

Johannes Rieke

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📍 Berlin, Germany

Experience

Master Thesis — ETH Zürich, Institute of Neuroinformatics

Apr 2019 - Feb 2020

Implemented evolutionary and learning algorithms from scratch, using PyTorch, to investigate how both interact in neural networks. Ran large-scale, parallelized experiments on AWS.

Research Intern — University of Amsterdam, Max Welling's lab

Mar 2018 - Apr 2018

Developed an improved version of Graph Convolutional Networks (a novel class of neural networks that operate on graph data) and implemented this model in PyTorch.

Research Intern — Charité, Berlin Center for Advanced Neuroimaging

Dec 2017 - Feb 2018

Trained convolutional networks to detect Alzheimer's disease from medical images. Investigated several visualization methods and presented a workshop paper at MICCAI 2018 (see below).

Machine Learning Engineer (Working Student) — SAP SE, Berlin

Dec 2016 - Feb 2018

Research on deep learning, natural language understanding, and graphs. Implemented machine learning models for internal products (e.g. word/graph embeddings, text classification with neural networks, question answering).

Bachelor Thesis — University College London, Angus Silver's lab

Oct 2015 - Jan 2016

Investigated a biophysically realistic model of a nerve cell via simulation and dynamical systems analysis.

Google Summer of Code Student — OpenWorm

May 2014 - Aug 2014

Developed a Python package to convert data from neuronal simulators (NEURON and Brian) and write it to HDF5 files.

Voluntary Ecological Year — Bavarian Center for Applied Energy Research

Sep 2011 - Jul 2012

Conducted measurements to characterize novel nanomaterials. Implemented a data analysis software in C++.

Publications

Rieke, J. / Eitel, F. / Weygandt, M. / Haynes, J.-D. / Ritter, K. (2018): **Visualizing Convolutional Networks for MRI-based Diagnosis of Alzheimer's Disease.**

MICCAI Workshop on Machine Learning in Clinical Neuroimaging.

<https://arxiv.org/abs/1808.02874>

Education

M. Sc. Computational Neuroscience

Technical University Berlin & Bernstein Center for Computational Neuroscience Berlin

Oct 2016 - Mar 2020

Scholarship: Max Weber Program of the State of Bavaria

Final grade: 1.4

B. Sc. Physics

University of Erlangen-Nuremberg

Oct 2012 - Mar 2016

Part of the international study program "Physics Advanced"

Semester abroad at UC San Diego

Final grade: 1.5

Skills

- **Coding:** Python (7y), Java (2y), JavaScript, C++, HTML/CSS
- **Machine Learning:** PyTorch (3y), Keras, TensorFlow, scikit-learn
- **Scientific Computing:** NumPy, SciPy, Matplotlib, Pandas, streamlit
- **Tech:** Git, AWS, Docker
- **Languages:** English, German

Other Courses

- PAISS Summer School 2018
- Deep Learning for NLP (Stanford)
- Deep Learning (Oxford)
- Synapses, Neurons, Brains (Coursera)

Voluntary

Former organizer of the meetup „Deep Learning Berlin“

Conferences

- MICCAI 2018
- EMNLP 2017
- NeurIPS 2016
- Neuroinformatics 2014