Stylianos Ploumpis
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Research Objectives-Interests

- 3D Computer Vision, Machine Learning, 3D Morphable Models, Deep Learning, Graphics

Education

- **Imperial College London** — London, UK
  PhD in Computer Science, Department of Computing — *Jul 2017 - Jul 2021*
  - Thesis title: "3D Morphable Models and Beyond: Algorithms and Applications"
- **Imperial College London** — London, UK
  MSc in Machine Learning, Department of Computing — *Oct 2015 - Sept 2016*
  - Dynamical Systems and Deep Learning
  - Intelligent Data and Probabilistic Inference
  - Computational Neurodynamics
  - Advanced Statistical Machine Learning and Pattern Recognition
  - Computational Finance
  - Thesis title: "Multi-view 3D reconstruction and tracking of non-rigid and deformable surfaces based on depth sensor information "
- **Democritus University of Thrace** — Xanhti, Thrace
  MEng in Production Engineering and Management — *Oct 2008 - Sept 2013*
  - 5 year MEng of Engineering ('Diploma')
  - GPA 8.63 on a scale of 10 (first in class)
  - Diploma thesis title: "Design and control of a flying robotic platform based on inertial navigation and machine vision information"

Research Experience

- **Huawei Technologies co. Ltd** — London, UK
  Senior Research Scientist — *June 2020 - Present*
  - Computer Vision Team at R&D Department in Consumer Business Group (CBG)
- **Microsoft Corporation** — Redmond, WA
  Research Intern — *August 2019 - October 2019*
  - AI Perception and Mixed Reality Platform Team.
- **FaceSoft Ltd.** — London, UK
  Computer Vision Scientist — *April 2018 - July 2019*
  - Computer Vision/Graphics Scientist specialising in 3D Morphable Models and Machine Learning.
- **Intelligent Behaviour Understanding Group (iBUG), Imperial College London** — London, UK
  Research Assistant — *Sept 2016 - Jul 2017*
  - Build the first existing database for the evaluation of 3DMMs in the wild.
  - Applied sensor fusion techniques to 3D reconstruct faces in the wild.
  - TeSLA project contributor for an Adaptive Trust-based e-assessment System for Learning
- **Laboratory of Robotics and Automation, DUTH** — Xanthi, Thrace
  External Researcher on ViPED project — *Jun 2015 - Sept 2015*
  - Trained cascade classifiers with HAAR and HOG features for car detection.
  - Applied modern tracking techniques such as CMT and TLD for multiple car tracking in video streams.
  - Implemented a car lisence plate detection algorithm based on cascade classification and morphology transforms.
  - Worked on stereo vision algorithms for robotic applications and object detection techniques based on feature matching. (ORB descriptor)

Awards and Honors

- Scholarship awarded by the Fulbright foundation in Greece for graduate studies in the in the United States. (Declined: continued graduate studies in the EU) (2015)
- Scholarship awarded by the Greek State Scholarships Foundation (I.K.Y) for ranking first in the Department with an annual GPA of 9.17 out of 10 (2011-2012)
- State Award for being among the first 25% of students entered the Department of Production Engineering and Management (2008)

Publications

- **S.Ploumpis**, A.Amanatiadis, A.Gasteratos. A stereo matching approach based on particle filters and scattered control landmarks. *Image and Vision Computing (2015) pp. 13-23.*
- J.Booth, E.Antonakos, **S.Ploumpis**, G.Trigeorgis, Y.Panagakis and S.Zafeiriou. 3D Face Morphable Models "In-the-Wild". ***CVPR*** *July 2017.*
- J.Booth, A.Roussos, E.Ververas, E.Antonakos, **S.Ploumpis**, Y.Panagakis and S.Zafeiriou. 3D Reconstruction of" In-the-Wild" Faces in Images and Videos, ***TPAMI*** *July 2018.*
- S.Moschoglou **S.Ploumpis**, M.Nicolaou, and S.Zafeiriou. Multi-Attribute Probabilistic Linear Discriminant Analysis for 3D Facial Shapes, ***ACCV*** *Dec 2018.*
- A.Amanatiadis, E.Karakasis, L.Bampis, **S.Ploumpis**, and A.Gasteratos. ViPED: On-road Vehicle Passenger Detection with Monocular Vision, *Robotics and Autonomous Systems (2019) pp. 282-290.*
- **S.Ploumpis**, H.Wang, N.Peers, W.Smith and S.Zafeiriou. Combining 3D Morphable Models: A Largescale Face-and-Head Model, ***CVPR*** *June 2019* ***(Oral)***
- B.Gecer, **S.Ploumpis**, and S.Zafeiriou, GANFIT: Generative Adversarial Network Fitting for High Fidelity 3D Face Reconstruction, ***CVPR*** *June 2019*
- G.Bouritsas, S.Bokhnyak, **S.Ploumpis**, S.Zafeiriou and M.Bronstein, Neural 3D Morphable Models: Spiral Convolutional Networks for 3D Shape Representation Learning and Generation, ***ICCV*** *2019*
- S.Moschoglou*, **S.Ploumpis***, M. Nicolaou and S.Zafeiriou, 3DFaceGAN: Adversarial Nets for 3D Face Representation, Generation, and Translation, ***IJCV*** *March 2020*
- **S.Ploumpis**, E.Ververas, E.Sullivan, S.Moschoglou, H.Wang, N.Peers, W.Smith and S.Zafeiriou. Towards a complete 3D morphable model of the human head, ***TPAMI*** *March 2020*
- A.Lattas, S.Moschoglou, B.Gecer, **S.Ploumpis**, V.Triantafyllou, A.Ghosh and S.Zafeiriou, AvatarMe: Realistically Renderable 3D Facial Reconstruction, ***CVPR*** *June 2020*
- RA.Potamias, J.Zheng, **S.Ploumpis**, G.Bouritsas, E.Ververas and S.Zafeiriou, Learning to Generate Customized Dynamic 3D Facial Expressions, ***ECCV*** *Aug 2020*
- B.Gecer, A.Lattas, **S.Ploumpis**, J.Deng, A.Papaioannou, S.Moschoglou and S.Zafeiriou, Synthesizing coupled 3d face modalities by trunk-branch generative adversarial networks, ***ECCV*** *Aug 2020*
- B.Gecer, **S.Ploumpis**, I.Kotsia, S.Zafeiriou, Fast-GANFIT: Generative Adversarial Network for High Fidelity 3D Face Reconstruction, ***TPAMI*** *May 2021*
- A.Lattas, S.Moschoglou, **S.Ploumpis**, B.Gecer, A.Ghosh and S.Zafeiriou, AvatarMe^{++} Facial Shape and BRDF Inference with Photorealistic Rendering-Aware GANs, ***TPAMI*** *Dec 2021*
- **S.Ploumpis***, S.Moschoglou*, V.Triantafyllou and S.Zafeiriou, 3D human tongue reconstruction with adversarial surface generation, ***CVPR*** *June 2022* ***(Oral)***
- RA.Potamias, **S.Ploumpis** and S.Zafeiriou, Neural Mesh Simplification, ***CVPR*** *Jun 2022*
- A.Papaioannou, B.Gecer, S.Moschoglou, **S.Ploumpis** and S.Zafeiriou, MimicME: A Large Scale Diverse 4D Database for Facial Expression Analysis, ***ECCV*** *2022*
- M.Doukas, **S.Ploumpis** and S.Zafeiriou, Dynamic Neural Portraits, *WACV 2023*
- A.Lattas, S.Moschoglou, **S.Ploumpis**, B.Gecer, J.Deng and S.Zafeiriou,FitMe: Deep Photorealistic 3D Morphable Model Avatars, *Submitted to CVPR 2023*
- RA.Potamias, **S.Ploumpis**, S.Moschoglou, V.Triantafyllou and S.Zafeiriou, Handy: Towards a high fidelity 3D hand shape and appearance model, *Submitted to CVPR 2023*

Patents

- **S.Ploumpis** and S.Zafeiriou, Combining three-dimensional Gaussian process morphable models ***GB2582047A*** *Sept 2020*
- **S.Ploumpis** and S.Zafeiriou, Combining three-dimensional morphable models ***GB2582010A*** *Sept 2020*
- S.Moschoglou, **S.Ploumpis** and S.Zafeiriou, Enhancement of three-dimensional facial scans ***GB2581991A*** *Sept 2020*
- A.Lattas, S.Moschoglou, **S.Ploumpis**, S.Zafeiriou, Three-dimensional facial reconstruction ***GB2593441A*** *Sept 2021*
- **S.Ploumpis**, S.Moschoglou, and S.Zafeiriou, 3D tongue reconstruction from single images ***WO202209610*** *May 2022*

Technical Skills

-Languages: Python, Pytorch, Matlab Familiar with: C#, Unity, OpenCV, Basic Linux Programming

Additional Information

- Fluent in English and Greek, Elementary Spanish
- Affiliations: Intelligent Behavior Understanding Group (iBUG) (`https://ibug.doc.ic.ac.uk/`)