, "On the joint use of NMF and classification for overlapping acoustic event detection," *Proc. Int. Works. on Computational Intelligence for Multimedia Understanding (IWCIM), held in conjunction with EUSIPCO-2017*, Kos, Greece, 2017. Also in *Proceedings*, MDPI, vol.2, no.90, Jan. 2018, doi:10.3390/proceedings2020090.
345. A. Zlatintsi, I. Rodomagoulakis, P. Koutras, A. C. Dometios, V. Pitsikalis, C. S. Tzafestas, and P. Maragos, "Multimodal Signal Processing and Learning Aspects of Human-Robot Interaction for an Assistive Bathing Robot", *Proc. 43rd IEEE Int. Conf. on Acoustics, Speech and Signal Processing (ICASSP-2018)*, Calgary, Canada, Apr. 2018.
346. A. Tsiami, P. P. Filntisis, N. Efthymiou, P. Koutras, G. Potamianos, and P. Maragos, "Far-Field Audio-Visual Scene Perception Of Multi-Party Human-Robot Interaction for Children and Adults", *Proc. 43rd IEEE Int. Conf. on Acoustics, Speech and Signal Processing (ICASSP-2018)*, Calgary, Canada, Apr. 2018.
347. I.K. Douros, A. Katsamanis and P. Maragos, "Multi-View Audio-Articulatory Features For Phonetic Recognition On RTMRI-TIMIT Database", *Proc. 43rd IEEE Int. Conf. on Acoustics, Speech and Signal Processing (ICASSP-2018)*, Calgary, Canada, Apr. 2018.
348. A. Tsiami, P. Koutras, N. Efthymiou, P. P. Filntisis, G. Potamianos, and P. Maragos, "Multi3: Multi-sensory Perception System for Multi-modal Child Interaction with Multiple Robots", *Proc. IEEE Int'l Conference on Robotics and Automation (ICRA-2018)*, Brisbane, Australia, May 2018.
349. G. Chalvatzaki, X. S. Papageorgiou, C. S. Tzafestas, and P. Maragos, "Augmented Human State Estimation using Interacting Multiple Model Particle Filters with Probabilistic Data Association", *Proc. IEEE Int'l Conference on Robotics and Automation (ICRA-2018)*, Brisbane, Australia, May 2018.
350. P. Koutras, A. Zlatintsi and P. Maragos, "Exploring CNN-based architectures for Multimodal Salient Event Detection in Videos", *Proc. 13th IEEE Image, Video, and Multidimensional Signal Processing (IVMSP) Workshop*, Zagori, Greece, June 2018.
351. G. Bouritsas, P. Koutras, A. Zlatintsi and P. Maragos, "Multimodal Visual Concept Learning with Weakly Supervised Techniques", *Proc. IEEE Conference on Computer Vision and Pattern Recognition (CVPR-2018)*, Salt Lake City, Utah, USA, June 2018.
352. P. Koutras, G. Panagiotaropoulou, A. Tsiami and P. Maragos, "Audio-Visual Temporal Saliency Modeling Validated by fMRI Data", *Proc. 2018 IEEE Conference on Computer Vision and Pattern Recognition Workshops (CVPRW), Workshop: Mutual benefits of cognitive and computer vision*, Salt Lake City, Utah, USA, June 2018.
353. E. Theodosis and P. Maragos, "Analysis of the Viterbi Algorithm Using Tropical Algebra and Geometry", *Proc. 19th IEEE International Workshop on Signal Processing Advances in Wireless Communications (SPAWC-2018)*, Kalamata, Greece, June 2018.
354. C. Garoufis, A. Zlatintsi and P. Maragos, "A Collaborative System for Composing Music via Motion Using a Kinect Sensor and Skeletal Data", *Proc. 15th International Sound & Music Computing Conference (SMC-2018)*, Limmesol, Cyprus, July 2018.
355. A. Zlatintsi, C. Garoufis, A. Tsiami, K. Kritsis, M.A. Kaliakatsos-Papakostas, A. Gkiokas, V. Katsouros, and P. Maragos, "A Web-based Real-Time Kinect Application for Gestural Interaction with Virtual Musical Instruments", *Proc. of Audio Mostly Conference (AM'2018)*, Wrexham, North Wales, UK, Sep. 2018.

356. J. Hadfield, P. Koutras, N. Efthymiou, G. Potamianos, C.S. Tzafestas, P. Maragos, “Object Assembly Guidance in Child-Robot Interaction using RGB-D based 3D Tracking”, *Proc. 2018 IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS-2018)*, Madrid, Spain, Oct. 2018.
357. N. Efthymiou, P. Koutras, P.P. Filntisis, G. Potamianos, P. Maragos, “Multi-View Fusion for Action Recognition in Child-Robot Interaction”, *Proc. IEEE Int'l Conf. Image Processing (ICIP-2018)*, Athens, Greece, Oct. 2018.
358. G. Chalvatzaki, P. Koutras, J. Hadfield, X. S. Papageorgiou, C. S. Tzafestas, and P. Maragos, “LSTM-based Network for Human Gait Stability Prediction in an Intelligent Robotic Rollator”, *Proc. IEEE Int'l Conference on Robotics and Automation (ICRA-2019)*, Montreal, Canada, May 2019.
359. E. Theodosis and P. Maragos, “Tropical Modeling of Weighted Transducer Algorithms on Graphs”, *Proc. 44th IEEE Int'l Conf. on Acoustics, Speech and Signal Processing (ICASSP-2019)*, Brighton, UK, May 2019.
360. G. Chalvatzaki, P. Koutras, J. Hadfield, X. S. Papageorgiou, C. S. Tzafestas and P. Maragos, “LSTM-based Network for Human Gait Stability Prediction in an Intelligent Robotic Rollator”, *Proc. 2019 IEEE Int'l Conference on Robotics and Automation (ICRA)*, Montreal, Canada, May 2019.
361. G. Chalvatzaki, X. S. Papageorgiou, P. Maragos, C. S. Tzafestas, “Comparing the Impact of Robotic Rollator Control Schemes on Elderly Gait using on-line LRF-based Gait Analysis”, *Proc. Workshop on Mobile Robot Assistants for the Elderly (MoRobAE) in 2019 IEEE Int'l Conference on Robotics and Automation (ICRA)*, Montreal, Canada, May 2019.
362. X. S. Papageorgiou, G. Chalvatzaki, E. Efthymiou, S.-E. Fotinea, A. Karavasili, C. Tzafestas, P. Maragos, A. Vacalopoulou and T. Goulas, “User Centered HRI Design for an Intelligent Robotic Rollator”, *Proc. Workshop on Mobile Robot Assistants for the Elderly (MoRobAE) in 2019 IEEE Int'l Conference on Robotics and Automation (ICRA)*, Montreal, Canada, May 2019.
363. P. Koutras and P. Maragos, “SUSiNet: See, Understand and Summarize It”, *Proc. IEEE Conf. on Computer Vision and Pattern Recognition Workshops (CVPRW)*, Long Beach, CA, USA, June 2019.
364. N. Gkanatsios, V. Pitsikalis, P. Koutras, A. Zlatintsi and P. Maragos, “Deeply Supervised Multimodal Attentional Translation Embeddings For Visual Relationship Detection”, *Proc. IEEE Int'l Conf. Image Processing (ICIP-2019)*, Taipei, Taiwan, Sep. 2019.
365. P. Maragos, “Tropical Geometry, Mathematical Morphology and Weighted Lattices”, *Proc. 14<sup>th</sup> Int'l Symposium on Mathematical Morphology (ISMM-2019)*, Saarbruecken, Germany, July 2019. Springer LNCS 11564, pp. 3–15, 2019. [https://doi.org/10.1007/978-3-030-20867-7\\_1](https://doi.org/10.1007/978-3-030-20867-7_1)
366. C. Garoufis, A. Zlatintsi, K. Kritsis, P.P. Filntisis, V. Katsouros and P. Maragos, “An Environment for Gestural Interaction with 3D Virtual Musical Instruments as an Educational Tool”, *Proc. 27<sup>th</sup> European Signal Processing Conf. (EUSIPCO-2019)*, A Coruna, Spain, Sep. 2019.
367. G. Retsinas, A. Elafrou, G. Goumas and P. Maragos, “RecNets: Channel-wise Recurrent Convolutional Neural Nets”, *Proceedings 30<sup>th</sup> British Machine Vision Conference (BMVC-2019)*, Cardiff, UK, Sep. 2019.
368. J. Hadfield, G. Chalvatzaki, P. Koutras, M. Khamassi, C. S. Tzafestas and P. Maragos, “A Deep Learning Approach for Multi-View Engagement Estimation of Children in a Child-Robot Joint Attention Task”, *Proc. 2019 IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS)*, Macau, China, Nov. 2019.
369. G. Chalvatzaki, X. S. Papageorgiou, P. Maragos and C. S. Tzafestas, “Learn to adapt to human walking: A Model-based Reinforcement Learning Approach for a Robotic Assistant Rollator”, *Proc. 2019 IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS)*, Macau, China, Nov. 2019.
370. P. P. Filntisis, N. Efthymiou, P. Koutras, G. Potamianos and P. Maragos, “Fusing Body Posture with Facial Expressions for Joint Recognition of Affect in Child-Robot Interaction”, *Proc. 2019 IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS)*, Macau, China, Nov. 2019.
371. P. Maragos and E. Theodosis, “Multivariate Tropical Regression and Piecewise-Linear Surface Fitting”, *Proc. 45th IEEE Int'l Conf. on Acoustics, Speech and Signal Processing (ICASSP-2020)*, Barcelona, May 2020.
372. C. Garoufis, A. Zlatintsi and P. Maragos, “An LSTM-based Dynamic Chord Progression Generation System for Interactive Music Performance”, *Proc. 45th IEEE Int'l Conf. on Acoustics, Speech and Signal Processing (ICASSP-2020)*, Barcelona, May 2020.

373. G. Retsinas, P.P. Filntisis, N. Efthymiou, E. Theodosis, A. Zlatintsi and P. Maragos, "Person Identification Using Deep Convolutional Neural Networks On Short-term Signals From Wearable Sensors", *Proc. 45th IEEE Int'l Conf. on Acoustics, Speech and Signal Processing (ICASSP-2020)*, Barcelona, May 2020.
374. G. Smyrnis, P. Maragos and G. Retsinas, "MaxPolynomial Division With Application to Neural Network Simplification", *Proc. 45th IEEE Int'l Conf. on Acoustics, Speech and Signal Processing (ICASSP-2020)*, Barcelona, May 2020.
375. I. Maglogiannis, A. Zlatintsi, A. Menychtas, D. Papadimitos, P.P. Filntisis, N. Efthymiou, G. Retsinas, P. Tsanakas, and P. Maragos, "An intelligent cloud-based platform for effective monitoring of patients with psychotic disorders", *Proc. Int'l Conf. on Artificial Intelligence Applications and Innovation (AIAI-2020)*, Halkidiki, Greece, 5-7 June, 2020.
376. G. Potamianos, K. Papadimitriou, E. Efthymiou, S-E Fotinea, G. Sapountzaki and P. Maragos, "SL-ReDu: Greek Sign Language Recognition for Educational Applications. Project Description and Early Results", *Proc. Pervasive Technologies Related to Assistive Environments Conference (PETRA-2020)*, Corfu, Greece, June 2020.
377. A. Tsiami, P. Koutras and P. Maragos, "STAViS: Spatio-Temporal AudioVisual Saliency Network", *Proc. 2020 IEEE Conference on Computer Vision and Pattern Recognition (CVPR)*, Seattle, USA, June 2020.
378. G. Smyrnis and P. Maragos, "Multiclass Neural Network Minimization Via Tropical Newton Polytope Approximation", *Proc. 37th Int'l Conf. on Machine Learning (ICML-2020)*, July 2020.
379. G. Chalvatzaki, P. Koutras, A. Tsiami, C. S. Tzafestas and P. Maragos, "i-Walk Intelligent Assessment System: Activity, Mobility, Intention, Communication", *Proc. 16th European Computer Vision Conference Workshops (ECCVW) – 8th Int'l Workshop on Assistive Computer Vision and Robotics (ACVR-2020)*, Aug. 2020.
380. I. Maroukias, P. Koutras, N. Kardaris, G. Retsinas, G. Chalvatzaki and P. Maragos, "How to track your dragon: A Multi-Attentional Framework for Real-time RGB-D 6-DOF Object Pose Tracking", *Proc. 16th European Computer Vision Conference Workshops (ECCVW) – 6th Int'l Workshop on Recovering 6D Object Pose*, Aug. 2020.
381. M. Parelli, K. Papadimitriou, G. Potamianos, G. Pavlakos and P. Maragos, "Exploiting 3D Hand Pose Estimation in Deep Learning-based Sign Language Recognition from RGB Videos", *Proc. 16th European Computer Vision Conference Workshops (ECCVW) – Workshop on Sign Language Recognition, Translation and Production (SLRTP 2020)*, Aug. 2020.
382. P.-P. Filntisis, N. Efthymiou, G. Potamianos, and P. Maragos, "Emotion Understanding in Videos Through Body, Context, and Visual-Semantic Embedding Loss", *Proc. 16th European Computer Vision Conference Workshops (ECCVW) - Workshop on Bodily Expressed Emotion Understanding (BEEU)*, Aug. 2020.  
**ECCVW-2020 Data Modeling Challenge Winner Award.**
383. N. Gkanatsios, V. Pitsikalis and P. Maragos, "From Saturation to Zero-Shot Visual Relationship Detection Using Local Context", *Proc. 31st British Machine Vision Conference (BMVC-2020)*, Sep. 2020.
384. V. Tassopoulou, G. Retsinas and P. Maragos, "Enhancing Handwritten Text Recognition with N-gram sequence decomposition and Multitask Learning", *Proc. 25th International Conference Pattern Recognition (ICPR-2020)*, Milan, Italy, Jan. 2021.
385. A. Kratimenos, K. Avramidis, C. Garoufis, A. Zlatintsi and P. Maragos, "Augmentation Methods on Monophonic Audio for Instrument Classification in Polyphonic Music", *Proc. 28th European Signal Processing Conf. (EUSIPCO-2020)*, Amsterdam, The Netherlands, Jan. 2021.
386. D. Anagnostopoulou, N. Efthymiou, C. Papailiou and P. Maragos, "Engagement Estimation During Child Robot Interaction Using Deep Convolutional Networks Focusing on ASD Children", *Proc. 2021 International Conference on Robotics and Automation (ICRA)*, Xi'an, China, June 2021.
387. A. Kratimenos, G. Pavlakos and P. Maragos, "Independent Sign Language Recognition with 3D Body, Hands and Face Reconstruction", *Proc. 46th IEEE Int'l Conf. on Acoustics, Speech and Signal Processing (ICASSP-2021)*, Toronto, Canada, June 2021.
388. N. Tsilivis, A. Tsiamis and P. Maragos, "Sparsity in Max-Plus Algebra and Applications in Multivariate Convex Regression", *Proc. 46th IEEE Int'l Conf. on Acoustics, Speech and Signal Processing (ICASSP-2021)*, Toronto, Canada, June 2021.



389. N. Tsilivis, A. Tsiamis and P. Maragos, "Sparse Approximate Solutions to Max-Plus Equations", In: J. Lindblad et al. (Eds), *Discrete Geometry and Mathematical Morphology: DGMM-2021*, LNCS 12708, Springer, Cham, 2021, pp. 538-550. [https://doi.org/10.1007/978-3-030-76657-3\\_39](https://doi.org/10.1007/978-3-030-76657-3_39)
390. K. Avramidis, A. Kratimenos, C. Garoufis, A. Zlatintsi and P. Maragos, "Deep Convolutional and Recurrent Networks for Polyphonic Instrument Classification from Monophonic Raw Audio Waveforms", *Proc. 46th IEEE Int'l Conf. on Acoustics, Speech and Signal Processing (ICASSP-2021)*, Toronto, Canada, June 2021.
391. N. Dimitriadis and P. Maragos, "Advances in Morphological Neural Networks: Training, Pruning and Enforcing Shape Constraints", *Proc. 46th IEEE Int'l Conf. on Acoustics, Speech and Signal Processing (ICASSP-2021)*, Toronto, Canada, June 2021.
392. C. Garoufis, A. Zlatintsi, P. P. Filntisis, N. Efthymiou, E. Kalisperakis, V. Garyfalli, T. Karantinos, L. Mantonakis, N. Smyrnis and P. Maragos, "An Unsupervised Learning Approach for Detecting Relapses from Spontaneous Speech in Patients with Psychosis", *Proc. IEEE-EMBS International Conference on Biomedical and Health Informatics (BHI-2021)*, July 2021.
393. V. Vasileiou, N. Kardaris and P. Maragos, "Exploring Temporal Context and Human Movement Dynamics for Online Action Detection in Videos", *Proc. 29th European Signal Processing Conference (EUSIPCO 2021)*, Dublin, Ireland, Aug. 2021.
394. P. Filntisis, N. Efthymiou, G. Potamianos, and P. Maragos, "An Audiovisual Child Emotion Recognition System for Child-Robot Interaction Applications", *Proc. 29th European Signal Processing Conference (EUSIPCO 2021)*, Dublin, Ireland, Aug. 2021.
395. C. Garoufis, A. Zlatintsi, and P. Maragos, "HTMD-NET: A Hybrid Masking-Denoising Approach to Time-Domain Monaural Singing Voice Separation", *Proc. 29th European Signal Processing Conference (EUSIPCO 2021)*, Dublin, Ireland, Aug. 2021.
396. K. Avramidis, A. Zlatintsi, C. Garoufis, and P. Maragos, "Multiscale Fractal Analysis on EEG Signals for Music-Induced Emotion Recognition", *Proc. 29th European Signal Processing Conference (EUSIPCO 2021)*, Dublin, Ireland, Aug. 2021.
397. P. Giannoulis, G. Potamianos, and P. Maragos, "Overlapped Sound Event Classification via Multi-Channel Sound Separation Network", *Proc. 29th European Signal Processing Conference (EUSIPCO 2021)*, Dublin, Ireland, Aug. 2021.
398. G. Retsinas, G. Sfikas, C. Nikou, and P. Maragos, "Deformation-Invariant Networks For Handwritten Text Recognition", *Proc. IEEE International Conference on Image Processing (ICIP-2021)*, Sept.2021.
399. G. Retsinas, A. Elafrou, G. Goumas and P. Maragos, "Online Weight Pruning Via Adaptive Sparsity Loss", *Proc. IEEE International Conference on Image Processing (ICIP-2021)*, Sept.2021.
400. G. Bastas, A. Gkiokas, V. Katsouros and P. Maragos, "Deploying Convolutional Networks for Visual Onset Detection in the Context of Bowed String Instrument Performances", *Proc. 2021 IEEE International Conference on Systems, Man, and Cybernetics (SMC)*, Melbourne, Australia, Oct. 2021.
401. M. Diomataris, N. Gkanatsios, V. Pitsikalis and P. Maragos, "Grounding Consistency: Distilling Spatial Common Sense for Precise Visual Relationship Detection", *Proc. International Conference on Computer Vision (ICCV-2021)*, Oct. 2021.
402. P. Antoniadis, I. Pikoulis, P. Filntisis, and P. Maragos, "An audiovisual and contextual approach for categorical and continuous emotion recognition in-the-wild", *Proc. 2021 Int'l Conference on Computer Vision Workshops (ICCVW-2021) - Workshop on Affective Behavior Analysis in-the-wild*, Oct. 2021.
403. G. Retsinas, G. Sfikas, C. Nikou, and P. Maragos, "From Seq2Seq to Handwritten Word Embeddings", *Proc. British Machine Vision Conference (BMVC-2021)*, Nov.2021.
404. P. Antoniadis, P. Filntisis and P. Maragos, "Exploiting Emotional Dependencies with Graph Convolutional Networks for Facial Expression Recognition", *Proc. 16th IEEE International Conference on Automatic Face and Gesture Recognition (FG-2021)*, Dec. 2021.
405. I. Pikoulis, P. Filntisis and P. Maragos, "Leveraging Semantic Scene Characteristics and Multi-Stream Convolutional Architectures in a Contextual Approach for Video-Based Visual Emotion Recognition in the Wild", *Proc. 16th IEEE Int'l Conf. on Automatic Face and Gesture Recognition (FG-2021)*, Dec. 2021.
406. K. Avramidis, C. Garoufis, A. Zlatintsi, and Petros Maragos, "Enhancing Affective Representations of Music-Induced EEG through Multimodal Supervision and Latent Domain Adaptation", *Proc. 47th IEEE Int'l Conf. on Acoustics, Speech and Signal Processing (ICASSP-2022)*, Singapore, China, May 2022.
407. G. Bastas, S. Koutoupis, M. K.-Papakostas, V. Katsouros, and P. Maragos, "A Few-sample Strategy for Guitar Tablature Transcription Based on Inharmonicity Analysis and Playability Constraints", *Proc.*

- 47th IEEE Int'l Conf. on Acoustics, Speech and Signal Processing (ICASSP-2022), Singapore, China, May 2022.
408. M. Parelli, K. Papadimitriou, G. Potamianos, G. Pavlakos, and P. Maragos, "Spatio-Temporal Graph Convolutional Networks for Continuous Sign Language Recognition", *Proc. 47th IEEE Int'l Conf. on Acoustics, Speech and Signal Processing (ICASSP-2022)*, Singapore, China, May 2022.
409. F. Paraperas-Papantoniou, P.P. Filntisis, P. Maragos and A. Roussos, "Neural Emotion Director: Speech-preserving semantic control of facial expressions in "in-the-wild" videos", *Proc. 2022 IEEE/CVF Conference on Computer Vision and Pattern Recognition (CVPR)*, New Orleans, USA, June 2022.  
**CVPR-2022 Best Paper Finalist.**
410. C. O. Tze, P. Filntisis, A. Roussos, and P. Maragos, "Cartoonized Anonymization of Sign Language Videos", *Proc. 14th Image, Video, and Multidimensional Signal Processing Workshop (IVMSP 2022)*, Nafplio, Greece, June 2022.
411. G. Retsinas, P. Filntisis, N. Kardaris, and P. Maragos, "Attribute-based Gesture Recognition: Generalization to Unseen Classes", *Proc. 14th Image, Video, and Multidimensional Signal Processing Workshop (IVMSP 2022)*, Nafplio, Greece, June 2022.
412. P. Papantonakis, C. Garoufis, and P. Maragos, "Multi-Band Masking for Waveform-Based Singing Voice Separation", *Proc. 30th European Signal Processing Conference (EUSIPCO 2022)*, Belgrade, Serbia, Aug. 2022.
413. M. Panagiotou, A. Zlatintsi, P. Filntisis, A.J. Roumeliotis, N. Efthymiou and P. Maragos, "A Comparative Study of Autoencoder Architectures for Mental Health Analysis Using Wearable Sensors Data", *Proc. 30th European Signal Processing Conference (EUSIPCO 2022)*, Belgrade, Serbia, Aug. 2022.
414. C. Garoufis, A. Zlatintsi, P. Filntisis, N. Efthymiou, E. Kalisperakis, T. Karantinos, V. Garyfalli, M. Lazaridi, N. Smyrnis, and P. Maragos, "Towards Unsupervised Subject-Independent Speech-Based Relapse Detection in Patients with Psychosis Using Variational Autoencoders", *Proc. 30th European Signal Processing Conference (EUSIPCO 2022)*, Belgrade, Serbia, Aug. 2022.

## CONFERENCE PRESENTATIONS WITHOUT PROCEEDINGS

- P. Maragos, "Applications of Morphological Image and Signal Analysis", *Annual Research Review Conference of NSF Systems Research Center*, Univ. of Maryland, May 1988.
- P. Maragos, "Mathematical Morphology Applied to Multi-Scale Image Representation and Shape Description", *Morphology Workshop*, Univ. of Alabama, Huntsville, July 1988.
- P. Maragos, "Introduction to Fractals", *ARO Workshop on Fractals and Chaos in Science and Engineering*, Research Triangle Parc, NC, May 1991.
- T. F. Quatieri, J. F. Kaiser, and P. Maragos, "Transient Detection in AM-FM Background using an Energy Operator", *IEEE Underwater Acoustic Signal Processing Workshop*, Univ. of Rhode Island, Oct. 1991.
- A. Potamianos, G. Bouselmi, D. Dimitriadis, D. Fohr, R. Gemello, I. Illina, F. Mana, P. Maragos, M. Matassoni, V. Pitsikalis, J. Ramirez, E. Sanchez-Soto, J. Segura, P. Svaizer, "Towards speaker and environmental robustness in ASR: the HIWIRE project", *Proceedings of SRIV'06 ITRW on Speech Recognition and Intrinsic Variation*, May 2006.
- A. Tsiami, A. Katsamanis, I. Rodomagoulakis, G. Potamianos, and P. Maragos, "Home sweet home... Listen!", *Show and Tell at 41st International Conference on Acoustics, Speech and Signal Processing (ICASSP 2016)*, Shanghai, China, Mar. 2016, to demonstrate.
- "Segmentation and Skeletonization on Arbitrary Graphs Using Multiscale Morphology and Active Contours", [Dagstuhl Seminar 11142 - "Innovations for Shape Analysis: Models and Algorithms"](#), Dagstuhl Schloss, Germany, 06 Apr. 2011.
- "On Shape Recognition and Language", [Dagstuhl Seminar 14072 - "New Perspectives in Shape Analysis"](#), Dagstuhl Schloss, Germany, 13 Feb. 2014.
- "[Discretization of Morphology-type PDEs and Active Contours on Graphs](#)", *SIAM Conference on Imaging Science 2018*, Minisymposium "MS48 - Recent Advances in Mathematical Morphology: Algebraic and PDE-based Approaches", 7 June 2018.
- "Mathematical Morphology, Tropical Geometry and Weighted Lattices", [Dagstuhl Seminar 18422 - "Shape Analysis: Euclidean, Discrete and Algebraic Geometric Methods"](#), Dagstuhl Schloss, Germany, 17 Oct. 2018.

### **PAPERS REPRINTED IN EDITED BOOKS**

1. P. Maragos, R. W. Schafer and R. M. Mersereau, "Two-Dimensional Linear Prediction and Its Application to Adaptive Predictive Coding of Images", IEEE Transactions on Acoustics, Speech, and Signal Processing, vol.32, pp.1213-1229, Dec. 1984. In *Image Compression*, M. Rabbani, Ed., SPIE Optical Engineering Press (Milestone Series), Bellingham, WA, USA.
2. P. Maragos and R. W. Schafer, "Morphological Skeleton Representation and Coding of Binary Images", IEEE Transactions on Acoustics, Speech, and Signal Processing, vol.34, pp.1228-1244, Oct. 1986. In *Selected Papers on Visual Communication: Technology and Applications*, T. R. Hsing and A. G. Tescher, Eds., SPIE Optical Engineering Press (Milestone Series), 1990.
3. P. Maragos, "Tutorial on Advances in Morphological Image Processing and Analysis", Optical Engineering, vol.26, pp.623-632, July 1987. In *Selected Papers on Visual Communication: Technology and Applications*, T. R. Hsing and A. G. Tescher, Eds., SPIE Optical Engineering Press (Milestone Series), 1990.
4. P. Maragos and R. W. Schafer, "Morphological Systems for Multidimensional Signal Processing", Proceedings of IEEE, vol.78, pp.690-710, April 1990. In *Digital Image Processing*, R. Chellapa, Ed., IEEE Computer Society Press, Los Alamitos, CA, USA, 1992.
5. P. Maragos and R. W. Schafer, "Morphological Filters - Part I: Their Set-Theoretic Analysis and Relations to Linear Shift-Invariant Filters", IEEE Transactions on Acoustics, Speech, and Signal Processing, vol.35, pp.1153-1169, Aug. 1987. In *Selected Papers on Morphological Image Processing: Principles and Optoelectronic Implementations*, T. Szoplik, Ed., SPIE Optical Engineering Press (Milestone Series Vol. MS 127), Bellingham, WA, USA, 1996.
6. P. Maragos and R. W. Schafer, "Morphological Filters - Part II: Their Relations to Median, Order-Statistic, and Stack Filters", IEEE Transactions on Acoustics, Speech and Signal Processing, vol.35, pp.1170-1184, Aug. 1987. In *Selected Papers on Morphological Image Processing: Principles and Optoelectronic Implementations*, T. Szoplik, Ed., SPIE Optical Engineering Press (Milestone Series Vol. MS 127), Bellingham, WA, USA, 1996.
7. P. Maragos and R. W. Schafer, "Morphological Systems for Multidimensional Signal Processing", Proceedings IEEE, vol. 78, pp. 690-710, April 1990. In *Selected Papers on Morphological Image Processing: Principles and Optoelectronic Implementations*, T. Szoplik, Ed., SPIE Optical Engineering Press (Milestone Series Vol. MS 127), Bellingham, WA, USA, 1996.
8. P. Maragos and F. K. Sun, "Measuring the Fractal Dimension of Signals: Morphological Covers and Iterative Optimization", IEEE Transactions on Signal Processing, vol.41, no.1, pp.108--121, Jan. 1993. In *Selected Papers on Morphological Image Processing: Principles and Optoelectronic Implementations*, T. Szoplik, Ed., SPIE Optical Engineering Press (Milestone Series Vol. MS 127), Bellingham, WA, USA, 1996.

### **TECHNICAL REPORTS AND OTHER PUBLICATIONS**

1. C.S. Fuh, P. Maragos and L. Vincent, "[Region based approaches to visual motion correspondence](#)", *Technical Report 91- 18*, pp.1-30, Harvard Robotics Laboratory, Nov. 1991 .
2. L. F. C. Pessoa, F. C. L'ucio, A. B. Martin, A. C. Mark, P. Maragos, M. M. Russell, "[Multilayer Perceptrons versus Hidden Markov Models: Comparisons and Applications to Image Analysis and Visual Pattern Recognition](#)", Examination Report, Georgia Institute of Technology, Aug. 1995.
3. J.C. Segura, T. Ehrette, A. Potamianos, D. Fohr, I. Illina, P.A. Breton, V. Clot, R. Gemello, M. Matassoni, P. Maragos, "[The HIWIRE database, a noisy and non-native English speech corpus for cockpit communication](#)", 2007.
4. N. Vasiloglou and P. Maragos, "[Spectrum of Fractal Interpolation Functions](#)", arXiv preprint arXiv:0906.5278, June 2009.
5. I. Kokkinos, R. Deriche, T. Papadopoulo, O. Faugeras and P. Maragos, "[Towards bridging the gap between biological and computational image segmentation](#)", 2007.

6. K. Daniilidis, P. Maragos, N. Paragios, "[Novel Representations, Methods, and Algorithms in Computer Vision](#) (Introduction to a Special Issue)", *International Journal of Computer Vision*, Springer, Volume 103, Issue 2, pp 177-177, 2013.

## **RESEARCH GRANTS**

1. Title: "*Morphological Signal and Image Processing*" (5-year NSF PYI Award)  
Sponsor: National Science Foundation.  
Time/Place: 1987--1992 at Harvard University.  
P. Maragos' participation: Principal Investigator (PI).
2. Title: "*Morphology-based Image Processing VLSI Chip Architecture*"  
Sponsor: Bell Communications Research.  
Time/Place: 1987--1989 at Harvard University.  
P. Maragos' participation: Principal Investigator.
3. Title: "*Shape Analysis and Recognition*"  
Sponsor: Xerox  
Time/Place: 1987--1992 at Harvard University.  
P. Maragos' participation: Principal Investigator.
4. Title: *Computer Equipment Grant*  
Sponsor: Sun Microsystems.  
Time/Place: 1988--1991 at Harvard University.  
P. Maragos' participation: Principal Investigator.
5. Title: "*Motion Analysis in Satellite Imagery*"  
Sponsor: The Analytic Sciences Corporation.  
Time/Place: 1990-91 at Harvard University.  
P. Maragos' participation: Principal Investigator.
6. Title: *Computer Equipment Grant*  
Sponsor: Digital Equipment Corporation.  
Time/Place: 1990-91 at Harvard University.  
P. Maragos' participation: Principal Investigator.
7. Title: "*Nonlinear Speech Modeling with Application to Speaker Identification*"  
Sponsor: MIT Lincoln Laboratory.  
Time/Place: 1991-92 at Harvard University.  
P. Maragos' participation: Principal Investigator.
8. Title: Brown-Harvard-MIT "*Center for Intelligent Systems*"  
Sponsor: Army Research Office.  
Time/Place: 1992-93 at Harvard University.  
P. Maragos' participation: Co-Investigator.
9. Title: "*Nonlinear Systems for Speech Signal Processing*"  
Sponsor: National Science Foundation.  
Time/Place: 1992-93 (Year I) at Harvard University.  
(Years II and III) at Georgia Institute of Technology.  
P. Maragos' participation: Principal Investigator.
10. Title: "*Co-Channel Demodulation and AM--FM Feature Extraction Using Energy Operators and Energy Separation*"  
Sponsor: Center for Research on Applied Signal Processing / U.S.C.  
Time/Place: 1994-95 at Georgia Institute of Technology.  
P. Maragos' participation: Principal Investigator.
11. Title: "*Multidimensional Digital Signal Processing Devices for Information Processing, and Electromagnetic Analysis and Measurement*"  
Sponsor: Joint Services Electronics Program.  
Time/Place: 1996-98 at Georgia Institute of Technology.

P. Maragos' participation: Co-Investigator.

12. Title: *"Morphological Signal Processing: Slope Transforms, Max--Min Dynamics, and Differential Morphology"*  
 Sponsor: National Science Foundation.  
 Time/Place: 1995-98 at Georgia Institute of Technology.  
 P. Maragos' participation: Principal Investigator.
13. Title: *"AKODIFON: Improvement of Phonemic Recognition by Developing and Using Modulation and Fractal Acoustic Features"*  
 Sponsor: GSRT. and European Union (EPIET II - 1998)  
 Time/Place: 1999-2001, National Technical University of Athens.  
 P. Maragos' participation: Scientific Director and Principal Investigator (PI).
14. Title: *"Evaluation of the Biological Quality of Soils with New Computer Vision Techniques"*  
 Sponsor: GSRT. and European Union (IENEΔ - 1999)  
 Time/Place: 2000-2001, Institute of Communication & Computer Systems (ICCS) - NTUA.  
 P. Maragos' participation: Scientific Director of NTUA's team, Project PI and Coordinator.
15. Title: *"Aerodynamic Analysis of Human Vocal Tract with Navier-Stokes Equations and Relations to Speech Production"*  
 Sponsor: ICCS-NTUA (Basic Research Program ARCHIMEDES)  
 Time/Place: 2000-2001, ICCS - NTUA.  
 P. Maragos' participation: Co-Principal Investigator (Co-PI).
16. Title: *"Development of Novel Methods of Digital Processing of Nonstationary Signals for Improving the Accuracy and Resolution of Ultrasound Doppler Spectroscopy in Measuring Blood Flow"*  
 Sponsor: ICCS-NTUA (Basic Research Program ARCHIMEDES)  
 Time/Place: 2000-2001, ICCS-NTUA.  
 P. Maragos' participation: Principal Investigator.
17. Title: *"Integrated System for Control of the Ecologic Quality of Soils"*  
 Sponsor: GSRT and European Union (IENEΔ - 2001)  
 Time/Place: 2002 – 2006, ICCS-NTUA and Aristotle Univ. of Thessaloniki.  
 P. Maragos' participation: PI of NTUA's team.
18. Title: *"COST 277: Nonlinear Speech Processing"*  
 Sponsor: European Union  
 Time: 2002 – 2005.  
 P. Maragos' participation: PI of NTUA's team.
19. Title: *"Synergy Between Image Segmentation and Object Recognition Using Geometrical and Statistical Computer Vision Techniques"*  
 Sponsor: Greek Ministry of Education (Basic Research Program "Hrakteitos")  
 Time/Place: 2003 – 2006, National Technical University of Athens  
 P. Maragos' participation: Scientific Director and PI.
20. Title: *"MUSCLE: Multimedia Understanding, Semantics, Computation and Learning"*  
 Sponsor: European Union FP6: Network of Excellence,  
 Time/Place: 2004 – 2008, Institute of Communication & Computer Systems (ICCS) - NTUA  
 P. Maragos' participation: Scientific Director and PI of ICCS-NTUA's Team and WP Leader.
21. Title: *"HIWIRE: Human Input That Works In Real Environments"*  
 Sponsor: European Union FP6: Specific Targeted Research-Innovation Project (STREP),  
 Time/Place: 2004 – 2007, ICCS - NTUA  
 P. Maragos' participation: Scientific Director and PI of ICCS-NTUA's Team.
22. Title: *"Advanced Optical Imaging and Computer Vision Methods With Applications to Cancer Diagnosis"*  
 Sponsor: Greek Ministry of Education (Basic Research Program "Pythagoras")  
 Time/Place: 2004 – 2007, National Technical University of Athens  
 P. Maragos' participation: Co-PI
23. Title: *"Nonlinear Systems for Analysis of Microstructures in Speech and Image Signals"*

Sponsor: NTUA Basic Research Program “Protagoras”  
 Time/Place: 2004 – 2007, National Technical University of Athens  
 P. Maragos' participation: Scientific Director and PI.

- 24.** Title: *"ASPI: Audiovisual to Articulatory Speech Inversion"*  
 Sponsor: European Union FP6: Future and Emergent Technologies (FET Open),  
 Time/Place: 2005 – 2008, ICCS - NTUA  
 P. Maragos' participation: Scientific Director and PI of ICCS-NTUA's Team, and WP Leader.
- 25.** Title: *"Computer Vision and Virtual Reality for Three-Dimensional Reconstruction of Archeological Findings with Applications to Wall Paintings and Buildings of the Prehistoric Settlement of Akrotiri in Santorini"*  
 Sponsor: Gen. Secretariat for Research and Technology and European Union (ΠΕΝΕΔ-2003)  
 Time/Place: 2005-2009, National Technical University of Athens.  
 P. Maragos' participation: Scientific Director of NTUA's team, Project PI and Coordinator.
- 26.** Title: *"Speech Modeling, Recognition and Synthesis with Computational Aerodynamic Analysis of Human Vocal Tract"*  
 Sponsor: Gen. Secretariat for Research and Technology and European Union (ΠΕΝΕΔ-2003)  
 Time/Place: 2005-2009, NTUA and Technical University of Crete.  
 P. Maragos' participation: Co-PI and Scientific Director of NTUA's team.
- 27.** Title: *"Novel Signal and Image Analysis Methods for Space Satellite Data Transmission and Processing"*  
 Sponsor: GSRT and European Union (ΠΕΝΕΔ - 2003)  
 Time/Place: 2006-2009, NTUA and National Observatory of Athens.  
 P. Maragos' participation: Co-PI and Scientific Director of NTUA's team.
- 28.** Title: *"DIANOEMA: Visual Gesture Analysis and Recognition for Sign Language Modeling and Application to Robot Teleoperation"*  
 Sponsor: Greek General Secretariat for Research and Technology  
 Time/Place: 2006-2008, ICCS - NTUA.  
 P. Maragos' participation: Project PI and Coordinator, Scientific Director of ICCS-NTUA's team.
- 29.** Title: *"GridNews: Distributed GRID Platform for Advanced Content Management and Retrieval in Audiovisual Broadcast News"*  
 Sponsor: Greek General Secretariat for Research and Technology  
 Time/Place: 2006-2008, ICCS - NTUA.  
 P. Maragos' participation: Co-Principal Investigator.
- 30.** Title: *"Dicta-Sign: Sign Language Recognition, Generation and Modeling with Application in Deaf Communication"* (<http://www.dictasign.eu/>)  
 Sponsor: European Union FP7: Specific Targeted Research-Innovation Project (STREP),  
 Time/Place: 2009 – 2012, National Technical University of Athens  
 P. Maragos' participation: Scientific Director and PI of NTUA's Team, and WP Leader.
- 31.** Title: *"TIMELY: Time In MEntal activiTY: theoretical, behavioral, bioimaging and clinical perspectives"*,  
 Sponsor: ESF-Cost Action (European Network)  
 Time: 2010 – present.  
 P. Maragos' participation: PI of NTUA's Team.
- 32.** Title: *"Music Signal Processing and Applications in Recognition"*  
 Sponsor: Greek Ministry of Education (Basic Research Program “Hrakteitos II”)  
 Time/Place: 2010 – 2013, National Technical University of Athens  
 P. Maragos' participation: Scientific Director and PI.
- 33.** Title: *"DIRHA: Distant-Speech Interaction for Robust Home Applications"* (<http://dirha.fbk.eu/>)  
 Sponsor: European Union FP7: Specific Targeted Research-Innovation Project (STREP)  
 Time/Place: 2012 – 2014, Athena Research and Innovation Center- Image Analysis & Modeling Unit.  
 P. Maragos' participation: Scientific Director and PI of Athena RC - IAMU's team, and WP Leader.

34. “**COGNIMUSE**: Multimodal Signal and Event Processing In Perception and Cognition”  
( <http://cognimuse.cs.ntua.gr/> )  
Sponsor: Greek Ministry of Education and Ministry of Development (Basic Research Program “ARISTEIA”)  
Time/Place: 2012 – 2015, National Technical University of Athens  
P. Maragos' participation: Scientific Director and Principal Investigator.
35. Title: “**MOBOT**: Intelligent Active MObility Assistance RoBOT integrating Multimodal Sensory Processing, Proactive Autonomy and Adaptive Interaction” ( <http://www.mobot-project.eu/> )  
Sponsor: European Union FP7: Specific Targeted Research-Innovation Project (STREP),  
Time/Place: 2013 – 2016, ICCS - NTUA  
P. Maragos' participation: Scientific Director and PI of ICCS-NTUA’s Team, and WP Leader.
36. Title: “**I-SUPPORT**” ( <http://www.i-support-project.eu/> )  
Sponsor: European Union Horizon 2020,  
Time/Place: 2015 – 2018, ICCS - NTUA  
P. Maragos' participation: Co-PI of ICCS-NTUA’s Team.
37. Title: “**BabyRobot**: Child-Robot Communication and Collaboration” ( <http://babyrobot.eu/> )  
Sponsor: European Union Horizon 2020 (Research and Innovation Action)  
Time/Place: 2016 – 2018, “Athena” Research Center - Information Analysis & Modeling Unit.  
P. Maragos' participation: Scientific Director and PI of Athena RC – RPI Unit’s team.
38. Title: “**iMuSciCA**: Interactive Music Science Collaborative Activities”  
Sponsor: European Union Horizon 2020  
Time/Place: 2017 – 2019, Athena Research Center -- Robot Perception & Interaction Unit.  
P. Maragos' participation: Co-PI of Athena RC team.
39. Title: “**i-Walk**: Intelligent Robotic Walker for mobility and cognitive assistance of elderly and motor-impaired people”  
Sponsor: Greek national funds through the Operational Program Competitiveness, Entrepreneurship and Innovation under the call RESEARCH – CREATE – INNOVATE  
Time/Place: 2018 – 2021, ICCS - NTUA.  
P. Maragos' participation: Scientific Director and Principal Investigator.
40. Title: “**e-Prevention**: Prevention in Patients with Psychotic Disorders using Long Term Recording and Analysis of Biometric Indexes”  
Sponsor: Greek national funds through the Operational Program Competitiveness, Entrepreneurship and Innovation under the call RESEARCH – CREATE – INNOVATE  
Time/Place: 2018 – 2021, NTUA.  
P. Maragos' participation: Scientific Director and Principal Investigator.
41. Title: “**TeachBot**: Intelligent Child-Robot Interaction System for designing and implementing edutainment scenarios with emphasis on visual information”  
Sponsor: European Union (European Social Fund- ESF) and Greek national funds through the Operational Programme «Human Resources Development, Education and Lifelong Learning 2014 2020.  
Time/Place: 2020 – 2021, NTUA.  
P. Maragos' participation: Scientific Director and Principal Investigator.
42. Title: “**SoftGrip**: Functionalised Soft robotic gripper for delicate produce harvesting powered by imitation learning based control”  
Sponsor: European Union Horizon 2020,  
Time/Place: 2021 – 2023, ICCS - NTUA  
P. Maragos' participation: Co-PI of ICCS-NTUA’s Team

- 43.** Title: “*EASIER: intElligent Automatic SIgn language tRanslation*”  
 Sponsor: European Union Horizon 2020  
 Time/Place: 2021 – 2023, Athena Research Center -- Robot Perception & Interaction Unit.  
 P. Maragos' participation: Co-PI of Athena RC team.
- 44.** Title: “*TROGEMAL-Tropical Geometry and Machine Learning*”  
 Sponsor: Hellenic Foundation for Research and Innovation  
 Time/Place: 2021 – 2024, NTUA.  
 P. Maragos' participation: Scientific Director and Principal Investigator.
- 45.** Title: “*ENORASI: Integrated Robotic System for Autonomous Inspection and Fault Diagnosis of Electric Power Substations*”  
 Sponsor: Greece 2.0 National Recovery and Resilience Plan, Next Generation EU  
 Time/Place: 2022 – 2024, ICCS - NTUA.  
 P. Maragos' participation: Co-PI of ICCS-NTUA's Team.
- 46.** Title: “*PILLAR-Robots: Purposeful Intrinsically motivated Lifelong Learning Autonomous Robots*”  
 Sponsor: Horizon Europe  
 Time/Place: 2022 – 2025, Athena Research Center -- Robot Perception & Interaction Unit.  
 P. Maragos' participation: Scientific Director and PI of Athena RC – RPI Unit's team.

## **V. TEACHING EXPERIENCE**

### ***COURSES TAUGHT***

- 1. Harvard University, Division of Applied Sciences**
  - *Applied Algebra and Combinatorics*, (Undergraduate), 1985, 86, 87.
  - *Computer Vision*, (Graduate), 1988 (co-instructor).
  - *Computer Speech Generation and Recognition*, (Graduate/Undergrad.), 1987,8,9,90,91.
  - *Signals and Systems*, (Undergraduate), Spring 1988, 89, 90, 91, 92, 93.
  - *Physical and Biological Models of Computation*, (Graduate), 1989-90 (co-instructor).
- 2. Georgia Institute of Technology, School of Electrical & Computer Engineering**
  - *Circuits, Signals, and Systems II*, (Undergraduate), Fall 1993.
  - *Morphological Signal Processing: Image Analysis and Nonlinear Filtering*, (Graduate), 1994, 1995.
  - *Random Signals and Noise*, (Undergraduate), Spring & Fall 1994.
  - *Signals and Systems I*, (Undergraduate), Spring 1995.
- 3. National Technical University of Athens, School of ECE**
  - *Topics in Image Analysis and Computer Vision*, (Graduate), 1992.
  - *Network Theory*, (Undergraduate), 1998, 1999, 2000.
  - *Introduction to Automatic Control Systems*, (Undergraduate), 2005 (co-instructor).
  - *Signals and Systems*, (Undergraduate), 2001 - present.



- *Digital Signal Processing*, (Undergraduate), 1995 - 1996, 2008 - 2021. (Graduate: 1999 - 2001)
- *Computer Vision*, (Undergraduate/Graduate), 1999-present.
- *Pattern Recognition with emphasis to Speech Recognition*, (Undergraduate/Graduate) 2001-2013.
- *Pattern Recognition*, (Undergraduate/Graduate) 2017-present (co-instructor).
- *Robotics: Analysis and Control*, (Undergraduate), 2015-2016.
- *Nonlinear Systems: Chaos, Fractals*, (Graduate), 1995, 1998-2005, 2018.
- *Theoretical Methods in Computer Vision and Signal Processing*, (Graduate) 2006 – present.
- *Machine Learning*, (Undergraduate), 2022 – present (co-instructor).

#### 4. University of Pennsylvania, Dept. Computer and Information Science

- *Advanced Topics in Machine Perception*, (Graduate), Fall 2016.

#### 5. Short Courses/Tutorials at International Conferences

- SIAM "*Short Course on Computer Vision*", SIAM Conference, Boston, 1986 (co-instructor).
- Invited IEEE Tutorial Course on "*Morphological Signal Processing: Image Analysis and Nonlinear Filtering*", given at the 1991 IEEE Int'l Conference on Acoustics, Speech and Signal Processing (ICASSP), Toronto, Canada, May 1991.
- "*Morphological Image Processing*", OPTCON'92, Boston, MA, Nov. 1992.
- "*Mathematical Morphology and its Applications to Signal Processing*", ISMM-1993, Barcelona, Spain, May 1993 (co-instructor).
- Invited IEEE Tutorial Course on "*Introduction to the Theory and Applications of Mathematical Morphology*", given at the 1997 IEEE Int'l Conference on Acoustics, Speech and Signal Processing (ICASSP 1997), Munich, Germany, April 1997 (co-instructor).
- Invited IEEE Tutorial Course on "*Multimodal Signal Processing, Saliency and Summarization*", given at the 2017 IEEE Int'l Conference on Acoustics, Speech and Signal Processing (ICASSP 2017), New Orleans, USA, March 2017 (co-instructor).
- Invited ISCA Tutorial Course on "*Multimodal Speech & Audio Processing in Audio-Visual Human-Robot Interaction*", at the 2018 INTERSPEECH Conference, Hyderabad, India, Sep. 2018 (co-instructor).
- Invited IEEE Tutorial Course on "*Multisensory Video Processing and Learning for Human-Robot Interaction*", given at the 2019 IEEE Int'l Conference on Image Processing (ICIP 2019), Taipei, Taiwan, Sep. 2019 (co-instructor).
- Invited IEEE Tutorial Course on "*Introduction to Tropical Geometry and Its Applications to Machine Learning*", to be presented at the 2022 IEEE 14<sup>th</sup> Image, Video, and Multidimensional Signal Processing Workshop (IVMSP 2022), Nafplio, Greece, June 2022.
- Invited IEEE Tutorial Course on "*Tropical Geometry and Machine Learning*", to be presented at the 2022 IEEE 29<sup>th</sup> Int'l Conference on Image Processing (ICIP 2022), Bordeaux, France, Oct. 2022.

#### Organization of New University Courses

- "Computer Speech Generation and Recognition", Harvard University, 1987.
- "Physical and Biological Models of Computation", Harvard University, 1989.
- "Topics in Image Analysis and Computer Vision", Nat. Tech. Univ. Athens, 1992.
- "Morphological Signal Processing: Image Analysis and Nonlinear Filtering", Georgia Tech, 1994.
- "Non-linear Systems: Chaos, Fractals", Nat. Tech. Univ. Athens, 1998.
- "Computer Vision", Nat'l Tech. Univ. Athens, 1999.

- "Pattern Recognition & Speech Recognition", Nat'l Tech. Univ. Athens, 2001.
- "Theoretical Methods in Computer Vision and Signal Processing", Nat'l Tech. Univ. Athens, 2004.
- "Advanced Topics in Machine Perception", University of Pennsylvania, 2016.
- "Machine Learning", Nat'l Tech. Univ. Athens, 2022.

## **VI. STUDENT and PostDoc RESEARCH SUPERVISION**

### **Ph.D. Students Graduated**

1. C.-S. Fuh, "Visual Motion Analysis: Estimating and Interpreting Displacement Fields", Ph.D. Thesis, Harvard University, 1992.
2. P.-F. Yang, "Morphological Systems for Character Image Processing and Recognition", Ph.D. Thesis, Harvard University, 1993.
3. M. Kim, "A Morphological Approach to Learning", PhD Thesis, Harvard University, 1993.
4. A. Potamianos, "Speech Processing Applications using an AM-FM Modulation Model", Ph.D. Thesis, Harvard University, 1995.
5. L. Pessoa, "Nonlinear Systems and Neural Networks with Hybrid Morphological/Rank/Linear Nodes: Optimal Design and Applications to Image Processing and Pattern Recognition", PhD Thesis, Georgia Institute of Technology, Atlanta, 1997.
6. B. Santhanam, "Multicomponent AM-FM Energy Demodulation with Applications to Signal Processing and Communications", Ph.D. Thesis, Georgia Institute of Technology, Atlanta, 1998.
7. M. A. Butt, "Continuous and Discrete Approaches to Morphological Image Analysis with Applications: PDEs, Curve Evolution, and Distance Transforms", Ph.D. Thesis, Georgia Inst. Technology, Atlanta, 1999.
8. D. Dimitriadis, "Nonlinear Speech Processing, Modulation Models, and Application to Speech Recognition", Ph.D. Thesis, National Technical University of Athens, 2005.
9. I. Kokkinos, "Synergy Between Image Segmentation and Object Recognition Using Geometrical and Statistical Computer Vision Techniques", Ph.D. Thesis, National Technical University of Athens, 2006.
10. A. Sofou, "Image Segmentation Using Morphological Methods and Active Contours with Application to Soilsection Analysis", Ph.D. Thesis, National Technical University of Athens, 2006.
11. V. Pitsikalis, "Nonlinear Dynamical Systems and Robust Speech Processing and Recognition", Ph.D. Thesis, National Technical University of Athens, 2007.
12. G. Evangelopoulos, "Texture and Microstructure Analysis with Modulation Models, Energy and Variational Techniques: Detection and Decomposition", Ph.D. Thesis, National Technical University of Athens, 2007.
13. A. Katsamanis, "Nonlinear Computational Speech Modeling with Elements of Aerodynamics of the Vocal Tract", Ph.D. Thesis, National Technical University of Athens, 2009.
14. G. Papandreou, "Image Analysis and Computer Vision: Theory and Applications in the Restoration of Ancient Wallpaintings", Ph.D. Thesis, National Technical University of Athens, 2009.
15. S. Lefkimmatis, "Statistical Signal and Image Processing for Optimum Denoising and Detection with Applications to Satellite Data", Ph.D. Thesis, National Technical University of Athens, 2009.
16. A. Roussos, "Nonlinear Diffusion in Computer Vision and Statistical Shape Models with Applications to Analysis of Articulator Images of Spoken and Sign Language", Ph.D. Thesis, National Technical University of Athens, 2010.
17. A. Zlatintsi, "Music Signal Processing and Applications in Recognition", National Technical University of Athens, 2013.
18. S. Theodorakis, "Sign Language Recognition and Modeling Using Visual Processing and Statistical Methods", National Technical University of Athens, 2014.
19. I. Rodomagoulakis, "Methods for Robust Speech Recognition with Multiple Sensors and Applications in Smart Environments", National Technical University of Athens, 2018.

20. P. Koutras, "Learning Spatio-Temporal Representations and Visual Attention Modeling in Computer Vision Problems", Ph.D. Thesis, National Technical University of Athens, 2019.
21. A. Tsiami, "AudioVisual Attention Modeling and Multi-sensory Auditory Scene Analysis, Ph.D. Thesis, National Technical University of Athens, 2019.
22. G. Retsinas, "Visual Representation Learning for Document Image Recognition", Ph.D. Thesis National Technical University of Athens, 2020.
23. P. Giannoulis, "Multi-sensory Acoustic Scene Analysis", National Technical University of Athens, 2021.

#### **Ph.D. Students: Thesis in Progress**

24. P. Filntisis, "Multimodal Deep Learning for Emotion Recognition and Synthesis in Human-Robot Interaction", National Technical University of Athens.
25. N. Efthymiou, "Computer Vision and Machine Learning in Multimedia Applications", National Technical University of Athens.
26. N. Kardaris, "Computer Vision, Robotics and Applications", National Technical University of Athens.
27. P. Mermigkas, "Computer Vision and Applications", National Technical University of Athens.
28. D. Anagnostopoulou, "Computer Vision and Robotics", National Technical University of Athens.
29. C. Garoufis, "Computer Vision, Robotics and Applications", National Technical University of Athens.
30. G. Bastas, "Speech & Music Processing and Deep Learning", National Technical University of Athens.
31. A. Arvanitakis, "Robotics and Machine Learning", National Technical University of Athens.

#### **Post-Doctoral Researchers**

32. L. Vincent, "Morphological Algorithms for Image Segmentation", Harvard University, 1990-1991.
33. P. Salembier, "Design of Optimal Nonlinear Filters for Image Pattern Detection", Harvard University, 1991.
34. D. Dimitriadis, "Speech and Audio Processing and Recognition in Multimedia", National Technical University of Athens, June 2006 – Sep. 2009.
35. G. Evangelopoulos, "Computer Vision and Audio Processing", National Technical University of Athens, June 2008 – Sep. 2010.
36. V. Pitsikalis, "Action, Gesture and Sign Recognition", National Technical University of Athens, June 2008 – 2012. 2014 – 2017.
37. A. Katsamanis, "Audio, Speech & Language Processing and Recognition", National Technical University of Athens, 2013 - 2016.
38. A. Tsiami, "AudioVisual Attention Modeling and Multi-sensory Auditory Scene Analysis, National Technical University of Athens, 2020 – present.
39. A. Zlatintsi, "Audio/Music Signal Processing and Multimodal Recognition", National Technical University of Athens, 2014 - present.
40. G. Retsinas, "Visual Representation Learning for Document Image Recognition", National Technical University of Athens, 2021 - present.

#### **Master of Engineering/Master of Science Students**

41. H. Hanson, "Nonlinear Speech Processing and Speaker Identification", Harvard University, 1991-92.
42. N. Vasiloglou, "Methods for Processing and Analyzing Fractal Signals", M.Eng. Diploma Thesis, National Technical University of Athens, 2000.
43. V. Pitsikalis, "Analysis of Chaotic Time-Series with Application to Speech Sounds", M.Eng. Diploma Thesis, National Technical University of Athens, 2001.

44. D. Dimarogonas, "Nonlinear Control Systems with Application to Discrete Event Dynamical Systems", M.Eng. Diploma Thesis, National Technical University of Athens, 2001.
45. G. Evangelopoulos, "Modern Methods for Signal Analysis with Application to Silence-Speech-Noise Detection", M.Eng. Diploma Thesis, National Technical University of Athens, 2001.
46. I. Kokkinos, "Analysis and Prediction of Speech Signals with Methods of Chaotic Time-Series Analysis", M.Eng. Diploma Thesis, National Technical University of Athens, 2001.
47. X. Chalkia, "Digital Processing of Kirlian Images", M.Eng. Diploma Thesis, National Technical University of Athens, 2002.
48. A. Kotsenos, "Applications of Energy Operator and of Energy Separation Algorithm on Phonemes Using Gabor, Gammatone and Gammachirp Filters", M.Sc. Thesis, National Technical University of Athens, 2002.
49. K. Tsiverdis, "Investigation of the Possibility of Improving the Efficiency of the Digital Image Coding Standard JPEG Using Multiscale Analysis Schemes", M.Eng. Diploma Thesis, National Technical University of Athens, 2003.
50. G.-A. Dimakis, "Stochastic Processing of Fractal Signals", M.Eng. Diploma Thesis, National Technical University of Athens, 2003.
51. G. Papandreou, "Fast Algorithms for Geodesic Active Contour Evolution with Applications in Computer Vision", M.Eng. Diploma Thesis, National Technical University of Athens, 2003.
52. A. Katsamanis, "Statistical Multiband Demodulation and Speech Analysis using Kalman Filters and Energy Methods", M.Eng. Diploma Thesis, National Technical University of Athens, 2003.
53. E. Pnevmatikakis, "Inpainting Models for Automatic Image Structure-Texture Restoration and Text Removal", M.Eng. Diploma Thesis, National Technical University of Athens, 2004.
54. M. Stavropoulos, "Texture Analysis and Modeling in Digital Images using Markov-Gibbs Random Fields", M.Eng. Diploma Thesis, National Technical University of Athens, 2005.
55. A. Roussos, "Theory and Applications of Partial Differential Equations in Computer Vision", M.Eng. Diploma Thesis, National Technical University of Athens, 2005.
56. Ch. Bergeles, "Moving Object Tracking with Emphasis on Human Gestures", M.Eng. Diploma Thesis, National Technical University of Athens, 2006.
57. M. Raptis, "Human Gesture Tracking", M.Eng. Diploma Thesis, National Technical University of Athens, 2006.
58. A. Metallinou, "Segmentation and Classification of Speech, Noise and Silence using Metric Criteria and Statistical HMM/GMM Models, with Applications to Broadcast News Sound Processing", M.Eng. Diploma Thesis, National Technical University of Athens, 2007.
59. O. Diamanti, "Visual Analysis of Sign Language Videos: Segmentation, Tracking and Feature Extraction", M.Eng. Diploma Thesis, National Technical University of Athens, 2007.
60. S. Theodorakis, "Recognition of Hand Gestures in Sign Language Videos using Hidden Markov Models", M.Eng. Diploma Thesis, National Technical University of Athens, 2008.
61. A. Hadjiosif, "Visual Saliency and Movie Video Summarization", M.Eng. Diploma Thesis, National Technical University of Athens, 2008.
62. I. Gkioulekas, "Computational Modeling of Visual Attention", M.Eng. Diploma Thesis, National Technical University of Athens, 2009.
63. K. Drakopoulos, "Morphology, Active Contours on Graphs and Implementations with Graphcuts", M.Eng. Diploma Thesis, National Technical University of Athens, 2009.
64. Th. Kapros, "Processing of Sound Signals with General Content for Detection of Salient Events", M.Eng. Diploma Thesis, National Technical University of Athens, 2010.
65. Th. Chaspari, "Emotion Recognition by Voice", M.Eng. Diploma Thesis, National Technical University of Athens, 2010.
66. G. Gkioxari, "Three-dimensional Reconstruction of Objects and Buildings with Multiview Geometry", M.Eng. Diploma Thesis, National Technical University of Athens, 2010.

67. P. Symvoulides, "Fractal Features Extraction from Physiological Signals with Application to a Computer Aided Diagnostic System for Mammographies", M.Eng. Diploma Thesis, National Technical University of Athens, 2010.
68. E. Antonakos, "Visual Modeling of Human Faces with Applications in Recognition", M.Eng. Diploma Thesis, National Technical University of Athens, 2011.
69. S. Tzoumas, "Face Detection and Pose Estimation with Applications in Automatic Analysis of Sign Language", M.Eng. Diploma Thesis, National Technical University of Athens, 2011.
70. Ch. Minaretzis, "Speech Synthesis from Text based on Hidden Markov Models", M.Eng. Diploma Thesis, National Technical University of Athens, 2011.
71. S. Stasinopoulos, "Detection and Classification of Human Actions Using Histogrammic Methods and Markov Models with Application in Martial Arts", M.Eng. Diploma Thesis, National Technical University of Athens, 2011.
72. Ch. Georgakis, "Human Action Recognition in Video", M.Eng. Diploma Thesis, National Technical University of Athens, 2011.
73. N. Karianakis, "Digital Restoration of Prehistoric Wall-paintings in Akrotiri-Thera", M.Eng. Diploma Thesis, National Technical University of Athens, 2011.
74. P. Koutras, "Eye Gaze Estimation using Active Appearance Models", M.Eng. Diploma Thesis, National Technical University of Athens, 2012.
75. E. Tzirita, "Automatic Music Transcription", M.Eng. Diploma Thesis, National Technical University of Athens, 2013.
76. Z.-I. Skordilis, "Speaker Source Localization and Speech Denoising Using Multichannel Processing", M.Eng. Diploma Thesis, National Technical University of Athens, 2013.
77. G. Retsinas, "Handshape Recognition from the Alphabet of the Greek Sign Language with Emphasis on the Extraction of Rotationally Invariant Visual Features", M.Eng. Diploma Thesis, National Technical University of Athens, 2014.
78. N. Melanitis, "Applications of 3D Reconstruction with Multiple-View Geometry", M.Eng. Diploma Thesis, National Technical University of Athens, 2014.
79. G. Pavlakos, "Multimodal Gesture Recognition", M.Eng. Diploma Thesis, National Technical University of Athens, 2014.
80. K. Maninis, "Human Action Classification and Recognition in Videos", M.Eng. Diploma Thesis, National Technical University of Athens, 2014.
81. C. Sakaridis, "Geodesic Active Contours on Arbitrary Graphs", M.Eng. Diploma Thesis, National Technical University of Athens, 2014.
82. C. Bampis, "Graph-theoretic Methods of Computer Vision and Machine Learning for Object Detection", M.Eng. Diploma Thesis, National Technical University of Athens, 2014.
83. K. Zampogiannis, "Stochastic Visual Object Tracking", M.Eng. Diploma Thesis, National Technical University of Athens, 2014.
84. E. Mavroudi, "Automatic Recognition of Human Actions with Enriched Video Representations", M.Eng. Diploma Thesis, National Technical University of Athens, 2015.
85. O. Karathanou, "Multimodal Segmentation of Movie Videos in Scenes", M.Eng. Diploma Thesis, National Technical University of Athens, 2015.
86. G. Anastasiou, "Automatic Detection of Salient Audio Events", M.Eng. Diploma Thesis, National Technical University of Athens, 2015.
87. L. Flokas, "Sparse Representations and Applications", M.Eng. Diploma Thesis, National Technical University of Athens, 2015.
88. N. Kardaris, "Feature Extraction and Coding Methods for Human Action and Gesture Recognition with Applications in Robotics", M.Eng. Diploma Thesis, National Technical University of Athens, 2015.
89. G. Panagiotaropoulou, "fMRI Data Processing and Their Application in the Problem of Audio-Visual Saliency", M.Eng. Diploma Thesis, National Technical University of Athens, 2015.

90. P. Filntisis, "Audio-Visual Speech Synthesis Using Hidden Markov Models", M.Eng. Diploma Thesis, National Technical University of Athens, 2015.
91. N. Kolotouros, "Geodesic Active Contours and Finite Elements Method for Segmentation on Graphs", M.Eng. Diploma Thesis, National Technical University of Athens, 2015.
92. N. Flemotomos, "Robust Acoustic Features for Automatic Distant Speech Recognition", M.Eng. Diploma Thesis, National Technical University of Athens, 2016.
93. V. Charisopoulos, "Tropical Geometry and Optimization with Applications to Machine Learning", M.Eng. Diploma Thesis, National Technical University of Athens, 2017.
94. E. Nikoloudakis, "Automatic Human Action Recognition Using Deep Convolutional Neural Nets", M.Eng. Diploma Thesis, National Technical University of Athens, 2017.
95. V. Lemonidis, "Real-time Dynamic Gesture Recognition in Static Egocentric Environment using Depth Sensor", M.Eng. Diploma Thesis, National Technical University of Athens, 2017.
96. J. Hadfield, "Virtual Agent for Object Assembly Assistance", M.Eng. Diploma Thesis, National Technical University of Athens, 2017.
97. G. Bouritsas, "Multimodal Video Understanding with Weakly Supervised Learning Techniques", M.Eng. Diploma Thesis, National Technical University of Athens, 2017.
98. T. Pissas, "Recognition of Human Actions and Gestures Using Convolutional and Recurrent Neural Nets", M.Eng. Diploma Thesis, National Technical University of Athens, 2017.
99. N. Gkanatsios, "Multimodal Recognition and Segmentation of Actions in Video", M.Eng. Diploma Thesis, National Technical University of Athens, 2017.
100. C. Garoufis, "Implementation of a Gesture Motion-based System for Music Synthesis", M.Eng. Diploma Thesis, National Technical University of Athens, 2018.
101. S. Pertikiozoglou, "Detection of Adversarial Image Examples in Convolutional Neural Nets", M.Eng. Diploma Thesis, National Technical University of Athens, 2018.
102. E. Theodosis, "Tropical Analysis of Algorithms on Graphs", M.Eng. Diploma Thesis, National Technical University of Athens, 2018.
103. E. Chatzipantazis, "Semantic Object Segmentation with Spectral Graph Theory Techniques", M.Eng. Diploma Thesis, National Technical University of Athens, 2018.
104. S. Galanakis, "Recognition and Localization of Human Activity in Video", M.Eng. Diploma Thesis, National Technical University of Athens, 2019.
105. V. Tassopoulou, "An Exploration of Deep Learning Architectures for Handwritten Text Recognition", M.Eng. Diploma Thesis, National Technical University of Athens, 2019.
106. G. Smyrnis, "Maxpolynomial Tropical Division and Neural network Simplification", M.Eng. Diploma Thesis, National Technical University of Athens, 2020.
107. N. Dimitriadis, "Tropical Geometry and Applications in Machine Learning and Optimization", M.Eng. Diploma Thesis, National Technical University of Athens, 2020.
108. M. Diomataris, "Analysis of Semantic Bias for Visual Relations Detection with Semi-Supervised Learning", M.Eng. Diploma Thesis, National Technical University of Athens, 2020.
109. D. Anagnostopoulou, "Automatic Engagement Estimation During Child-Robot Interaction by Using Pose Information", M.Eng. Diploma Thesis, National Technical University of Athens, 2020.
110. I. Maroungkas, "A Study of a Hierarchical Multi-Attentive Framework for Real-Time Single Object 6-D Pose Tracking", M.Eng. Diploma Thesis, National Technical University of Athens, 2021.
111. V. Vasileiou, "Deep Neural Network Architectures for Recognition and Temporal Localization of Actions in Videos", M.Eng. Diploma Thesis, National Technical University of Athens, 2021.
112. I. Asmanis, "Combining Semantics With Unified Geometric Representations For Indoor SLAM", M.Eng. Diploma Thesis, National Technical University of Athens, 2021.
113. M. Parelli, "Deep Learning Based Sign Language Recognition", M.Eng. Diploma Thesis, National Technical University of Athens, 2021.
114. I. Pikoulis, "Visual Semantic Emotion Recognition Using Deep Neural Networks", M.Eng. Diploma Thesis, National Technical University of Athens, 2021.

115. A. Kratimenos, “3D Body, Face and Hands Reconstruction with application on Sign Language Recognition”, M.Eng. Diploma Thesis, National Technical University of Athens, 2021.
116. N. Tsilivis, “Sparse Representations in Tropical Mathematics”, M.Eng. Diploma Thesis, National Technical University of Athens, 2021.
117. S. Koutoupis, “Techniques for Automatic Transcription of Acoustic Guitar Signal to Symbolic Representations Using Digital Signal Processing and Machine Learning Methods”, M.Eng. Diploma Thesis, National Technical University of Athens, 2021.
118. K. Avramidis, “Affective Analysis and Interpretation of Brain Responses to Music Stimuli”, M.Eng. Diploma Thesis, National Technical University of Athens, 2021.
119. I. Diamanti, “Modeling Visual Attention in Video Data with Incorporation of Depth”, M.Eng. Diploma Thesis, National Technical University of Athens, 2021.
120. P. Misiakos, “Tropical Geometric Approximation of Zonotopes With Applications to Neural Network Compression”, M.Eng. Diploma Thesis, National Technical University of Athens, 2021.
121. P. Antoniadis, “Deep Facial Expression Recognition Exploiting Categorical and Continuous Emotional Dependencies”, M.Eng. Diploma Thesis, National Technical University of Athens, 2021.
122. P. Papantonakis, “Singing Voice Separation using Waveform-Level Deep Neural Networks”, M.Eng. Diploma Thesis, National Technical University of Athens, 2021.
123. F. Paraperas-Papantoniou, “Photo-realistic Neural Rendering for Emotion-related Semantic Manipulation of Unconstrained Facial Videos”, M.Eng. Diploma Thesis, National Technical University of Athens, 2022.
124. M. Panagiotou, “Recording and Analysis of Biometric Indicators to Support Patients in Mental Health Issues”, M.Eng. Diploma Thesis, National Technical University of Athens, 2022.

### **M.Eng./M.Sc. Students: Thesis in Progress**

125. C. Tze, “Automatic Sign Language Video Synthesis”, M.Eng. Diploma Thesis, National Technical University of Athens,
126. A. Benetatos, “Vision and Language”, M.Eng. Diploma Thesis, National Technical University of Athens,
127. D. Makropoulos, “Deep Learning Techniques for Detection and Classification of Whale and Dolphin Bioakoustic Patterns”, M.Sc. Thesis, National Technical University of Athens,
128. P. Tzathas, “Shape and Learning”, M.Eng. Diploma Thesis, National Technical University of Athens,
129. D. Bralios, “Speech Separation using Deep Learning”, M.Eng. Diploma Thesis, National Technical University of Athens,
130. A. Georgis, “Visual SLAM”, M.Eng. Diploma Thesis, National Technical University of Athens,
131. C. Aggekalokopoulos, “Greek Speech Synthesis”, M.Sc. Thesis, National Technical University of Athens,
132. D. Charitou, “Automatic Music Synthesis”, M.Eng. Diploma Thesis, National Technical University of Athens,
133. S. Alexandropoulos, “Semantic Segmentation using Deep Learning”, M.Eng. Diploma Thesis, National Technical University of Athens,
134. K. Spathis, “Action Recognition and HRI”, M.Eng. Diploma Thesis, National Technical University of Athens,

### **Batchelor of Science Students**

135. N. Weir, "Analysis of the Maximum Entropy Method of Image Restoration Applied to Infrared and Optical Astronomy", A.B. Thesis, Harvard University, 1987.

136. R. Liebeskind-Hadas, "An Application of Iterated Function Systems and Skeletonization to the Modeling of Fractal Images", A.B. Thesis, Harvard University, 1987.
137. R. D. Ziff, "Data Structures and Algorithms for Mathematical Morphology", Senior Thesis, Harvard University, 1988.
138. H. Hu, "Forehead Feature Extraction by Deformable Templates", A.B. Thesis, Harvard University, 1989.
139. K. L. Young, "The Analysis-by-Synthesis Method of CELP: Pitch Predictor Enhancements and Fractal Codebook Extensions", A.B. Thesis, Harvard University, 1991.

## **VIII. UNIVERSITY ADMINISTRATIVE EXPERIENCE**

### **UNIVERSITY FACULTY COMMITTEES**

#### **Harvard University**

- *Head Tutor for Engineering Sciences*, 1988 - 1991:  
*Head Coordinator of Undergraduate Program of Harvard University in Engineering Sciences.* Supervised the organization and changes of the undergraduate program of Harvard University in Engineering and headed the preparation of the program for a successful accreditation by the ABET committee.
- Member of the Board of Tutors for Applied Mathematics, 1985 - 1987.
- Member of the Board of Tutors for Engineering Sciences, 1985 - 1993.
- Member of the Committee on Higher Degrees, 1986-1988.  
Member of the University Committee of Graduate Studies.
- Member of the Faculty Committee of Electrical, Computer, and Systems Engineering, 1985-1993.

#### **Georgia Institute of Technology**

- Member of Faculty Committees of Signal Processing and Communications, 1993 - 98.
- Member of the Research Committee, 1993 - 95.
- Member of Computer Resources Committee, 1996.

#### **National Technical University of Athens**

- *Chairman of ECE Committee of Graduate Studies and Director of Graduate Program*, 2000 - 2004.
- Member of the University Senate Committee of Graduate Studies, 2000 - 2004.
- Member of General Faculty Assembly of ECE School, 2000 - 2011.
- Member of Faculty Assembly of Division of Signals, Control & Robotics, 2001 - present.
- Member of ECE School Committee on university building planning, 2004 – 05.
- *Director of ECE Intelligent Robotics & Automation Lab*, <https://robotics.ntua.gr/>, 2008 – present.
- *Director of ECE Division of Signals, Control & Robotics*, 2009 – 2011, 2013 - present.

### **ORGANIZATION OF NEW LABS**

- Laboratory for research in Speech Processing, Harvard University, 1987.
- Laboratory for research in digital audio and sound processing, Georgia Inst. Technology, 1993.
- Laboratory for research in Computer Vision, Speech Communication and Signal Processing, Nat'l. Tech. Univ. Athens, 1999 - present. URL: <http://cvsp.cs.ntua.gr>
- Robotic Perception and Interaction Unit (former Information Analysis and Modeling Unit), Athena Research & Innovation Center, 2009 – present.  
URL: [https://www.athena-innovation.gr/en/robotics\\_perception\\_interaction\\_unit\\_dm](https://www.athena-innovation.gr/en/robotics_perception_interaction_unit_dm)



## **VI. INVITED PUBLIC TALKS**

1. "Applications of Morphological Filtering to Image Analysis and Processing", *The Analytic Sciences Corporation*, Reading, Massachusetts, December 1985.
2. "Morphological Signal and Image Analysis", *Massachusetts Institute of Technology*, Cambridge, Massachusetts, February 1986.
3. "Advances in Morphological Image Processing and Analysis", Invited Talk, *SPIE Conference on Visual Communications and Image Processing*, Cambridge, Sep. 1986
4. "A Geometrical Approach to Nonlinear Signal and Image Processing", *Bell Communications Research*, Morristown, New Jersey, March 1987.
5. "Some Issues in Nonlinear Signal Processing, Symbolic Signal Description, and Fractals", *Georgia Institute of Technology*, Atlanta, April 1987.
6. "Morphological Image Processing", Invited Sigma Xi Lecture, *GTE Laboratories*, Waltham, Massachusetts, June 1987.
7. "Morphology-based Image and Signal Analysis", *The Johns Hopkins University*, Baltimore, Maryland, Oct. 1987.
8. "Morphological and Median Filtering in Image Processing", *Canadian Center for Remote Sensing*, Ottawa, Ontario, July 1988.
9. "Mathematical Morphology Applied to Multi-Scale Image Representation and Shape Description", *Morphology Workshop*, Univ. of Alabama, Huntsville, July 1988.
10. "Morphological Image Processing", *Worcester Polytechnic Institute*, Worcester, MA, Feb. 1989.
11. "Nonlinear Image Matching and Region-based Motion Analysis", *Bellcore*, Morristown, New Jersey, March 1989.
12. "Image Processing and Shape Analysis using Mathematical Morphology", *AT&T Bell Labs*, March 1989.
13. "Morphological Image and Signal Processing", *IEEE Invited Talk, Boston Chapter of Signal Processing Society*, April 1989.
14. "Topics in Morphological Image Analysis", *Xerox, PARC*, Palo Alto, CA, June 1989.
15. "Some Topics in Image and Speech Analysis", *Georgia Inst. Technology*, Atlanta, Sep. 1989.
16. "Fractal Aspects of Speech Signals", *M.I.T. Lincoln Labs*, Lexington, MA, Oct. 1989.
17. "Morphological Signal Processing", *University of Connecticut*, Storrs, CT, March 1990.
18. "Fractals in Speech and Image Processing", *Massachusetts Institute of Technology*, Cambridge, MA, May 1990.
19. "Introduction to Fractals", *ARO Workshop on Fractals and Chaos in Science and Engineering*, Research Triangle Parc, NC, May 1991.
20. "Fractal and Modulation Structures in Speech Signals", *University of Connecticut*, Storrs, CT, Nov. 1991.
21. "Energy Modulations and Fractal Structures in Speech Signals", *B.B.N.*, Cambridge, MA, Jan. 1992.
22. "Multiscale Morphological Filtering and Fractals", *Georgia Institute of Technology*, Atlanta, May 1992.
23. "Nonlinear Systems for Speech Signal Processing", *Georgia Inst. Technology*, Atlanta, May 1992.
24. "Mathematical Morphology for Image Analysis", *National Technical University of Athens*, Oct. 1992.
25. "Nonlinear Systems for Speech Signal Processing", *Norwegian Institute of Technology*, Trondheim, Norway, Nov. 1992.
26. "Nonlinear Systems for Processing of Speech Signals", *National Technical University of Athens*, Dec. 1992.
27. "Nonlinear Phenomena in Speech Signals: Energy Modulations and Fractals", *University of Athens*, Jan. 1993.
28. "Energy Modulations in Speech Signals", *M. I. T.*, Cambridge, MA, Mar. 1993.
29. "Morphological Image Analysis", *Center for Imaging & Pharmaceutical Research*, Massachusetts General Hospital, Boston, April 1993.
30. "Some Advances in Speech Analysis using AM-FM Models and Energy Operators", *M.I.T. Lincoln Laboratory*, Lexington, Massachusetts, Oct. 1993.
31. "Nonlinear Speech Processing using AM-FM Models and Energy Demodulation", *IEEE Invited Talk, Boston Chapter of Signal Processing Society*, Jan. 1994.
32. "Nonlinear Systems with Applications to Image and Speech Processing", *Louisiana State University*, Baton Rouge, LA, April 1994.
33. "Differential Morphology, Optics, and Image Processing", *Georgia Institute of Technology*, 1995.
34. "Nonlinear Multiscale Image Analysis and Vision via Partial Differential Equations", *University of Athens*, March 1997.
35. "Multicomponent AM-FM Demodulation via Periodic Algebraic Separation and Energy Demodulation", *M.I.T. Lincoln Labs*, Boston, June 1997.
36. "Modulation and Fractal Models for Speech Analysis and Recognition", *COST249 European Meeting, University of Porto*, Portugal, Feb. 1998.

37. "Image Segmentation using Partial Differential Equations", TMR European Meeting, *University Claude Bernard Lyon I*, France, March 1998.
38. "Nonlinear Partial Differential Equations in Computer Vision", *11th SummerSchool -- National Conference for Non-linear Dynamics: Complexity and Chaos*, Livadia, July 1998.
39. "Partial Differential Equations in Image Analysis: Continuous Modeling, Discrete Processing", **Plenary Talk**, *European Signal Processing Conference (EUSIPCO-1998)*, Rhodes, Greece, Sep. 1998.
40. "Two Frontiers in Morphological Image Analysis: Differential Evolution Models and Hybrid Morphological/Linear Neural Networks", **Plenary Talk**, *International Symposium on Computer Graphics, Image Processing and Vision (SIBGRAPI-98)*, Rio de Janeiro, Brazil, Oct. 1998.
41. "Morphological Processing of Images and Nonlinear Systems", *University of Patras*, May 2000.
42. «Speech Processing with Chaotic Features», Seminar *KTISIVIOS*, Human Network for Knowledge Diffusion R&T in control, GSRT, Athens, Nov. 2000.
43. «Computer Vision in Control Systems: Geometrical Techniques», Seminar *KTISIVIOS*, Human Network for Knowledge Diffusion R&T in control, GSRT, Athens, Nov. 2000.
44. "Hybrid Neural Nets with Non-linear Processing Nodes: Theory and Application", *Robotics Workshop*, Human Network for Artificial Intelligence, GSRT, Athens, Mar. 2001.
45. "Topics in Image Analysis and Computer Vision", Int'l Workshop on Very Low Bit Rate Video Coding, Athens, Greece, Oct. 2001.
46. "Lattice and PDE Approaches for Global Multiscale and Connectivity Problems", *Workshop on Mathematics and Image Analysis (MIA-2002)*, Paris, Sep. 2002.
47. "Lattice and PDE Approaches for Multiscale Analysis and Segmentation Problems In Computer Vision", **Keynote Talk**, *International Conference on Computing*, Mexico City, Nov. 2002.
48. "Nonlinear Speech Processing: Motivations, Goals, Applications", *EUROMAP Meeting on Language Technology*, Athens, March 2003.
49. "Topics in Computer Vision", *University of Athens*, Dept. of Informatics, May 2004.
50. "Some Advances in Multiscale Multiple-Cue Image Segmentation", *MUSCLE European Scientific Meeting*, Malaga, Spain, Nov. 2004.
51. "Geometric PDEs and Curve Evolution with Level Sets: Applications in Computer Vision", School of Applied Math. and Physical Sciences, NTUA, Jan. 2005.
52. "Perspectives on Basic Research in Informatics and Telecommunications", *Workshop on the Development of Basic Research in Greece: National Strategy and European Perspectives*, NTUA, Mar. 2006.
53. "Multimodal Signal Processing: Audio-Visual Fusion", Workshop: "*Greek Signal Processing Jam*", Univ. Athens, 17 Oct. 2009.
54. "Multimodal Signal Fusion and Saliency-based Movie Summarization", Institute of Mathematics and Statistics, University of Sao Paulo, Brazil, Nov. 2009.
55. "Multimodal Signal Processing: Audio-Visual Fusion", *1st Signal Processing Jam (Workshop)*, Athens, 17 Oct. 2009.
56. "Overview of NTUA Computer Vision Research and Recent Activities related to Akrotiri", Summer School-Seminar, *Center of Study of Prehistoric Thera - Akrotiri Excavation*, Santorini, Greece, July 2010.
57. "Multimodal Signal Processing and Multidimensional Integration", **Plenary Talk**, *European Signal Processing Conference (EUSIPCO-2010)*, Aalborg, Denmark, Aug. 2010.
58. "Audio-Visual Event Detection, Multimodal Saliency and Movie Summarization", *COST European Meeting: 1st TIMELY Workshop*, Athens, Oct. 2010.
59. "Segmentation and Skeletonization on Arbitrary Graphs Using Multiscale Morphology and Active Contours", [\*Dagstuhl Seminar 11142 - "Innovations for Shape Analysis: Models and Algorithms"\*](#), Dagstuhl Schloss, Germany, 06 Apr. 2011.
60. "Multimodal Information Processing and Fusion", **Keynote Talk**, *International Gesture Workshop (GW 2011)*, Athens, May 2011.
61. "Sign Language Recognition: Visual Processing and Multimodal Visemes/Subunits", *FIRST: Workshop on Image Processing and Reaction-Diffusion*, Jerusalem, Israel, 13 Sep. 2012.
62. "Morphological and Variational Methods in Image Analysis and Vision", *University of Pennsylvania*, GRASP Lab, Philadelphia, 05 Oct. 2012.
63. "Morphological Signal/Image Processing in the Time/Space and Slope Domains", *Massachusetts Institute of Technology*, EECS, DSP Seminar, 24 Oct. 2012.
64. "Multimodal Information Processing, Fusion and Recognition, Nonlinear Systems", *Massachusetts Institute of Technology*, EECS, LIDS Seminar, 27 Nov. 2012.

65. "Audio-Visual Processing: Theory and Applications to Speech Inversion and Recognition", *M.I.T. Lincoln Laboratory*, Lexington, Massachusetts, 13 Dec. 2012.
66. "Advances in Sign Language Recognition and Morphological Systems", *University of Southern California*, Signal and Image Processing Institute, Los Angeles, 17 Dec. 2012.
67. "Modulation Models in Speech and Video Processing", *University of Washington*, Dept. of Electrical Engineering, Seattle, WA, 19 Dec. 2012.
68. "Advances in Sign Language Recognition and Variational Methods in Vision", *Foundation for Research and Technology (FORTH)*, Hraklion, Crete, 18 Jan. 2013.
69. "On Shape Recognition and Language", [\*Dagstuhl Seminar 14072 - "New Perspectives in Shape Analysis"\*](#), Dagstuhl Schloss, Germany, 13 Feb. 2014.
70. "Lattice and Variational Methods in Image Analysis and Vision", *School of Applied Math. and Physical Sciences*, NTUA, 26 Feb. 2014.
71. "Audio-Visual Attention and Lattice Dynamical Systems", *Research Workshop on Shape and Image Modeling and Analysis (SIMA 2014)*, Ein-Gedi, The Dead Sea, Israel, 29 May 2014.
72. "Audio-Visual Information Processing: Modeling and Applications", *University of Crete*, Hraklion, Crete, 25 July 2014.
73. "Audio-Visual Attention and Lattice Dynamical Systems", *Ecole Centrale Paris*, 24 Oct. 2014.
74. "Signal Processing and Dynamical Systems on Weighted Lattices", *Workshop: 3<sup>rd</sup> Signal Processing Jam*, Athens, 20 Jan. 2015.
75. "Modern Trends and Perspectives in Signal Processing", **Keynote Talk**, *8<sup>th</sup> Panhellenic Conference of University Students in Electrical and Computer Engineering*, Patras, Greece, 03 Apr. 2015.
76. "Audio-Visual Attention, Computational Saliency, and Movie Summarization", *University of Southern California*, Los Angeles, 16 Feb. 2016.
77. "Action and Gesture Recognition in Human-Robot Interaction", *University of Southern California*, Los Angeles, 17 Feb. 2016.
78. "Signal Processing and Dynamical Systems on Weighted Lattices", *University of Southern California*, Los Angeles, 18 Feb. 2016.
79. "Action, Gesture and Spoken Command Recognition in Human-Robot Interaction", *Oregon State University*, Corvallis, OR, 22 Feb. 2016.
80. "Action, Gesture and Spoken Command Recognition in Human-Robot Interaction", *School of Applied Mathematics and Physical Sciences*, NTUA, 30 Mar. 2016.
81. "Graph-theoretic Approaches to Segmentation based on Active Contours and Random Walk Schemes on Arbitrary Graphs", *University of Pennsylvania*, GRASP Lab, Philadelphia, 02 Dec. 2016.
82. "Multimodal Spatio-Temporal Signal Processing and Audio-Visual Perception", **IEEE SPS DL Talk**, *GTTI Thematic Meeting on Multimedia Signal Processing 2017, IEEE SPS Italy Chapter*, Courmayeur, Italy, 30 Jan. 2017.
83. "Graph-theoretic Approaches to Segmentation based on Active Contours and Random Walk Schemes on Arbitrary Graphs", **IEEE SPS DL Talk**, *Sapienza University of Rome*, 17 May 2017.
84. "Signal Processing and Dynamical Systems on Weighted Lattices", *Thomas Kailath Honorary Degree Ceremony, Symposium in Athens*, Museum of the Akropolis, 13 June 2017.
85. "Multimodal Processing and Learning with Applications in Audio-Visual Perception and Understanding", **IEEE SPS DL Talk**, *Tencent, IEEE Beijing Chapter*, Beijing, China, 21 Sep. 2017.
86. "Action, Gesture and Spoken Command Recognition in Human-Robot Interaction", **IEEE SPS DL Talk**, *Tsinghua University*, Beijing, China, 22 Sep. 2017.
87. "Graph-theoretic Approaches to Segmentation based on Active Contours and Random Walk Schemes on Arbitrary Graphs", **IEEE SPS DL Talk**, *Foundation for Research & Technology – Inst. Comp. Science*, Hraklion, Crete, 13 Nov. 2017.
88. "Action, Gesture and Spoken Command Recognition in Human-Robot Interaction", **IEEE SPS DL Talk**, *Università di Pisa, Dipartimento di Ingegneria dell' Informazione*, Italy, 20 Dec. 2017.
89. "Multimodal Processing and Learning with Applications in Audio-Visual Perception and Understanding", **IEEE SPS DL Talk**, *Stanford University*, Dept. Computer Science, Stanford, California, 6 Feb. 2018.
90. "Dynamical Systems on Weighted Lattices: Nonlinear Processing and Optimization", **IEEE SPS DL Talk**, *Stanford University*, Dept. Electrical Engineering, Stanford, California, 8 Feb. 2018.
91. "Multimodal Data Processing and Learning with Applications in Audio-Visual Perception and Human-Robot Interaction", *VMWare*, Palo Alto, California, 12 Feb. 2018.
92. "Dynamical Systems on Weighted Lattices: Nonlinear Processing and Optimization", **IEEE SPS DL Talk**, *University of Southern California*, Los Angeles, 14 Feb. 2018.
93. "Multimodal Processing and Learning with Applications in Audio-Visual Perception and Understanding", **IEEE SPS DL Talk**, *Google Research*, Los Angeles Campus, Venice, California, 15 Feb. 2018.

94. "Dynamical Systems on Weighted Lattices: Nonlinear Processing and Optimization", **IEEE SPS DL Talk**, *University of Patras*, Rio, Greece, 4 May 2018.
95. "Graph-theoretic Approaches to Segmentation based on Active Contours and Random Walk Schemes on Arbitrary Graphs", **Distinguished Lecturer Series "Leon the Mathematician"**, *Aristotle University of Thessaloniki - Dept. of Informatics*, 31 May 2018.
96. "[Discretization of Morphology-type PDEs and Active Contours on Graphs](#)", *SIAM Conference on Imaging Science 2018*, Minisymposium "MS48 - Recent Advances in Mathematical Morphology: Algebraic and PDE-based Approaches", 7 June 2018.
97. "Multimodal Processing and Learning with Applications in Audio-Visual Perception and Understanding", **IEEE SPS DL Talk**, *University of Ioannina*, Ioannina, Greece, 13 June 2018.
98. "Nonlinear Aspects of Speech Production: Speech Modulations and Energy Operators", **IEEE SPS DL Talk**, [Summer School on Speech Production, Satellite Event of INTERSPEECH 2018](#), DA-IICT, Gandhinagar, India, 9 Sep. 2018.
99. "Nonlinear Aspects of Speech Production: Fractals and Chaotic Dynamics", **IEEE SPS DL Talk**, [Summer School on Speech Production, Satellite Event of INTERSPEECH 2018](#), DA-IICT, Gandhinagar, India, 10 Sep. 2018.
100. "Mathematical Morphology, Tropical Geometry and Weighted Lattices", [Dagstuhl Seminar 18422 - "Shape Analysis: Euclidean, Discrete and Algebraic Geometric Methods"](#), Dagstuhl Schloss, Germany, 17 Oct. 2018.
101. "[Synergy between Computer Vision and Language Processing for Multimodal Perception and Understanding](#)", **Invited Talk**, *IEEE Workshop on Spoken Language Technology (SLT 2018)*, Athens, 19 Dec. 2018.
102. "Multisensory Video Processing and Learning for Human-Robot Interaction", *National Taiwan University*, Dept. Computer Science & Information Engineering, Taipei, 27 Sep 2019.
103. "Synergy between Computer Vision and Language Processing for Multimodal Perception and Understanding", *Portland State University*, Dept. Electrical & Computer Engineering, Portland, USA, 27 Nov. 2019.
104. "Computer Vision and Multimodal Communication for Physically and Socially Assistive Robotics", *Computer Vision Lab, Dept. Information Technology & Electrical Engineering, ETH*, Zürich, 25 May 2021.
105. "Introduction to Tropical Geometry and its Applications to Machine Learning", [Artificial Intelligence Doctoral Academy \(AIDA\) Excellence Lecture Series](#), 26 Oct. 2021.