

BENJAMIN HOFFMAN

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EDUCATION

ETH ZURICH PhD Student in the Networked Systems Group (NSG) ‣ Focus on machine learning and control — Supervised by Prof. Laurent Vanbever	Zurich, Switzerland Feb. 2025 - present
ETH ZURICH MSc ETH in Robotics, Systems and Control — GPA: 5.7/6.0 ‣ Focus on machine learning and control	Zurich, Switzerland Sep. 2022 - Dec. 2024
LUND UNIVERSITY Academic Exchange Semester — GPA: 5.7/6.0 ‣ Focus on learning-based control and computer vision	Lund, Sweden Jan. 2022 - Jun. 2022
ETH ZURICH BSc ETH in Mechanical Engineering — GPA: 5.2/6.0 ‣ Focus on mechatronics and control	Zurich, Switzerland Sep. 2018 - Aug. 2021
KANTONSSCHULE WETTINGEN Swiss Matura and IB Diploma, Major in Economics and Law — GPA: 5.7/6.0 (top 0.5%, salutatorian) ‣ Exchange Semester at the Gymnase de Nyon (VD, Switzerland)	Wettingen, Switzerland Aug. 2014 - Jun. 2018

WORK EXPERIENCE

NETWORKED SYSTEMS GROUP — ETH ZURICH Student Research Assistant — part time ‣ Implemented a scalable real-world network-data collection framework using Python and Amazon Mechanical Turks ‣ Performed distributed testing of ML-based video streaming algorithms to evaluate their real-world performance	Zurich, Switzerland May 2024 - Dec. 2024
BAIN & COMPANY Associate Consultant Intern — full time intern (return offer received) ‣ Advised 3 industry leading firms and fortune 500 companies on performance improvement and IT strategy projects ‣ Conducted empirical research and analyzed large, unstructured datasets to formulate strategic recommendations	Zurich, Switzerland Feb. 2024 - Apr. 2024
ERANEOS Data Science Intern — full time intern (return offer received) ‣ Worked on 5+ projects in finance and the public sector with a focus on AI & GenAI, LLMs and data analytics ‣ Developed custom LLM solutions and multi-agent systems using fine tuned local LLMs, RAG and OpenAI API	Zurich, Switzerland Jun. 2023 - Dec. 2023
GÜDEL GROUP Robotics and Software Engineer — full time intern and part time working student (return offer received) ‣ Machine learning, data science and software engineering for robotics and industrial analytics ‣ Transformed 3+ quality control procedures to AI driven processes and rewrote the software for 4+ key applications	Bern, Switzerland Aug. 2021 - May 2023
ETH ZURICH Teaching Assistant for Analysis III and Dimensioning I — part time ‣ Prepared and lead weekly exercise sessions for 30+ students, graded assignments and exam supervision ‣ Elected by students to lead a two-day exam preparation course with 30+ participants for Analysis III	Zurich, Switzerland Sep. 2020 - Jan. 2023

RESEARCH & COURSE PROJECTS

MASTER THESIS — ETH AI CENTER LEARNING & ADAPTIVE SYSTEMS GROUP (ETHZ) Model-Based Reinforcement Learning for Loco-Manipulation — Grade: 5.75/6.0 (view publication here) ‣ Using model-based RL for efficient policy learning on a Boston Dynamics Spot quadruped with JAX, PyTorch and C++ ‣ Learning robot dynamics from data by combining Bayesian Neural Networks with physical priors ‣ Supervised by Jin Cheng, Chenhao Li, Bhavya Sukhija, Lenart Treven, Prof. Stelian Coros and Prof. Andreas Krause	Zurich, Switzerland Jun. 2024 - Dec. 2024
SEMESTER THESIS — NETWORKED SYSTEMS GROUP (ETHZ) Machine Learning Based Video Streaming Algorithms — Grade: 6.0/6.0 (view here) ‣ Researched and evaluated state-of-the-art ML-based video streaming algorithms ‣ Developed Python-based network-data collection and benchmarking platform using Docker and AWS/Azure SDKs ‣ Supervised by Dr. Alexander Dietmüller and Prof. Laurent Vanbever	Zurich, Switzerland Sep. 2023 - Jan. 2024
BACHELOR THESIS — COMPUTATIONAL ROBOTICS LAB (ETHZ) State Estimation for Legged Robots — Grade: 6.0/6.0 (view publication here – ETH Research Collection) ‣ Researched, developed and implemented different state estimation approaches with C++ and a Unitree A1 quadruped ‣ Determined the optimal approach still being used in the Lab to date based on an analysis of speed and accuracy ‣ Supervised by Dongho Kang and Prof. Stelian Coros	Zurich, Switzerland Feb. 2021 - Aug. 2021

SELECTION OF COURSE PROJECTS — ETH ZURICH & LUND UNIVERSITY

Advanced Topics in Control — Automatic Control Laboratory (ETHZ)

Feb. 2023 - Aug. 2023

- Course projects covering graph theory, consensus algorithms, multi-agent systems, distributed optimization
- Final paper on “Decentralized Attitude Stabilization and Formation Control for Aerial Transportation Applications”

Probabilistic Artificial Intelligence — Learning and Adaptive Systems Group (ETHZ)

Sep. 2022 - Feb. 2023

- Course projects covering GPR, Bayesian Neural Networks, Bayesian Optimization and Reinforcement Learning

Dynamic Programming and Optimal Control — Inst. for Dynamic Systems and Control (ETHZ)

Sep. 2022 - Feb. 2023

- Course projects covering the Dynamic Programming Algorithm and Deterministic Continuous-Time Optimal Control

Planning & Decision Making for Autonomous Mobile Robots — Inst. for Dynamic Systems and Control (ETHZ)

Sep. 2022 - Feb. 2023

- Course projects covering Informed Graph Search, Dynamic Programming, Steering, Collision Checking, Optimization
- Final project on implementing an end-to-end planning and control stack for a car-like vehicle using RRGs and MPC

Learning-Based Control — Faculty of Engineering (Lund University, Sweden)

Jan. 2022 - Jun. 2022

- Course projects covering robust Data-Driven Control strategies including System Id, Dynamic Programming and RL

Computer Vision — Faculty of Engineering (Lund University, Sweden)

Jan. 2022 - Jun. 2022

- Course projects covering Projective and Epipolar Geometry, Calibration, DLT, Model Fitting and Optimization

Computational Models of Motion — Computational Robotics Lab (ETHZ)

Feb. 2021 - Aug. 2021

- Course projects covering the fundamentals of physics-based modeling and numerical optimization for robotics

EXTRACURRICULAR EXPERIENCE

VEREIN LEGAL HELP (NGO)

Zurich, Switzerland

Board Member and Head of IT

Sep. 2022 - present

- In charge of strategic initiatives, maintaining long-term growth, as well as all technical and software related projects
- Led an organization wide (100+ users) software transition project resulting in savings of 5000+ CHF annually

GLP SIGGENTHAL

Obersiggenthal, Switzerland

Board and Committee Member

Aug. 2021 - present

- In charge of communications, as well as planning and implementing campaigns and initiatives on a local level
- Member of the advisory body of our municipality on topics of nature and environmental conservation

ANALYTICS CLUB AT ETH

Zurich, Switzerland

Quants at ETH Member

Feb. 2023 - Dec. 2024

- Growing the quant community at ETH, organizing events of 70+ participants at ETH with leading quant firms

ETH ENTREPRENEUR CLUB

Zurich, Switzerland

Finance Committee Member

Sep. 2020 - Feb. 2022

- Led a project to automatize reimbursements, invoicing, and accounting, increasing process efficiency by over 300%
- Acted as the principal financial point of contact for leading startups, 50+ members, and major corporate partners

SKILLS & CERTIFICATIONS

PROGRAMMING

Python, C++, MatLab, SQL, R, JavaScript, C#

FRAMEWORKS

PyTorch, JAX, Docker, Pandas, Numpy, Scipy, scikit-learn, OpenCV, OpenAI Gym, OpenAI API, LangChain, Git, AWS, Azure, NVIDIA Isaac Sim, Boston Dynamics, Unitree

LANGUAGES

English (Native), German (Native), Swiss German (Native), French (B2)

CERTIFICATIONS

J&S Coach Tennis & Snowboard, Certificate in Portfolio and Risk Management (University of Geneva, 2023)

INTERESTS

SPORTS

Competitive tennis player, coach & team captain, snowboarding, running, strong interest in health and fitness

OTHER INTERESTS

Policy, law and economics, global and local politics, nature and the environment