

# Jamie Lohoff

## Curriculum Vitae

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Date of birth: 03/11/1996

### About me

I like building cool and innovative things using ideas from AI, Physics, Mathematics and Biology. The word *impossible* is crossed out in my dictionary.

### Professional Experience

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| <b>Cold Spring Harbor Laboratory, NY - NeuroAI Researcher</b>  | 2024 – now  |
| <ul style="list-style-type: none"><li>• Investigated bio-inspired compression techniques for Large Language Models</li><li>• Analyzed language representations and their transfer across languages</li><li>• Developed package for efficient, parallel hypernetwork training in PyTorch</li></ul>                            |             |
| <b>Jülich Research Center - PhD Researcher</b>   | 2022 – now  |
| <ul style="list-style-type: none"><li>• Discovered novel autodiff algorithms that outperform backpropagation using Deep RL</li><li>• Implementing various Deep Learning algorithms on neuromorphic hardware</li><li>• Developed packages for spiking neural network training, sparse autodiff and algorithm search</li></ul> |             |
| <b>Heidelberg University - Research Engineer</b>   | 2020 – 2021 |
| <ul style="list-style-type: none"><li>• Improved U-Net-based semantic segmentation with topological methods</li><li>• Developed pipeline for persistent homology in PyTorch</li><li>• Segmented Drosophila brain imaging data with said pipeline</li></ul>   |             |
| <b>Robert Bosch GmbH - DevOps Engineer Big Data &amp; AI</b>   | 2018 – 2019 |
| <ul style="list-style-type: none"><li>• Contributed to various AI-driven Bosch products, e.g. autonomous driving</li><li>• Improved internal ML &amp; AI infrastructure through containerization with Docker</li><li>• Implemented large-scale CV training pipelines on GPU clusters</li></ul>                               |             |

### Academics

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| <b>PhD Electrical Engineering, RWTH Aachen</b>                                     | 2022 – now  |
| Supervisor: Prof. Dr. Emre Neftci, Thesis Title: TBD                               |             |
| <b>MSc Physics, Heidelberg University</b>  | 2019 – 2022 |
| Final Grade: 1.2, Thesis Title: <i>Applications of Neural ODEs in Astrophysics</i> |             |
| <b>BSc Physics, University of Stuttgart</b>  | 2014 – 2018 |
| Final Grade: 1.9   |             |

### Publications

- J. Lohoff, E. Neftci. **Optimizing Automatic Differentiation with Deep Reinforcement Learning.** *Proceedings of NeurIPS 2024, Spotlight Paper.*
- J. Lohoff, J. Finkbeiner, Z. Yu, A. Kaya, K. Steward, H. Lui, E. Neftci. **Interfacing Neuromorphic Hardware with Machine Learning Frameworks - A Review.** *Proceedings of ICONS*, p. 1-8, 2023.
- J. Lohoff, J. Finkbeiner, E. Neftci. **SNNAX - Spiking Neural Network Training in JAX.** *Proceedings of ICONS*, p. 23-27, 2024.

### Awards

- NeurIPS 2024 Spotlight Paper  
CSHL NeuroAI Summer Scholarship Award (\$ 20,000)

### Outreach

- 🐙 **GitHub:** [github.com/jamielohoff](https://github.com/jamielohoff)  
🌐 **Personal Website:** [jamielohoff.github.io](https://jamielohoff.github.io)  
in **LinkedIn:** [linkedin.com/in/jamiegrieser](https://linkedin.com/in/jamiegrieser)