

Education

DPHil in Information Engineering

Advisors: Ingmar Posner, Yee Whye Teh
Thesis: *"Learning Object-Centric Representations"*
Google Deepmind Scholarship

University of Oxford

10.2016 - 01.2020

M.Sc. in Computational Science & Engineering

Advisor: Patrick van der Smagt
Thesis: *"Representation Learning for Arm Movement Data"*
GPA: 1.2 (1.0 is the highest possible)

Technical University of Munich

10.2014 - 09.2016

B.Sc. in Robotics

Advisor: Barbara Siemiątkowska
Thesis: *"3D Point Cloud Classification with the Bag of Words method"*
Summa Cum Laude GPA: 4.75/5.0

Warsaw University of Technology

10.2010 - 02.2014

Experience

Research Scientist

Machine Learning research in Danilo J. Rezende's team

Google Deepmind, London

since 01.2020

Research Intern

Research on Capsule Networks advised by Geoffrey E. Hinton

Google Brain, Toronto

03.2019 - 06.2019

Research Intern

Research on Generative Models advised by Danilo J. Rezende

Google Deepmind, London

06.2018 - 10.2018

Research Assistant

Projects in High Performance Computing with Nils Zander & Tino Bog
and Semantic SLAM for Oculus RIFT advised by Federico Tombari

Technical University of Munich

11.2014 - 09.2016

Software Engineering Intern

Implementation of a framework for anomaly detection in financial data

Bloomberg, London

07.2015 - 10.2015

Research Engineer

Research on bag of words & deep learning for image classification

Samsung Electronics, Warsaw

06.2013 - 07.2014

Junior Software Engineer

Web service development in Java EE

IBM, Warsaw

01.2013 - 06.2013

Photographer

Documenting day-to-day events for a local newspaper

Edytor sp. z.o.o., Olsztyn

05.2010 - 09.2010

Honors and Awards

Google DeepMind PhD Scholarship	2016 - 2019
DAAD Scholarship for Master Studies in Germany	2014 - 2016
University President Scholarship for Academic Achievements	2010 - 2013
Highest GPA from all 1 st , 2 nd and 3 rd year undergraduate students	2010 - 2013

Pre-Prints / Under Review

Jin Xu, Jean-Francois Ton, Hyunjik Kim, **Adam R. Kosiorek**, Jonathan Schwarz, Yee Whye Teh, "Meta Learning in Function Space", under review, 2019.

Fabian B. Fuchs, **Adam R. Kosiorek**, Li Sun, Oiwi Parker Jones and Ingmar Posner, "End-to-end Recurrent Multi-Object Tracking and Trajectory Prediction with Relational Reasoning", *arXiv:1907.12887*, CoRR, 2019.

Peer-Reviewed Conference Papers

- [8] Martin Engelcke, **Adam R. Kosiorek**, Parker Jones Oiwi, and Ingmar Posner. "GENESIS: Generative Scene Inference and Sampling with Object-Centric Latent Representations". In: *International Conference on Learning Representations*. 2020.
- [7] **Adam R. Kosiorek**, Sara Sabour, Yee Whye Teh, and Geoffrey E. Hinton. "Stacked Capsule Autoencoders". In: *Advances in Neural Information Processing Systems*. 2019.
- [6] Fabian B Fuchs, Oliver Groth, **Adam R. Kosiorek**, Alex Bewley, Markus Wulfmeier, Andrea Vedaldi, and Ingmar Posner. "Scrutinizing and De-Biasing Intuitive Physics with Neural Stethoscopes". In: *British Machine Vision Conference*. 2019.
- [5] Tuan Anh Le*, **Adam R. Kosiorek***, N. Siddharth, Yee Whye Teh, and Frank Wood. "Revisiting Reweighted Wake-Sleep". In: *Uncertainty in Artificial Intelligence*. 2019.
- [4] Juho Lee, Yoonho Lee, Jungtaek Kim, **Adam R. Kosiorek**, Seungjin Choi, and Yee Whye Teh. "Set Transformer: A Framework for Attention-based Permutation-Invariant Neural Networks". In: *International Conference on Machine Learning*. 2019.
- [3] **Adam R. Kosiorek**, Hyunjik Kim, Ingmar Posner, and Yee Whye Teh. "Sequential Attend, Infer, Repeat: Generative Modelling of Moving Objects". In: *Advances in Neural Information Processing Systems*. 2018.
- [2] Tom Rainforth, **Adam R. Kosiorek**, Tuan Anh Le, Chris J. Maddison, Maximilian Igl, Frank Wood, and Yee Whye Teh. "Tighter Variational Bounds are Not Necessarily Better". In: *International Conference on Machine Learning*. 2018.

[1] **Adam R. Kosiosek**, Alex Bewley, and Ingmar Posner. "Hierarchical Attentive Recurrent Tracking". In: *Advances in Neural Information Processing Systems*. 2017.

* equal contribution

Peer-Reviewed Workshop Papers

Fabian B. Fuchs, **Adam R. Kosiosek**, Li Sun, Oivi Parker Jones, Ingmar Posner, "Permutation Invariance and Relational Reasoning in Multi-Object Tracking". *NeurIPS Sets & Partitions Workshop*, 2019.

Neil Dhir*, **Adam R. Kosiosek*** and Ingmar Posner, "Bayesian Delay Embeddings for Dynamical Systems". *NIPS Timeseries Workshop*, 2017.

Invited Talks

Attention Mechanisms: Knowing Where to Look Improves Visual Reasoning
Graphcore, Bristol, January 2019.

Attention Mechanisms: Knowing Where to Look Improves Visual Reasoning
ReWork Deep Learning Summit, London, September 2018.

Introduction to Variational Autoencoders
OxWASP lecture on machine learning, Oxford, March 2018.

Introduction to Neural Networks
Machine Learning Meetup @ Stylight, Munich, February 2015.

Research Mentoring

Current: Fabian Fuchs (Ph.D.)

Paper Reviewing

Advances in Neural Information Processing Systems (NIPS) 2018, 2019

International Conference on Representation Learning (ICLR) 2018

IEEE Transactions on Image Processing (TIP) 2018

Conference on Robot Learning (CoRL) 2017

Side Projects

Forge

A lightweight tool for managing ML experiments.

github.com/akosiosek/forge

2018 - present

Research Blog

Explanations of new and old ideas in Machine Learning

akosiosek.github.io

2017 - present

