HUGO BUURMEIJER

Passionate Aerospace Engineering student with a strong affinity for robotics and autonomy

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EDUCATION

Master of Science in Aeronautics and Astronautics

Stanford University

September 2022 – Present | Stanford, United States

GPA (current): 4.081/4.0

- Following courses that focus on robotics and autonomy, such as Principles of Robotic Autonomy I and Machine Learning.
- Teaching assistant for Board Level Design class and Spacecraft Design.
- Part of Stanford Student Space Initiative.

Bachelor of Science in Aerospace Engineering

Delft University of Technology

September 2019 – June 2022 | Delft, Netherlands

Highest GPA of class of 450 students (9.1/10 - US 4.0/4.0), honours student

- Completed extra subjects in machine learning and geoengineering as part of honours programme.
- Conduct research at Advanced Laser Diagnostics and Flame Laboratory as an undergraduate student researcher.
- Studied additional computer science courses, such as Object Oriented Programming in C++.

RESEARCH

Summer Research Internship

Harvard University

June 2023 – September 2023 | Cambridge, United States

- Research at the Computational Robotics group directed by professor Heng Yang.
- Presented project on observer design for nonlinear systems.
- Initiated development of autonomy stack for Robotic Bee in collaboration with Robert Wood's Microrobotics Lab.

Undergraduate Student Researcher

Delft University of Technology

July 2021 – June 2022 | Delft, Netherlands

- Advised by professor Alexis Bohlin, I investigated and characterized the interaction between a femtosecond laser-induced plasma filamentation and a picosecond laser beam to identify high-temperature thermometry method.
- Organized, conducted and analyzed 4 experiments successfully using cutting-edge equipment.
- Displayed results at symposium, and published work as co-author in Optics Letters journal.

AWARDS AND ACHIEVEMENTS

- André Kuipers Aerospace Award 2022 by NLF
- Best Performing Student of the TU Delft Aerospace Engineering Undergraduate Class
- Honours Student Aerospace Engineering
- Certificate of NVON (Dutch Society of Science Education) for Exceptional Academic Performance
- Best of College Year 2018/2019 in Physics, Chemistry and Mathematics

EXPERIENCE

Navigation Software Engineer

Lunar Zebro

March 2022 – September 2022 | Delft, Netherlands

- Developed navigation and swarm algorithms to allow for (semi)autonomous operation.
- Used Artificial Potential Functions for navigation in Moon simulation environment.
- Prepared rover for extensive testing at NLR.

Robotics Engineer

Heineken International B.V.

September 2021 – June 2022 | Delft, Netherlands

- Collaborated with multidisciplinary team to build robotic prototype to check the packaging quality in breweries.
- Implemented quality checking software using computer vision and machine learning to automate laborious task and reduce quality checking time by 150%.
- Studied subjects relevant to robotics, such as the Robot Operating System (ROS).
- Project further developed by Heineken, expected to be deployed in 2023.

Geographic Information System Lead Developer

Reef Support

July 2021 – June 2022 | Noordwijk, Netherlands

- Created an online tool that provides local communities and governments insight into the state of coral reefs, mainly focused on the coral lab in Lombok, Indonesia.
- Integrated data models based on data from satellites, underwater autonomous vehicles and drones to improve accuracy of basic sea parameters estimation.
- Collaborated with partners to develop a coral reef classification model to aid scientific researchers with annotating their images.
- Presented results and vision at several events, including Innovate together with co-founder of The Ocean Cleanup.

Mars Rover Developer

Team Tumbleweed

November 2019 – August 2021 | Delft, Netherlands

- Participated in mission with team of 50 students to build next-generation Mars rover.
- Planned the mission outline and scientific objectives and cooperated with multiple international subteams to design the structure of an innovative Mars rover.
- Developed the outer structure collapsibility mechanism and the pods deployment system to optimize volume efficiency.
- Communicated with associated professors and industry experts from, among others, NASA.

SKILLS AND INTERESTS

Software: Git | Python | Julia | Matlab | HTML | C++ | ROS | CAD | LaTeX | Excel | GIS | KiCad

Interests: Space Robotics, Drones, Sustainability, Optimal Control, Soccer, World Travel, 3D Printing