

KILIAN HAEFELI

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

EDUCATION

Graduate Student (Exchange), University of Toronto

Jan. 2024 - April 2024

- **Coursework:** Classes in Information Theory, Cloud Computing, Machine Learning and **Deep Learning**

Master Machine Learning and Signal Processing, ETH Zurich

2022 - 2025

- **Coursework:** Machine Learning, Graph Learning, **Generative Models**, Perception, Optimization, Distributed Algos
- **Average Grade:** 5.9/6

Bachelor of Electrical Engineering and Information Technology, ETH Zurich

2019 - 2022

- Bachelors Thesis in Diffusion Models for Graphs (6/6 and **published** as an **oral** at **NeurIPS GLFrontiers** [Arxiv](#)).
- Average Grade: 5.62/6 - **top 5%**

RESEARCH

Neural Representation Learning for Temporal Free Floating Boundary Problems

Feb. - July 2023

ETH Zurich and Swiss Data Science Center

- Developed a 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

EXPERIENCE

LLM Engineering (Working Student)

Oct. 2023 - Jan. 2024

AlephAlpha

Heidelberg, DE

- Building customer solutions on top of pretrained large language models using the recent methods for prompt engineering, fine-tuning, building retrieval-based systems, and evaluating model performance.
- **Stack:** Python, Bash, Docker

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, SciPy), SQL, Bash.

Junior Developer and Co-Founder

May 2020 - May 2022

Airica (formerly eden-senses)

Zurich, ZH

- Co founded the Startup eden-senses (later named Airica) and later made a successful exit to Logitech.
- Everything from backend prototyping, machine learning and embedded programming to sales and administrative tasks.
- **Stack:** Python, AWS, Bash, C++, Tableau, PostgreSQL, Node-RED

PROJECTS

Large Language Models for Vacation Planning

- A GPT-based Web App that plans your holiday based on your personality and various circumstances. I am combining fine-tuned models in combination with vector databases like PineCone to embed real-time data.

Advanced Machine Learning Course Project

- Placed **1st & 5th** out of over 300 students in two Kaggle-Style course projects incorporating feature selection, outlier detection, boosting, LSTMs and Spectral Convolutions