# Jannes **Hühnerbein**

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## Education

**Swiss Federal Institute of Technology Zurich (ETH Zurich)**       *Zurich, Switzerland*

Robotics, Systems and Control MSc       *Sep 2022 — present*
- Expected to graduate in September 2024
- *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 — Aug 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, Chemistry
- *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 (second best in class)
- *A-courses:* Mathematics, Physics, Chemistry

## Work Experience

**Robotic Systems Lab, ETH Zurich**       *Zurich, Switzerland*

Semester Project       *Oct 2023 — Feb 2024*
- *Title*: Diffusion Spline-based Navigation Policy in Dynamic Environments
- Part of the Robotics, Systems and Control MSc program at ETH Zurich
- TODO

**Zipline International Inc.**       *South San Francisco, CA, USA*

Guidance, Navigation and Control Intern       *Sep 2021 — Aug 2022*
- Supported development work on guidance, navigation and controls algorithms for a novel autonomous aircraft
- Extensive work with Julia (for simulation and prototyping) and C++ (embedded)
- 🔗 [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
- TODO

**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 Mechanics 1 & 2, Dimensioning 1 and Signals & Systems       *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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|---|---|---|
| since 2020 | **Scholarship Recipient**  🔗 More Information in English | *German National Academic Foundation* |
| 2019 | **1st Place**  Innovation Project ("Innovationsprojekt"), 🔗 More Information in German | *ETH Zurich* |
| 2017 | **High-School Graduate Prize**  🔗 More Information in German | *German Physical Society* |

## Skills

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|---|---|
| **Programming** | Julia, Python, C++, C |
| **Robotics** | MATLAB/Simulink, ROS, Gazebo, Eigen, PyTorch |
| **Optimization** | CasADi, FORCESPRO, Acados, CVXPY |
| **Hardware** | RaspberryPi, Arduino, STM32, ESP32 |
| **Other** | Siemens NX, SQL, PHP, Javascript |

## Other

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|---|---|
| **Languages** | German: Native<br>English: Professional<br>French: Basic |
| **Volunteering** | Mentoring-Program for First-Semester Students at ETH Zurich *(2020/2021)*<br>Advisor for Digital Infrastructure & IT at Youth Against AIDS (Jugend gegen AIDS e. V.) *2014 - 2017* |