Epameinondas Antonakos

Curriculum Vitae

Imperial College London
Department of Computing
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http://nontas.github.io/

Research Interests

theory Probabilistic Deformable Models, Statistical Machine Learning/Pattern Recognition, Computer Vision, Detection and Estimation Theory

applications Generic Landmark Localisation, Object Alignment and Tracking, Facial Modeling, Human-Robot Interaction, Facial Expression Recognition

Education

2013–2017 **Imperial College London, UK**
Ph.D. in Computing, *(expected)*.
Topic: Unsupervised Construction of Deformable Models In-The-Wild
Description: Research on Probabilistic Deformable Models for detection and tracking of objects under unconstrained conditions, with special focus on development of powerful generative models and methodologies for their unsupervised training.
Advisor: Dr. Stefanos Zafeiriou

2004–2011 **National Technical University of Athens, Greece**
Diploma/M.Eng. in Electrical and Computer Engineering.
Course flows: Signals, Automatic Control and Robotics,
Computer Software,
Computational Systems,
Electronics, Circuits and Materials
Diploma thesis: Visual Modeling of Human Face in Real-Time with Applications in Recognition
Advisor: Prof. Petros Maragos
Grades: G.P.A.: 7.46/10, Thesis: 10/10

Research Experience

Oct 2012–present **Imperial College London, UK**
Graduate Research Assistant.
Group: Intelligent Behaviour Understanding Group (iBUG)
Projects: 4D-FAB: Automatic analysis of facial behaviour in 4D (EPSRC)
TeSLA: An Adaptive Trust-based e-assesment System for Learning (EU)
Description: Research on face modeling with applications on face detection, facial landmark localisation and face verification. Responsible for project meetings with partners and deliverables.

Sep 2011–Sep 2012 **National Technical University of Athens, Greece**
Graduate Research Assistant.
Group: Computer Vision, Speech Communication & Signal Processing Group (CVSP)
Project: Dicta-Sign: Sign Language Recognition, Generation and Modeling with Application in Deaf Communication (EU)
Description: Research on the unsupervised classification of facial events and their incorporation in low-level and high-level sign language linguistic phenomena recognition.

Publications

Refereed Journal Articles

2016 C. Sagonas, E. Antonakos, G. Tzimiropoulos, S. Zafeiriou, and M. Pantic. 300 Faces In-The-Wild Challenge: Database and Results. *Image and Vision Computing (IMAVIS), Special Issue on Facial Landmark Localisation "In-The-Wild" (impact factor 2014: 2.384)*, 2016.

2015 E. Antonakos, J. Alabort-i-Medina, G. Tzimiropoulos, and S. Zafeiriou. Feature-Based Lucas-Kanade and Active Appearance Models, *IEEE Transactions on Image Processing (T-IP) (impact factor 2015: 3.625)*, 24(9): pp. 2617-2632, September 2015.

2014 E. Antonakos, V. Pitsikalis, and P. Maragos. Classification of Extreme Facial Events in Sign Language Videos. *EURASIP Journal on Image and Video Processing*, Springer, 2014(14): 2014.

Top-Tier Conference Presentations

2016 G. Trigeorgis, P. Snape, M. Nicolaou, E. Antonakos, and S. Zafeiriou. Mnemonic Descent Method: A recurrent process applied for end-to-end face alignment. In *IEEE International Conference on Computer Vision and Pattern Recognition (CVPR'16) (29.9% acceptance rate)*, Las Vegas, NV, USA, June 2016.

2016 Y. Zhou, E. Antonakos, J. Alabort-i-Medina, A. Roussos, and S. Zafeiriou. Estimating Correspondences of Deformable Objects "In-the-wild". In *IEEE International Conference on Computer Vision and Pattern Recognition (CVPR'16) (29.9% acceptance rate)*, Las Vegas, NV, USA, June 2016.

2016 L. Zafeiriou, E. Antonakos, and S. Zafeiriou. Joint Unsupervised Deformable Spatio-Temporal Alignment of Sequences. In *IEEE International Conference on Computer Vision and Pattern Recognition (CVPR'16) (29.9% acceptance rate)*, Las Vegas, NV, USA, June 2016.

2015 E. Antonakos, J. Alabort-i-Medina, and S. Zafeiriou. Active Pictorial Structures. In *IEEE International Conference on Computer Vision and Pattern Recognition (CVPR'15) (27% acceptance rate)*, Boston, MA, USA, pp. 5435-5444, June 2015.

2014 J. Alabort-i-Medina, E. Antonakos, J. Booth, P. Snape, and S. Zafeiriou. Menpo: A Comprehensive Platform for Parametric Image Alignment and Visual Deformable Models. In *ACM International Conference on Multimedia (MM'14)*, Orlando, FL, USA, pp. 679-682, November 2014.

2014 L. Zafeiriou, E. Antonakos, S. Zafeiriou, and M. Pantic. Joint Unsupervised Face Alignment and Behaviour Analysis. In *European Conference on Computer Vision (ECCV'14) (25% acceptance rate)*, Zurich, Switzerland, pp. 167-183, September 2014.

2014 E. Antonakos, and S. Zafeiriou. Automatic Construction of Deformable Models In-The-Wild. In *IEEE International Conference on Computer Vision and Pattern Recognition (CVPR'14) (28% acceptance rate)*, Columbus, OH, USA, pp. 1813-1820, June 2014.

Ordinary Conference Presentations

2015 G. Chrysos, E. Antonakos, S. Zafeiriou, and P. Snape. Offline Deformable Face Tracking in Arbitrary Videos. In *IEEE International Conference on Computer Vision Workshops (ICCVW'15), 300 Videos in the Wild (300-VW): Facial Landmark Tracking in-the-Wild Challenge & Workshop*, Santiago, Chile, December 2015.

2015 E. Antonakos, A. Roussos, and S. Zafeiriou. A Survey on Mouth Modeling and Analysis for Sign Language Recognition. In *IEEE International Conference and Workshops on Automatic Face and Gesture Recognition (FG'15)*, Ljubljana, Slovenia, pp. 1-7, May 2015.

2014 E. Antonakos, J. Alabort-i-Medina, G. Tzimiropoulos, and S. Zafeiriou. HOG Active Appearance Models. In *IEEE International Conference on Image Processing (ICIP'14) (Received the top 10% papers award.)*, Paris, France, pp. 224-228, October 2014.

2012 E. Antonakos, V. Pitsikalis, I. Rodomagoulakis, and P. Maragos. Unsupervised Classification of Extreme Facial Events using Active Appearance Models Tracking for Sign Language Videos. *IEEE International Conference on Image Processing (ICIP'12)*, Orlando, FL, USA, pp. 1409-1412, October 2012.

Thesis

2011 E. Antonakos. *Visual Modeling of Human Face in Real-Time with Applications in Recognition*. Diploma thesis, National Technical University of Athens, School of Electrical and Computer Engineering, July 2011. In greek.

Software

2013–present **Menpo Project**
Open-source (BSD-licensed) library that provides a complete and comprehensive framework for training, fitting, visualizing and testing state-of-the-art 2D and 3D deformable models. Menpo is a powerful and flexible cross-platform (Linux, OS-X, Windows) framework written in Python. Available in http://www.menpo.org/ and on Github (https://github.com/menpo/).

2012 GUI Matlab toolbox for face detection, tracking and facial events detection. It includes implementations of Active Appearance Models, Viola-Jones face detection and skin color detection methods. Available upon request. Demo videos: [link1], [link2]

Teaching Experience and Supervision

2013–present **MSc/MEng students co-supervisor**, *Department of Computing, Imperial College London*, UK.

Co-supervisor of the thesis/final project of the following students:

- Naomi Bassett, MEng 2015-2016
- Joseph Garcia Maegli Juan, MSc 2014-2015
- Maheva Juan, MSc 2014-2015
- Yuan Ye, MSc 2013-2014

2015–2016 **Graduate Teaching Assistant**, *Department of Computing, Imperial College London*, UK.

- *Computational Techniques* (undergraduate course): Lab tutoring, help sessions, coursework design, coursework marking.
- *Machine Learning* (postgraduate course): Coursework marking.

2011–2012 **Graduate Teaching Assistant**, *School of Electrical and Computer Engineering, National Technical University of Athens*, Greece.

- *Computer Vision* (postgraduate and undergraduate course): Lab tutoring, help sessions, coursework design, coursework marking.
- *Digital Signal Processing* (undergraduate course): Lab helper, coursework marking.

Work Experience

Jun 2007–Aug 2007 **Associate Developer Intern**, *Internet Society NGO*, Yerevan, Armenia.
UNIX and C++ applications developer.
IAESTE Student Exchange Programme.

Languages

English **Fluent** *Cambridge Proficiency Certificate (CPE, Grade B), IELTS (score: 7.5)*
French **Good command** *DELF, DALF, Sorbonne I and Sorbonne II*
Greek **Native**

Programming Skills

languages Python, Matlab, C/C++
libraries ipython, scikit-learn, scipy

Citations

Source: Google Scholar
citations 66
h-index 6

References

Available upon request.