Georges Pantalos

Curriculum Vitae

Education

2018–2021 **M.Sc. in Mechanical Engineering**, *ETH Zurich*, 5.44/6 Zurich, CH

- Thesis: *Function Space Transfer of Probability Distributions*, 5.75/6
- Supervisor: Andreas Krause
- Tutor: Petros Koumoutsakos

2015–2018 **B.Sc. in Mechanical Engineering**, *EPF Lausanne*, 4.91/6 Lausanne, CH

- Thesis: *Optical Profilometer with Nanometer Precision*, 5.75/6
- Supervisor: John Kolinski

Employment

2019–2020 **Machine Learning Intern**, *ABB Corporate Research* Zurich, CH

Designed and developed an active learning approach for semiconductor defect detection under the supervision of Marco Bellini which resulted in a publication at IEEE. Additionally, worked on document classification for papers and patents related to the broader field of semiconductors.

Publications

[1] Bellini, Marco, **Georges Pantalos**, Peter Kaspar, Lars Knoll, and Luca De-Michielis. 2021. "An Active Deep Learning Method for the Detection of Defects in Power Semiconductors." In 2021 32nd Annual SEMI Advanced Semiconductor Manufacturing Conference (ASMC), 1–5. https://doi.org/10.1109/ASMC51741.2021.9435657.

[2] Mourdoukoutas, Nikolaos, Marco Federici, **Georges Pantalos**, Mark van der Wilk, and Vincent Fortuin. 2021. "A Bayesian Approach to Invariant Deep Neural Networks." ArXiv:2107.09301 [Cs, Stat], July. http://arxiv.org/abs/2107.09301.

Projects

2021 **Institute for Machine Learning** Zurich, CH

Adversarial learning of a measurement set for evaluation of a function space KL divergence to build implicit priors for Bayesian Neural Networks.

2020 **Toyota Research on Automated Cars in Europe** Zürich, CH

Worked on perception and planning under the supervision of Alex Liniger.

2020 **Computational Science & Engineering Lab**, *Semester Thesis* Zürich, CH

Comparative study on the training methods of recurrent neural networks (RNN) and echo state networks (ESN) for partially observable chaotic systems prediction under the supervision of Petros Koumoutsakos. Grade: 5.75/6.

2019 **Advanced Interactive Technologies Lab** Zürich, CH

Developed a pipeline for monocular pose estimation, 5.96/6

2019 **Autonomous Systems Lab** Zürich, CH

Developed a computer vision pipeline based on Faster RCNN to detect the presence of bats around the windows of the ETH main building by drone imagery. Grade: 5.75/6.

2020 **Co-Founder**, *Food Waste Estimation for European Schools* Brussels, BE

Designed a mass estimation pipeline from multiple monocular images for my former high school with my little brother Alexandros. The goal being to measure and ultimately reduce food waste in European Schools. The inference was done on an NVIDIA Jetson Nano and the cameras and hardware infrastructure based on Raspberry Pi and its accessories.

Teaching Experiences

2016 **Teaching Assistant**, for the *Mechanical Structures* course at the second year of B.Sc. in Mechanical Engineering, at EPFL.

2017 **Teaching Assistant**, for the *Mechanical Systems* course at the third year of B.Sc. in Mechanical Engineering, at EPFL.

Honours & Awards

2011 **2nd Prize Winner**, *Belgian Mathematical Olympiad* Brussels, BE

2013 **3rd Prize Winner**, *Belgian Mathematical Olympiad* Brussels, BE

2013 – 2015 **Finalist**, *Belgian Physics Olympiads* Brussels, BE

Computer skills

- **Programming languages**: Python, C++, Matlab, SQL
- **Frameworks**: Pytorch, Tensorflow

Internships

2016 **Intern**, *Dromeas* Thessaloniki, GR

2013 **Intern**, *Soft-Kinetic (3D Gesture Recognition)* Brussels, BE

Languages

English, French, Greek

Hobbies

Basketball, chess, violin, sailing, windsurfing, scuba-diving, skiing

Referees

- **Andreas Krause**, Master Thesis Supervisor, *krausea@ethz.ch*
- **Petros Koumoutsakos**, Semester Thesis Supervisor, *petros@seas.harvard.edu*
- **Marco Bellini**, Internship Supervisor, *marco_bellini@swissre.com*