

# Epameinondas Antonakos

## Curriculum Vitae

Amazon Development Center  
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🌐 <http://nontas.github.io/>

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### Research Interests

Computer Vision, Robotics, Machine Learning, Deep Learning, Deformable Models

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### Experience

Jun 2018–present **Amazon, Berlin, Germany**  
**Manager, Applied Science.**

*Team:* Manager of the Robotics Team, as part of Amazon Robotics. The team focuses on Robotic Manipulation and Computer Vision.

Feb 2017–Jun 2018 **Amazon, Berlin, Germany**  
**Applied Scientist.**

*Team:* Computer Vision Team as part of the Core Artificial Intelligence (CoreAI) organization.

Oct 2012–Jan 2017 **Imperial College London, UK**  
**Graduate Research Assistant.**

*Group:* Intelligent Behaviour Understanding Group (iBUG)

*Projects:* 4D-FAB: Automatic analysis of facial behaviour in 4D (EPSRC)

*Worked on 2D and 3D bespoke deformable facial models.*

*TeSLA: An Adaptive Trust-based e-assessment System for Learning (EU)*

*Development of face deformable tracking and verification for an e-assessment platform.*

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)

*Research on unsupervised classification of facial events for sign language recognition.*

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### Education

2013–2017 **Imperial College London, UK**  
**Ph.D. in Computing.**

*Topic:* Robust Statistical Deformable Models

*Description:* 2D and 3D Deformable Models in-the-wild, with focus on the development of powerful generative models and methodologies for their unsupervised training.

*Advisor:* Dr. Stefanos Zafeiriou

*Examiners:* Prof. Lourdes Agapito, Dr. Stefan Leutenegger

2004–2011 **National Technical University of Athens, Greece**  
**Diploma/M.Eng. in Electrical and Computer Engineering.**

*Course flows:* (i) Signals, Automatic Control and Robotics, (ii) Computer Software, (iii) Computational Systems, (iv) Electronics, Circuits and Materials

*Diploma thesis:* Visual Modeling of Human Face in Real-Time with Applications in Recognition

*Advisor:* Prof. Petros Maragos

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## Teaching Experience

- 2013–2017 **MSc students supervisor**, *Department of Computing, Imperial College London, UK.*
- 2015–2016 **Teaching Assistant**, *Department of Computing, Imperial College London, UK.*
- *Computational Techniques* (undergraduate course): Lab tutoring, coursework marking.
  - *Machine Learning* (postgraduate course): Coursework marking.
- 2011–2012 **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 and marking.
  - *Digital Signal Processing* (undergraduate course): Lab helper, coursework marking.

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## Software

- 2013–present **Menpo Project**
- Python open-source (BSD-licensed) ecosystem that provides end-to-end solution for 2D and 3D deformable modeling. It includes training and fitting code for state-of-the-art deformable models, generic object detection, interactive visualization widgets and a web-based tool for annotation of bulk data. The Menpo Project is 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: [\[link1\]](#), [\[link2\]](#)

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## Awards and Distinctions

- 2016 Selected to participate in the first Google Computer Vision PhD Summit 2016.
- 2016 Selected in the finalist stage of the Qualcomm Innovation Fellowship Europe 2016.
- 2015 Selected by Imperial College London as the only Ph.D. candidate to be supported for the Google European Doctoral Fellowship 2015.
- 2014 10% best paper award in IEEE International Conference on Image Processing 2014.

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## Languages

English	<b>Fluent</b>	<i>Cambridge Proficiency Certificate (CPE, Grade B), IELTS (score: 7.5)</i>
French	<b>Good command</b>	<i>DELFT, DALF, Sorbonne I and Sorbonne II</i>
Greek	<b>Native</b>	

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## Programming Skills

Github profile: <https://github.com/nontas/>

languages Python, C/C++, Matlab

libraries tensorflow, mxnet, scikit-learn, scipy, ipython, git

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## Citations

Source: Google Scholar

citations 579

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## Publications

### Refereed Journal Articles

- 2018 J. Booth, A. Roussos, E. Ververas, E. Antonakos, S. Poumpis, Y. Panagakis, and S. Zafeiriou. 3D Reconstruction of “In-the-Wild” Faces in Images and Videos. *IEEE Transactions on Pattern Analysis and Machine Intelligence (T-PAMI)* (impact factor 2018: 9.455), 2018.
- 2018 G. Chrysos, E. Antonakos, and S. Zafeiriou. IPST: Incremental Pictorial Structures for Model-Free Tracking of Deformable Objects. *IEEE Transactions on Image Processing (T-IP)* (impact factor 2018: 4.828), 27(7): pp. 3529-3540, July 2018.
- 2017 G. Chrysos, E. Antonakos, P. Snape, A. Asthana, and S. Zafeiriou. A Comprehensive Performance Evaluation of Deformable Face Tracking “In-the-Wild”. *International Journal of Computer Vision (IJCV)* (impact factor 2017: 8.222), pp. 1-35, 2017.
- 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), 47: pp. 3-18, 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

- 2017 J. Booth, E. Antonakos, S. Ploumpis, G. Trigeorgis, Y. Panagakis, and S. Zafeiriou. 3D Face Morphable Models “In-the-Wild”. In *IEEE International Conference on Computer Vision and Pattern Recognition (CVPR’17)* (8% acceptance rate), Honolulu, HI, USA, Spotlight, July 2017.
- 2017 R. A. Güler, G. Trigeorgis, E. Antonakos, P. Snape, S. Zafeiriou, and I. Kokkinos. DenseReg: Fully Convolutional Dense Shape Regression In-the-Wild. In *IEEE International Conference on Computer Vision and Pattern Recognition (CVPR’17)* (29% acceptance rate), Honolulu, HI, USA, July 2017.
- 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. (\*Joint first authorship). 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

- 2016 E. Antonakos\*, P. Snape\*, G. Trigeorgis, and S. Zafeiriou. (\*Joint first authorship). Adaptive Cascaded Regression. In *IEEE International Conference on Image Processing (ICIP'16)*, Phoenix, AZ, USA, *Oral*, September 2016.
- 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\*. (\*Joint first authorship). 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.

#### Other Publications

- 2016 J. Alabort-i-Medina\*, E. Antonakos\*, J. Booth\*, P. Snape\*, and S. Zafeiriou. (\*Joint first authorship). The Menpo Project. In *ACM SIGMM Records*, 8(2), June 2016. <http://records.mlab.no/2016/04/28/the-menpo-project/>.

#### Theses

- 2017 E. Antonakos. *Robust Statistical Deformable Models*. Ph.D. thesis, Department of Computing, Imperial College London, March 2017.
- 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.

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## References

*Available upon request.*