Last Updated on 15th November 2026

LodeVermeulen

contact

Amsterdam
Netherlands

mail@lodevermeulen.com

github.com/LodeVermeulen
linkedin.com/in/lodevermeulen
lodevermeulen.com

languages

Dutch, Mother tongue
English, Fluent

programming

Python, JavaScript, Git, HTML, CSS, LaTeX

Education

2026–now **PhD.** Physics and AI — University of Amsterdam

- Gradient-based optimization of metamaterials.

2024–2026 **MSc.** in Physics and Astronomy, computational track [8.6/10] — University of Amsterdam
Thesis: Optimization of elastoplastic metamaterials [9.5/10]

- Optimized the geometry of an elastoplastic metamaterial for high energy absorption, while staying under a defined peak force.
- Developed highly performant simulations in JAX and executed parallelized computations.
- Implemented optimization techniques for non-smooth objective functions, resolving nonlinearities such as plasticity and contact.
- Spearheaded LLM-assisted programming/research within the research group, by exploring AI agents and custom tool calls.
- Validated computational optimization results through empirical lab testing, performing compression tests on 3D-printed materials to extract stress-strain data.
- Collaborating on writing and publishing an academic paper based on research findings.

2020–2024 **BSc.** in Physics and Astronomy [7.6/10] — University of Amsterdam
Thesis: Formal Verification of Mathematics Behind Quantum Optics Experiments [9/10]

- Gained experience in drafting and proving complex mathematical statements rigorously.
- Formalized mathematics computationally using the Lean theorem prover.

Experience

2025–2026 **Legalflow** — Amsterdam, Netherlands
Software developer/co-founder (part-time)

- Core contributor to the development of new features and maintenance on the legal platform.
- Created agentic AI workflows for internal use with n8n.
- Optimized the website for search engines, using Google search Console for analysis. Contributed to making and running ad campaigns to market the platform using Google ads.
- Led background and technical interview rounds and hired a new developer.
- Ran the company email account, answering client questions.
- Set up the internal employee accounts using Google Workspace.

2023–2025 **Legalloyd/Legalflow** — Amsterdam, Netherlands
Software developer (part-time)

- Developed and shipped core features for a smart legal platform using Odoo.
- Worked in an agile development team, writing and reviewing maintainable code following industry best practices.
- Wrote code across the entire stack: backend (Python), frontend (JS, HTML/(S)CSS).
- Wrote unit and integration tests for the CI/CD workflows.
- Implemented/worked with techniques/services necessary for hosting/payments/analytics: Docker, DNS, Odoo.sh, Sendgrid, Plausible, Sentry, Adyen, AWS, Azure.

2021–2022 **Wismon** — Utrecht, Netherlands
Junior author (part-time)
Created math exercises using LaTeX and AlgebraKit and did data entry in Excel.

Interests

Professional: Soft/hardware innovation, autoformalization, and AI agents.
Personal: Waterpolo, fitness, hiking, chess.