

# Damien Keijzer

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## Education

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### MSc Computer and Embedded Systems Engineering

Delft

*TU Delft*

*September 2024 - Present*

- o Develop expertise in writing safe, efficient software using Rust and designing real-time systems, including a synthesizer and a quadcopter flight controller.
- o 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.
- o Improve CPU performance using FPGA design and implementation techniques.
- o Acquire expertise in modern computer architectures, including RISC-V, and applied LLVM for code optimization and design-space exploration.
- o Tailor curriculum to include control systems, networking, security, and FPGA design to broaden embedded systems knowledge.
- o For more details, visit [TU Delft CESE](#).

### Aerospace Engineering Bachelor

Delft

*GPA: 8.4/10 - TU Delft*

*Graduated: June 2023*

- o 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.
- o 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*

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

## Work Experience

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### Airbus Upnext Superconducting PCMS Development Intern

Toulouse, France

*Internship*

*Sept 2025 – Present*

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

### Technical Advisory Committee AeroDelft

Delft

*Part-time position*

*September 2024 – July 2025*

- o Assist in the onboarding of the new team, providing them with workshops and documentation.
- o Advise the new team on design decisions based on the experience gained in my year.
- o 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*

- o Contributed 30 hours per week at a non-profit organization, retrofitting a Sling TSi aircraft with a hydrogen powertrain.
- o 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.
- o 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).
- o 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*

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

## **Honours Board**

**Delft**

*Part-time position*

*September 2022 – June 2023*

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

## **Achievements & Projects**

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### **Collaborative eVTOL Synthesis (Bachelor Thesis): Published at SciTech**

*May 2023 - June 2023*

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

### **Honours thesis project**

*January 2022 – August 2023*

- o 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.
- o Employed Python programming skills to perform mission uncertainty analysis and quantification, improving computational efficiency, enabling multiprocessing.
- o Proficiently utilized an HPC cluster, leveraging its substantial computing power to execute MADDO scripts effectively.
- o Collaborated closely with an associate professor to ensure project success, demonstrating strong teamwork and mentorship abilities.

## **Technical Proficiencies**

## **Languages**

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- o Python (Advanced)
- o C (Intermediate)
- o Rust (Proficient)
- o VHDL/(System)Verilog (Working knowledge)
- o MathWorks Simulink (Proficient)
- o LaTeX (Advanced)
- o Github/GitLab/Git (Proficient)

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