Martijn **Swart**

Contact details

@ Martijnswart18@ziggo.nl
(+31) 6 253 048 81
https://www.linkedin.com/in/martijn-swart

Languages

English (fluent), **Dutch** (native), **German** (intermediate)

Technical Strengths

- **Programming & Analysis**: Python, Matlab, C++, R
- **Data & Process Tools:** Excel, LaTeX, PowerPoint
- **Engineering Tools:** SolidWorks, CATIA
- **Simulation Tools:** Abaqus, COMSOL, SolidWorks Simulation
- **Workflow Experience:** Product design cycle, digital prototyping, design for manufacturing (DFM), tolerance analysis, electrical assembly, mechanical systems design
- **Program Skills:** Engineering planning, risk analysis, technical documentation, stakeholder communication

Certifications

- Certified SOLIDWORKS Associate (CSWA)
- General Military Training (National Reserves Corps)
- English: CEFR C1
- German: CEFR B2

Hobbies

Video making/editing, Traveling, Competitive Sports

Professional Summary

Mechanical engineering master's graduate specializing in high tech hardware systems and micro scale engineering. Experienced in leading complex and multidisciplinary engineering projects, taking ideas from a concept to fully functional results. Strong background in semiconductor handling, embedded systems, CAD based mechanical design, and product development. Proven ability to translate technical challenges into structured plans, align cross-functional teams, and drive execution in fast paced R&D environments.

Research & Innovation

Laser Based Semiconductor Handling — TU Delft **2025–2026**

◇ Conceived and developed a new semiconductor handling concept combining capillary based droplet mechanics and laser driven propulsion within a lab environment, replacing conventional vacuum pick and place systems.

◇ Experimentally and numerically validated the scalable chip propulsion system applicable across chip sizes, establishing an improved foundation for semiconductor handling systems, reducing handling time by over 60%.

Work Experience

Defensity College — *Reserve Officer and Engineer* **2023–2026**

◇ Led the design of an in house additive manufacturing system, developing control logic, hardware validation procedures, and embedded system testing, contributing to system reliability, power integration, and operational safety.

◇ Planned and executed structured testing protocols, performance validation, and engineering documentation, increasing print scalability by 150%.

AVL List GmbH — *Prototype Design Engineer (Intern)* **2023**

◇ Designed a dynamic steering force emulator for heavy duty trucks, expanding Vehicle-in-the-Loop test coverage by over 50% and enabling autonomous system validation under previously unsupported conditions.

◇ Coordinated design decisions and validation requirements across international engineering teams, aligning mechanical design and testing objectives

◇ Translated safety requirements into engineering tasks, contributing to a scalable test solution operable across a multitude of heavy duty trucks.

Formula Student Team Delft — *Automotive Engineer* **2020–2022**

◇ Electronics engineer responsible for hardware integration, PCB layout, and cross-functional team coordination to ensure high- and low-voltage compliance within a competitive EV platform.

◇ Drivetrain Engineer, design and integration of the vehicle's braking system, pedal system and drivetrain assembly, reducing component weight by 20%.

Education

MSc Mechanical Engineering, TU Delft **2023–2026**
Track: High Tech Engineering (Micro-Nano Engineering)
GPA: 3.5

BSc Mechanical Engineering, TU Delft **2019–2023**
Minor: Engineering Management and Commerce at UBC (2022)
GPA: 3.6