





DUPONT Benjamin

Mechanical engineering student

+41 (0)76 233 69 31 

bdupont@student.ethz.ch 

56 Route du Viéran, 74370
Epagny Metz-Tessy, France 

Work Experience

Teaching assistant

June 2024 - Current

ETH | Zurich, Switzerland (Part time)

- Teaching assistant for the robotics class "[Duckietown](#)" at ETH
- Hardware preparation and maintenance, base software stack development and adaptation using ROS and docker, creation of programming exercises, student support and project grading.

Student Formula 1 operation room support

Feb 2024 - July 2024

Kick-Sauber Formula 1 team | Hinwil, Switzerland

- In the operations room during Formula 1 Grand Prix weekends (3 days) from the factory
- Tire and break data analysis from the car logs and preparation of reports for the team meetings
- Development and maintenance of automated data analysis scripts in MATLAB and Python
- Competitor teams monitoring and tire management strategy comparisons

Head of controls

Aug 2023 - March 2024

AMZ Racing | Zurich, Switzerland

- Recruitment of the new team (lecture presentations, interviewing process and selection)
- Management and guidance of the controls group. Team and module strategy overview
- Code reviewing (C++ and Python), concept suggestions and validation

Controls engineer

Sept 2022 - Aug 2023

- Led the design and enhancement of high-level Model Predictive Control (MPC) using C++ and ROS, enabling our custom-built Formula Student race car to navigate cone-delimited tracks autonomously at optimal speeds.

- Tuning of the controller for speed and reliability using knowledge of race car vehicle dynamics as well as post-test data analysis on logs for debugging and to strive for optimal performance.
- Competition against other Formula Student teams during summer around Europe

Aircraft performance engineer

Feb 2023 - June 2023

ALR Aerospace | Zurich, Switzerland (Part time)

- Aircraft aerodynamic and performance data analysis using Python.
- Processing aircraft trajectory data extracted from flight simulation
- Applying flight mechanics knowledge to post-process the data
- Development of numerical methods for data reduction and filtering

Education

Master of Science Mechanical engineering

2022 - Present

Eidgenössische Technische Hochschule (ETH) | Zurich, Switzerland

- Course choices oriented towards robotics (planning, controls, computer vision, state estimation, dynamical systems, sysID and machine learning) and fluid dynamics (aerodynamics and CFD)
- Semester project: "Obstacle detection for autonomous racing go-karts using a dynamic occupancy grid", [ETH IDSC group](#)
- Master thesis: "Online UWB Anchor Initialisation for Autonomous Drone Navigation", [AAU CNS group](#)

Exchange student

2021 - 2022

NTNU | Trondheim, Norway

Exchange student for two full semesters as a part of my bachelor's degree studies.

Bachelor of Science Mechanical engineering

2019 - 2022

École Polytechnique Fédérale (EPFL) | Lausanne, Switzerland

Graduated with a Bachelor's degree, achieving a top tier average grade of 5/6.

Technical Skills

Programming: Python, Matlab and Simulink, C, C++, LabView, LaTeX, ROS, Linux environment, Docker.

Software: CATIA and Solidworks (CAD), Abaqus (FEM), Microsoft Office, Adobe Photoshop/Lightroom.

Languages

English (British national)



French (French national)



German (B2)



Spanish (A1/A2)

