

## Education

### Swiss Federal Institute of Technology Zurich (ETH Zurich)

Zurich, Switzerland

#### ROBOTICS, SYSTEMS AND CONTROL MSc

Sep 2022 — Nov 2024

- Final Grade pending
- *Master's Thesis*: Uncertainty Model Unfalsification via Semi-Infinite Programming and Local Reduction; conducted at Imperial College London
- *Semester Project*: Diffusion Spline-Based Navigation Policy in Dynamic Environments (5.75 / 6.0)
- *Core Courses*: Linear System Theory, Dynamic Programming and Optimal Control, Recursive Estimation, Model Predictive Control, Vision Algorithms for Mobile Robotics, Nonlinear Dynamics and Chaos, Introduction to Machine Learning
- *Additional Courses*: Advanced Model Predictive Control, Convex Optimization, Probabilistic Artificial Intelligence, Orbital Dynamics

#### MECHANICAL ENGINEERING BSc

Sep 2018 — Oct 2021

- *Final Grade*: 5.56 / 6.0 (top 2% of the class)
- *Thesis*: Distributed Trajectory Planning for Multiple Autonomous Aerial Vehicles (5.75 / 6.0)
- *Core Courses*: Calculus, Linear Algebra, Mechanics, Dynamics, Physics, Thermodynamics, Fluid Mechanics, Electrical Engineering, Informatics
- *Electives*: Control Systems, Signals & Systems, System Modeling, Advanced Topics in Control, Quantum Mechanics, Models, Algorithms and Data

### Gymnasium Raabeschule

Braunschweig, Germany

#### ABITUR (GERMAN UNIVERSITY-ENTRANCE QUALIFICATION)

graduated Jun 2017

- *Average Grade*: 1.1 / Salutatorian
- *Advanced Courses* (German "Leistungskurse"): Mathematics, Physics, Chemistry

## Research & Work Experience

### Control and Power Research Group, Imperial College London

London, United Kingdom

#### MASTER'S THESIS

Apr 2024 — Oct 2024

- *Title*: Uncertainty Model Unfalsification via Semi-Infinite Programming and Local Reduction
- Conducted as a visiting student under supervision of Prof. Dr Eric Kerrigan
- Explored the use of optimization problems (semi-infinite programs in particular) and data to inform uncertainty models
- Developed a Julia package for dynamical systems simulation called [SimpleSim.jl](#) available on the Julia registry
- *Final Grade*: pending

### Robotic Systems Lab, ETH Zurich

Zurich, Switzerland

#### SEMESTER PROJECT

Oct 2023 — Feb 2024

- *Title*: Diffusion Spline-based Navigation Policy in Dynamic Environments
- Investigated the use of denoising diffusion probabilistic models (DDPMs) for spline-based robot navigation
- *Final Grade*: 5.75 / 6.0

### Zipline International Inc.

South San Francisco, California, USA

#### GUIDANCE, NAVIGATION AND CONTROL INTERN

Sep 2021 — Aug 2022

- Supported development work on guidance, navigation and controls algorithms for a novel autonomous aircraft
- Worked extensively with Julia (for simulation) and C++ (for prototyping and embedded systems)
- [What I worked on \(YouTube\)](#)

### Institute for Dynamic Systems and Control, ETH Zurich

Zurich, Switzerland

#### BACHELOR'S THESIS

Summer 2021

- *Title*: Distributed Trajectory Planning for Multiple Autonomous Aerial Vehicles
- Developed a distributed trajectory planner using ADMM and ALADIN and contributed to the [CRS](#) framework
- *Final Grade*: 5.75 / 6.0

### Academic Space Initiative Switzerland (ARIS)

Zurich & Dübendorf, Switzerland

#### CONTROL SYSTEMS ENGINEER

Sep 2020 — Aug 2021

- Two-semester project with the goal of developing an autonomous guided recovery system for a student rocket
- Worked with a team of eight students from different fields and universities
- Developed a fully functional embedded control system from the ground up
- [Link to ARIS Website](#)

### ETH Zurich

Zurich, Switzerland

#### TEACHING ASSISTANT FOR SIGNALS & SYSTEMS, MECHANICS 1 & 2 AND DIMENSIONING 1

Feb 2020 — Feb 2024

- Independently taught weekly classes of approx. 25 students
- Prepared practice material and exercise sessions
- Supported lectures by preparing slides, grading assignments and monitoring online forums

## Honors & Awards

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2020 — 2024 **Scholarship Recipient** [🔗 More Information in English](#)

*German National Academic Foundation*

May 2019 **1st Place** Innovation Project (“Innovationsprojekt”), [🔗 Information in German](#)

*ETH Zurich*

Jul 2017 **High-School Graduate Prize** [🔗 More Information in German](#)

*German Physical Society*

## Specialized Skills

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**Programming** Julia, Python, C++, C

**Robotics** MATLAB/Simulink, ROS, Gazebo, Eigen, PyTorch

**Optimization** JuMP, CasADi, FORCESPRO, Acados, CVXPY

**Hardware** RaspberryPi, Arduino, STM32, ESP32

**Other** Git, Linux, LaTeX, Siemens NX, SQL, PHP, Javascript (...)

## Other

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### Languages

German — Native Proficiency

English — Full Professional Proficiency

French — Elementary Proficiency

### Volunteering

Mentoring-Program for First-Semester Students at ETH Zurich 2020 / 2021

Advisor for Digital Infrastructure & IT at Youth Against AIDS (Jugend gegen AIDS e. V.) 2014 — 2017