

Jelle Zwart

High-Tech Mechanical Engineer
Delft, NL +31 6 20 62 58 55

Precision Design & Prototyping
Jelle@zwart.online

[Linkedin profile](#)

PROFILE

MSc Mechanical Engineering graduate (TU Delft, Mechatronic System Design) with a strong analytical background and hands-on prototyping experience. I like owning a problem end to end: understanding the physics, building the model, making the parts and testing whether it actually works. Proven ability to design, build and test precision mechanical systems, from a coilless actuator demonstrator to large-scale steel structures. Looking to grow as an engineer in high-tech equipment, semiconductor or automotive environments where I can learn from experienced colleagues.

EXPERIENCE

Graduate Research Intern @Fluxthor Nov 2025 – Aug 2026

Delft, NL MSc thesis project, graded 8

- Designed, built and validated a proof-of-concept coilless short-stroke reluctance actuator for high-precision positioning, using mechanical motion amplification and flexure-based suspension
- Dimensioned the permanent-magnet circuit in COMSOL and validated it against a purpose-built load-cell test setup
- Designed spring-steel flexure guidance and amplification mechanisms; verified stiffness, stress and eigenfrequencies with FEA
- Milled, assembled and calibrated the demonstrator in-house, and characterised it experimentally (stroke, stiffness, frequency response)
- Developed a Python control and data-acquisition interface with feedforward and feedback control and system identification; the actuator holds position at near-zero power

Mechanical Design & Manufacturing, Renewable Energy System @Railcenter & TU Delft Nov 2024 – Jun 2025

Delft, NL Project to make railway infrastructure more sustainable

- Responsible for the full metal structural design of a stand-alone energy unit integrating a wind turbine and solar panels
- Managed the project end to end: design, fabrication oversight and on-site installation near the railway to power a railway switch

EDUCATION

MSc High-Tech Engineering, Mechatronic System Design @TU Delft Sep 2024 – Aug 2026

- Graduated August 2026, completed in 2 years; thesis graded 8
- Thesis: Novel reluctance-tuning short-stroke actuator, in collaboration with Fluxthor
- Electives in Fluid Dynamics, Heat Transfer and Computational Design

BSc Mechanical Engineering @TU Delft Aug 2021 – Jun 2024

- Completed in 3 years, Cum Laude; minor in Med-Tech Based Entrepreneurship
- Regularly led technical direction in group projects

VWO, Nature & Technology @Stedelijk Gymnasium 's-Hertogenbosch Sep 2015 – Jul 2021

- Cum Laude; 10th place, National Youth Physics Olympiad 2018

TECHNICAL SKILLS

CAD	SolidWorks (CSWA certified), Fusion 360; 2D technical drawings to ISO GD&T standards
Simulation & Analysis	COMSOL Multiphysics (electromagnetic, structural, eigenfrequency), FEA, MATLAB
Mechatronics & Control	Flexure design, feedforward and feedback (PID) control, system identification, Python
Test & Measurement	Data acquisition (LabJack, National Instruments, LabVIEW), laser displacement sensors, load cells, experimental validation
Manufacturing	Milling, steel fabrication, sheet metal, 3D printing, precision assembly and calibration
Languages	Dutch (native), English (C2, Cambridge), French / Spanish (A1), actively developing Spanish

INTERESTS

- Jazz band *Carabinieri* (2 albums on Spotify) and DJ/trumpet live act *Duotonic* (great for company parties); restoring and improving motorcycles and scooters; hiking, football and skiing