

# 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.

### 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

### B. Sc. Physics

University of Erlangen-Nuremberg

*Oct 2012 - Mar 2016*

Initial studies at University of Würzburg (2012-2014), semester abroad at UC San Diego (2015)  
Final grade: 1.5

## Skills

- **Coding:** Python (●●●), Java (●●○), JavaScript (●●○), C++ (●○○), HTML/CSS (●○○)
- **Machine Learning:** PyTorch, keras, TensorFlow, scikit-learn, streamlit
- **Scientific Computing:** NumPy, SciPy, Matplotlib, Pandas, Jupyter
- **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“ (1k members)

## Conferences

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