

David Heiner Lammering

dlammering@ethz.ch
Zurich, Switzerland

+41 78 311 96 63
+49 151 54104444



EDUCATION

ETH Zurich - B.Sc. Electrical Engineering & Information Technology Sep 2023 – Dec 2026 (expected)

- **GPA: 5.69 / 6.0** - Coursework: Signals & Systems, Control Theory, Embedded Systems, Digital and Analog Circuits, Computer Engineering

National University of Singapore (NUS) - Exchange Semester Spring 2026

- Coursework: Autonomous Robot Systems, Feedback Control Systems

EXPERIENCE

Teaching Assistant - Informatik II Sep 2026 – Jan 2027

Teaching Assistant - Engineering Mechanics Sep 2024 – Jan 2026
ETH Zurich, Switzerland

- Hosting weekly exercise sessions for up to 40 undergraduate students, with full freedom over session format
- Design of creative supplementary learning materials including problem sets and theory recaps

RESEARCH & PROJECTS

Ball-On-Plate System Automatic Control Lab, ETH Zurich
Gamified control demonstrator: A motorized plate balances a physical ball that interacts with on-screen games

- **Bachelor's thesis (Sep 2026 – Present, solo):** Redesigning the system for a new screen format, improving mechanics and adapting software. Full CAD, parts selection, assembly and wiring (Raspberry Pi, DC motors, encoders, IMU)
- **Semester project (Fall 2025):** PID and LQR controllers with live tuning and gamified demos

Line- and Wall-Following Robot Exploration Project, ETH Zurich

- Interfaced a motor driver with the STM32 GPIO for differential steering of a four-wheel robot
- Chose a self-designed PD + state-machine architecture over high-gain control, giving stable line tracking with robust tight-corner and line-loss handling; reused PD for wall-following in a maze

Autonomous Robot Navigation National University of Singapore

- Implemented **A* + line-of-sight post-processing** to remove 8-connected-grid zigzags, feeding a pure-pursuit controller on a real TurtleBot
- Implemented PID control and Kalman-filter localization for a simulated quadcopter in ROS2

Tennis Ball Machine Independent project, 2023

- Designed and built a working machine: 3D-printed launcher wheels and yaw axis, wooden frame, 3-phase motors on a frequency converter, Lego Mindstorms for aiming and feeding; worked, but heavy and loud

TECHNICAL SKILLS

Coding Languages: C, C++, Python, MATLAB

Hardware: STM32 (Nucleo), Raspberry Pi, Oscilloscopes, Signal Generators, 3D Printing

Software: ROS2, STM32CubeIDE, Simulink, Git, Shapr3D, Autodesk Fusion

Languages: English (fluent), German (native)

INTERESTS

Football (team captain for 4 years), Tennis, Running, Electronic Music Production