

# Jan-Philipp von Bassewitz

Currently based in Cambridge, MA

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Master's student in Data Science at ETH Zurich, set to graduate at the end of 2023 with research experience at Harvard. Specialized in Deep Learning, and Reinforcement Learning, with proficiency in Python and PyTorch. Seeking a Machine Learning Engineer role starting in 2024 to contribute my skills to advancing AI technologies.

## PROFESSIONAL EXPERIENCE

### Harvard University: Research Intern

Mar 2023 - Dec 2023

- Merged ideas of computer vision (FCN) and multi-agent RL to offset numerical errors without needing to backpropagate through numerical solver
- Read, implemented and adapted recent academic RL and CV literature (*VRACER*, *PixieRL*)
- Enhanced existing implementations of PPO and A2C by inheriting from *Tianshou* (RL-library)
- Familiar with shared cluster environment and running experiments remotely on GPUs
- Profiled code running locally and on cluster to identify and rectify bottlenecks

### ETH Environmental Robotics Lab: Research Assistant [\[Link\]](#)

Mar 2022 - June 2022

- Worked on research project from start to finish: From brainstorming solutions to writing paper
- Researched depth estimation solutions to infer occluded tree branches from RGB-D imagery
- Gained experience with training on synthetic data and transitioning to real-world applications
- Spearheaded idea & implementation of sim2real domain adaption of the training data that lead to possible inference on real world data and publishable results
- Demonstrated robust software engineering practices by working on code with 4 researchers

### ETH Zurich: Teaching Assistant

Jun 2019 – Jul 2021

- Taught *Linear Algebra I + II*, *Mechanics II*, *Technical Drawing and CAD*
- Honed communication skills by explaining technical ideas clearly in front of up to 50 students
- Produced weekly teaching videos during lockdown that were viewed by 200+ students

## EDUCATION

### ETH Zurich: M.Sc. Data Science

2021 - Dec 2023

- Ranking in the **top 15%** with average grade of **5.3/6**
- Completed courses: NLP, Advanced ML, Fundamentals of Mathematical Statistics, Big Data, Machine Perception, Probabilistic AI, Optimization for ML, Information Theory
- Gained experience with big data technologies like *HDFS*, *MapReduce*, *Spark*, *HBase*, *S3*

### ETH Zurich: B.Sc. Mechanical Engineering

2018 – 2021

- Graduated in the **top 2%** with an average grade of **5.57/6**
- Focused electives on applied mathematics and robotics
- Won **first place** out of 60 in *Innovation Project 2019: Product Owner* in agile competition

## TECHNICAL PROJECTS

### Personal Project [\[Link\]](#): Automatic differentiation framework

- Allows gradient descent on arbitrary math expressions using dynamic computation graph
- Learned and implemented “under the hood” principles of PyTorch

### Datathon: AI Hackathon at ETH

- Tackled AWS computer vision challenge of classifying items in warehouse boxes using CNN

### Bachelor's Thesis [\[Link\]](#): CSElab, ETH Zurich

- Applied Neural ODEs to learn partially and fully observed system dynamics (PyTorch)
- Completed with final grade **6/6**

## SKILLS

**Tools:** Python, Git, C++, SQL, Matlab, LaTeX, Jupyter Notebooks, Bash

**Libraries:** PyTorch, NumPy, Scikit-learn, Matplotlib, pandas, SciPy, XGBoost, gymnasium, Tianshou

**Languages:** German (native), English (C1), French (B1)

**Theory:** Deep Learning, Linear Algebra, Reinforcement Learning, Machine Learning, NLP, Probability and Statistics, Computational Science

## AWARDS

**Scholarship holder, Studienstiftung**, Germany's most prestigious scholarship foundation

**Advanced English for academic purposes C1-C2 - final grade 6/6**, University of Zurich, Jun 2020

**DPG Abiturpreis:** Award of the *German Physical Society* for special achievements in physics

## PERSONAL INTERESTS

Sport and fitness, reading (favorite book: *The Royal Game* by Stefan Zweig), art (painting and sketching), backpacking (6-month work and travel in New Zealand after school), meditation

