

Lorenz Veithen

Research engineer devoted to bridging the gap between cutting edge technology and societal challenges.

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TECHNICAL EXPERIENCE

AEROTHERMAL ENGINEER

REXUS PROGRAMME - TEAM SHEAR (DARE)

📍 Delft, The Netherlands 📅 Jul. 2022 - Jan. 2024

- Flight-proving a new simple to manufacture and cost-efficient heat shield for sounding rocketry through the SHEAR experiment.
- Developing the heat shield production process to improve its manufacturability.

FLIGHT DYNAMICS INTERNSHIP

GERMAN AEROSPACE CENTER (DLR)

📍 Munich, Germany 📅 Aug. 2023 - Dec. 2023

- Research project on the Q-Law, a Lyapunov control law to compute near-optimal many-revolutions trajectories between any two bounded orbits.
- Implemented and compared different formulations, devised methods to mitigate thrust chattering, and derived a novel general slot targeting method.
- Presented results at ISSFD2024 conference.

UNDERGRADUATE RESEARCHER

DELFT UNIVERSITY OF TECHNOLOGY

📍 Delft, The Netherlands 📅 Sep. 2020 - Aug. 2022

- Developed a novel method to analyse the morphometrics of surface features of meteorites to determine characteristics of its entry.
- Displayed results at the IMC 2023 and published as first author in its proceedings.

SPACE SWEEPER PROJECT MANAGER

DELFT UNIVERSITY OF TECHNOLOGY

📍 Delft, The Netherlands 📅 April 2022 - Jul. 2022

- Led a team of 10 students in the research and development of a space debris removal mission, leading to the André Kuipers Ruimtevaart prize and an upcoming journal publication.
- Worked on systems engineering, orbit design, and telecommunication architecture design.

MISSION DESIGN TEAM LEAD & ENGINEER

TEAM TUMBLEWEED

📍 Delft, The Netherlands 📅 Nov. 2019 - May 2022

- Participated in the development of a next-generation Mars rover swarm mission in an international team of 70+ students.
- Defined the mission scientific objectives and architecture, formulated mission and system level requirements, and analysed the Mars Relay Network performance for a wind-driven swarm of rovers.
- From May 2021 onwards, I led a team of 10 engineers towards the first complete Tumbleweed mission feasibility analysis which received a positive review from experts from TU Delft, ESA, and NASA.

CANSAT PROJECT TEAM MEMBER

EUROPEAN SPACE AGENCY EDUCATION

📍 Brussels, Belgium 📅 Oct. 2017 - July 2019

- Participated in high school competition to design a micro satellite in a team of 10 students.
- Finished 1st and 2nd on national level in 2019 and 2018.
- Responsible of software development in C++, telecommunication system design, and data analysis.

EDUCATION

MPHIL SCIENTIFIC COMPUTING

UNIVERSITY OF CAMBRIDGE

📍 Delft, The Netherlands 📅 Oct. 2024 - Oct. 2025

- Courses focused on the numerical modelling of continuum mechanics and high performance computing.

MSc AEROSPACE ENGINEERING

DELFT UNIVERSITY OF TECHNOLOGY

📍 Delft, The Netherlands 📅 Sep. 2022 - Sep. 2024

GPA: 8.82/10.0

- Courses focused on astrodynamics, planetary exploration, optimisation and fluid dynamics.
- Part of Delft Aerospace Rocket Engineering society.
- Master thesis on the tumbling dynamics and attitude control retrieval of solar-sails (8.5/10).

BSc AEROSPACE ENGINEERING

DELFT UNIVERSITY OF TECHNOLOGY

📍 Delft, The Netherlands 📅 Sep. 2019 - Jul. 2022

GPA: 8.64/10.0, Top 5% Cum Laude, Honours student

MINOR FLUIDS & NUMERICAL METHODS

ÉCOLE POLYTECHNIQUE FÉDÉRALE DE LAUSANNE

📍 Lausanne, Switzerland 📅 Sep. 2021 - Jan. 2022

GPA: 5.6/6.0, Magna Cum Laude

INTERDISCIPLINARY EXPERIENCE

CHALLENGE PROGRAMME PARTICIPANT

IDEA LEAGUE

📍 Europe 📅 Sep. 2022 - May 2023

- Part of TU Delft delegation for an interdisciplinary educational programme in preparation for leadership roles in society offered to the 40 highest achieving students of IDEA League partner universities.
- Investigated an ill-defined societal problem (Schiphol slot allocation) through political, analytical, economical, and design perspectives.
- Presented results to the key stakeholders to support their efforts in finding a solution.

CERN IDEASQUARE SUMMER SCHOOL

CERN

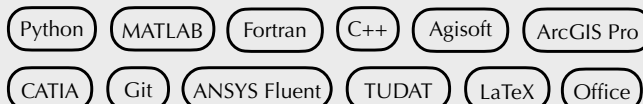
📍 Delft, The Netherlands 📅 May 2021 - Aug. 2021

- Followed lectures on innovation and developed skills in brainstorming, user interviews, and creative thinking.
- Found innovative applications to ATTRACT technologies, built coarse prototypes and pitched the ideas to CERN experts.




SKILLS & INTERESTS

Languages: French: C2 | English: C1 | Dutch: B1

Interests: numerical modelling, space exploration, disruptive concepts, endurance running.



PUBLICATIONS

-  Veithen, L. A. V., and de Vet, S. J. (2024). Morphometrics of regmaglypts based on a 3D Model of the fusion-crust ordinary chondrite Broek in Waterland (L6). In Proceedings of the IMC, Redu, 2023 (pp. 169-176). International Meteor Organization.
-  Veithen, L. and Keller, M. (2024). Predictor-Controller Approach for Q-Law 6th Element Targeting in Low-Thrust Trajectory Design. Proceedings of the 29th International Symposium on Space Flight Dynamics.
-  Bögel E., Buurmeijer H., Veithen L., Meijering F., Alves Teixeira G., Rehling D., Bas Fernández J., van Wolfswinkel P., Zandvliet N., and Struzirski J. (2024). Feasibility Analysis of Small-Size Space Debris Removal in Low-Earth Orbit by Space-Based Laser Ablation. Proceedings of the 29th International Symposium on Space Flight Dynamics.

IN PREPARATION:

- “Solar-Sail Tumbling and Stabilisation using Actuated Tip-Vanes”, as first author. Will be submitted to ISSS 2025 conference.
- “Operationally Robust Hybrid Optimal Control for Low-Thrust Trajectory Optimization”, as co-author. Will be submitted to the Journal of Spacecraft and Rockets.

AWARDS & HONOURS

- André Kuipers Ruimtevaart Prize 2022.
- Cum Laude (highest obtainable, top 5%) distinction for TU Delft Aerospace Engineering Undergraduate Program.
- Honours student of the TU Delft.
- 1st and 2nd CanSat Belgium competition in 2019/18.
- National finalist of ULiège “Aux Encres Citoyens” 2019 competition.