

KILIAN HAEFELI

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[LinkedIn](#) ♦ [Github](#) ♦ [Google Scholar](#) ♦ [Personal Website](#)

EXPERIENCE

LLM Engineering (Working Student)

Oct. 2023 - Jan. 2024

AlephAlpha

Heidelberg, DE

- Building customer solutions on top of pre-trained large language models implementing and developing methods for prompt-engineering, fine-tuning and retrieval-augmented generation and fine-tuning.
- **Stack:** Python, FastAPI, Hugging Face, Docker, Vector Databases (Qdrant)

Junior Data Scientist

May - Sep. 2022

Logitech

Zurich, CH

- Developed **convolutional deep neural networks** and **LSTM**'s predicting occupancy using stereo-vision cameras and a CO2 time-series, increasing accuracy by 10%.
- **Stack:** Python, NumPy, PyTorch, Lightning.

Junior Developer and Co-Founder

May 2020 - May 2022

Airica (formerly eden-senses)

Zurich, ZH

- Co-founded Airica as part of the technical team, which was successfully sold to Logitech.
- Everything from prototyping, data collection and analysis, and embedded programming to sales and product innovation.
- **Stack:** Python, Bash, C++, Numpy, Scipy, Tableau, PostgreSQL, Node-RED

EDUCATION

Graduate Student (Exchange), University of Toronto

Jan. 2024 - April 2024

- **Coursework:** Accepted for: Statistical Learning Theory, Information Theory, and Parallel Systems

Master Machine Learning and Signal Processing, ETH Zurich

2022 - 2025

- **Coursework:** Advanced Machine Learning, Machine Perception, Optimization (Linear, Combinatorial, Convex), Distributed Algorithms, LLMs, Reliable and Trustworthy AI, Probabilistic AI, Mathematics for Data Science
- **Average Grade:** 5.9/6 (**< 2%**)

Bachelor of Electrical Engineering and Information Technology, ETH Zurich

2019 - 2022

- **Coursework:** Notably courses on Estimation Theory, Signal Theory, Automata Theory,
- **Average Grade:** 5.62/6

RESEARCH

Neural Representation Learning for Temporal Free Floating Boundary Problems

Feb. - July 2023

ETH Zurich and Swiss Data Science Center

- Developed an efficient neural representation model to predict the temporal phase boundaries in 3D printing. Used local convexity and using **Graph Neural Networks** to reduce the model space and induce a smoothing prior.
- **Stack:** Python, PyTorch Lightning, Poetry, Weights & Biases
- **Supervisor:** PhD Nathanaël Perraudin, PhD Karolis Martinkus & Prof. Roger Wattenhofer

Diffusion Models for Graphs Benefit From Discrete State Spaces

Feb. - Sept. 2022

- Developed a **Diffusion Model (DDPM)** for Graphs using Bernoulli perturbations as my Bachelors Thesis.
- Published at the NeurIPS GLFrontiers workshop (**oral**) and the Learning on Graphs Conference [Arxiv](#).
- **Stack:** Python, PyTorch, C++, Networkx, Weights & Biases
- **Supervisor:** PhD Nathanaël Perraudin, PhD Karolis Martinkus & Prof. Roger Wattenhofer

PROJECTS

Starthack 2021, helloMercedes

- Won the Mercedes Competition for extending a headset with Bluetooth triangulation and an Alexa Voice Assistant who is capable of simple question answering related to the products. <https://ethsg.ethz.ch/2022/09/20/starthack-21/>