Damien Keijzer

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Education

MSc Computer and Embedded Systems Engineering **Delft**

TU Delft *September 2024 - Present*

- Develop expertise in writing safe, efficient software using Rust and designing real-time systems, including a synthesizer and a quadcopter flight controller.
- Gain hands-on experience with FPGAs and hardware design using Verilog and HLS, creating a video pipeline on a PYNQ board and modifying a RISC-V processor.
- Improve CPU performance using FPGA design and implementation techniques.
- Acquire expertise in modern computer architectures, including RISC-V, and applied LLVM for code optimization and design-space exploration.
- Tailor curriculum to include control systems, networking, security, and FPGA design to broaden embedded systems knowledge.
- For more details, visit TU Delft CESE.

Aerospace Engineering Bachelor **Delft**

GPA: 8.4/10 - TU Delft *Graduated: June 2023*

- Earned 20 additional ECTS credits beyond the standard requirements of my bachelor's degree program through the Honours program, including 14 credits for a research project (See "projects") and 6 credits for inter-faculty courses.
- Followed additional inter-faculty courses: MOOC Introduction to Computer Science (1 EC), Rhetorical and Public Speaking (3 EC) and Scientific Writing (3 EC).

Electronics for Robotics **Delft**

Minor Electrical Engineering *September 2022 - January 2023*

- Built skills in utilizing VHDL on FPGA's with the development of a line tracking robot.
- Enhanced proficiency in advanced electronics by studying power electronics, circuit analysis, digital systems, digital communication systems and electromagnetic transfer.
- Developed my skills in the utilization of function generators, oscilloscopes, soldering stations and prototyping electrical circuits.

Work Experience

Airbus Upnext Superconducting PCMS Development Intern **Toulouse, France**

Internship *Sept 2025 – Present*

- *Project: Powertrain Control and Monitoring System (PCMS)*
- Develop Simulink models for the real time acquisition of sensory data.
- Mature experimental setups for the testing of several cryogenic test-benches.
- Design and implement control logic for heating elements utilizing both 3-phase and single-phase power systems.
- Validate a large-scale EtherCAT network to ensure deterministic, real-time communication.

Technical Advisory Committee AeroDelft **Delft**

Part-time position *September 2024 – July 2025*

- Assist in the onboarding of the new team, providing them with workshops and documentation.
- Advise the new team on design decisions based on the experience gained in my year.
- Review certification and testing documents to ensure quality assurance and provide practical feedback to streamline the process.

AeroDelft Electrical/Software Engineer **Delft**

Part-time Position *August 2023 – September 2024*

- Contributed 30 hours per week at a non-profit organization, retrofitting a Sling TSi aircraft with a hydrogen powertrain.
- Developed source code in C targeting the Bosch RC27-18 controller, managing diverse tasks ranging from HV DCDC-converter powerpath control and signal handling from the isolation monitoring device.
- Ensured compliance with DO-178C software verification protocols at the designated Design Assurance Level (DAL), in collaboration with Dutch authorities (IL&T) and external partners (e.g., ADSE).
- Prototyped high and low voltage electrical circuits for the testbed, simulating the powertrain intended for the aircraft's internal systems.

Teaching Assistant Urban Air Mobility course **Delft**

Part-time Position *August 2023 – September 2024*

- Contributed 20 weekly hours to advancing an online Urban Air Mobility course offered by TU Delft, tailored for people from industry.
- Built 'tuduam', a public Python repository serving as a framework for UAM vehicle design, offering an API for e.g wingbox optimization, performance analysis et cetera.
- Implemented automated workflows for continuous integration of tests and publishing releases.
- Achieved full coverage of the source code through comprehensive unit and module testing.

Honours Board **Delft**

Part-time position *September 2022 – June 2023*

- Served as a member of a four-person board representing the Delft Honours program.
- Organized educational, career and social events e.g Network Events, Honours Talks and the 4TU Challenge.
- Actively collaborated and communicated with the Honour's community to support their ideas.
- Assumed partial responsibility for ensuring the quality of services provided by the Honours program.

Achievements & Projects

Collaborative eVTOL Synthesis (Bachelor Thesis): Published at SciTech *May 2023 - June 2023*

- Collaborated within a 10-member team to design a crashworthy, long-range eVTOL powered by hydrogen during a 10-week project.
- Authored and presented a paper, accepted for and presented in Orlando, Florida, at SciTech 2024.

Honours thesis project *January 2022 – August 2023*

- Conducted a research project worth 14 ECTS on 'Reliability Based Design Optimization of a Long-Range eVTOL Aircraft under Mission Uncertainty Parameters' as part of my Honours program, achieving a notable 9/10.
- Employed Python programming skills to perform mission uncertainty analysis and quantification, improving computational efficiency, enabling multiprocessing.
- Proficiently utilized an HPC cluster, leveraging its substantial computing power to execute MADO scripts effectively.
- Collaborated closely with an associate professor to ensure project success, demonstrating strong teamwork and mentorship abilities.

Technical Proficiencies

- Python (Advanced)
- C (Proficient)
- C++ (Intermediate)
- Rust (Proficient)
- VHDL/(System)Verilog (Intermediate)
- TwinCAT/Structured Text (Working Knowledge)
- Mathlab/Simulink/Speedgoat (Proficient)
- LaTeX (Advanced)
- Github/GitLab/Git (Proficient)

Languages

- French *(working level; dual heritage, French and Dutch)*
- English *(Fluent)*
- Dutch *(Fluent)*