

Fabian Fuchs

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Deep Learning PhD student with both technical and entrepreneurial experience.
Interested in research internships at the intersection of deep learning, computer vision and physical reasoning with opportunity of publishing.

Education

09/2017 - 09/2020	University of Oxford PhD in Machine Learning , AIMS CDT
09/2016 - 08/2017	University of Oxford PhD preparation year , (taught modules & lab rotations), AIMS CDT
10/2013 - 06/2016	University of Heidelberg M.Sc. Physics , final grade 1.0 (Top of class)
10/2010 - 08/2013	University of Erlangen-Nuremberg B.Sc. Physics , final grade 1.2 (First-class, top 10%)
09/2012 - 06/2013	Imperial College London (year abroad)

Research Experience

10/2017 - Present	PhD in Machine Learning: Deep Learning, Vision and Physical Reasoning University of Oxford , Prof. Ingmar Posner (A2I, Oxford Robotics Institute) Learning Invariant Representations (Python, Tensorflow, Pytorch)
07/2017 - 09/2017	Project in Machine Learning: Computer Vision for Self-Driving Cars University of Oxford , Prof. Ingmar Posner A deep learning approach to estimating visual odometry from a monocular image sequence (Python, Tensorflow)
04/2017 - 06/2017	Project in Machine Learning: Forecasting the stock market University of Oxford , Prof. Steve Roberts Information extraction from multiple data streams using convolutional deep learning (Python, Keras, Tensorflow)
05/2015 - 05/2016	Master Thesis, Computational Biophysics (C++, Python) University of Heidelberg , Prof. Ulrich Schwarz

Experience in Industry

05/2014 - 09/2016	GalileiConsult e.V. , Heidelberg Project leader at a student consultancy
05/2015 - 07/2015	Roadvertising GbR , Heidelberg Co-founder of a start-up for digital advertising on trucks, now worth €3m
02/2015 - 04/2015	Bain & Company , Internship in Consulting, Munich Project in financial services including an efficiency analysis for retail banks with Visual Basic
11/2014 - 01/2015	Siemens Management Consulting , Internship in Consulting, Munich
08/2013 - 10/2013	Simon Kucher & Partners , Internship in Consulting, Cologne

Skills

Programming Experience	Proficient in Python; Exposure to C++, Java, C, Matlab, Visual Basic	Languages	German (native) English (fluent) French (basic)
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Scholarships, Awards, and further Activities

06/2016	Best thesis award in Theoretical Physics at the University of Heidelberg
2012 - 2013	National Scholarship for outstanding achievements www.deutschlandstipendium.de
Further Interests:	Rock climbing, beach volleyball, board games

Publications

- 2019 [End-to-end Recurrent Multi-Object Tracking and Trajectory Prediction with Relational Reasoning](#)
Fabian B. Fuchs, Adam R. Kosioriek, Li Sun, Oiwi Parker Jones, Ingmar Posner
ArXiv Preprint, 2019.
- 2019 Blog Post "[DeepSets: Modeling Permutation Invariance](#)"
Fabian Fuchs, Ed Wagstaff, and Martin Engelcke
Guest Blog Post on inference.vc, 2019
- 2019 [On the Limitations of Representing Functions on Sets](#)
*Ed Wagstaff *, Fabian B. Fuchs *, Martin Engelcke *, Ingmar Posner, Michael Osborne*
Published at ICML, 2019
- 2019 [Neural Stethoscopes: Unifying Analytic, Auxiliary and Adversarial Network Probing](#)
Fabian B. Fuchs, Oliver Groth, Adam R. Kosioriek, Alex Bewley, Markus Wulfmeier, Andrea Vedaldi, Ingmar Posner
Published at BMVC, 2019
- 2018 [Neural Stethoscopes: Unifying Analytic, Auxiliary and Adversarial Network Probing](#)
Fabian B. Fuchs, Oliver Groth, Adam R. Kosioriek, Alex Bewley, Markus Wulfmeier, Andrea Vedaldi, Ingmar Posner
Published at NeurIPS 'Modeling the Physical World' Workshop, 2019
- 2018 [ShapeStacks: Learning Vision-Based Physical Intuition for Generalised Object Stacking](#)
Oliver Groth, Fabian B. Fuchs, Ingmar Posner, Andrea Vedaldi
Published at ECCV, 2018
- 2013 [Unidirectional Side Scattering of Light by a Single-Element Nanoantenna](#)
Dries Vercautse, Yannick Sonnefraud, Niels Verellen, Fabian B. Fuchs, Giuliana Di Martino, Liesbet Lagae, Victor V. Moshchalkov, Stefan A. Maier, Pol Van Dorpe
Published in Nano Letters, 2013 (13)