Sahánd Wagemakers

MSc student in Cognitive Robotics

The Netherlands | +31 630771972 | sahandwagemakers@gmail.com |https://www.linkedin.com/in/sahandwagemakers/

I am highly driven, intrinsically motivated and solution-focused. Interested in all aspects of intelligent robotics, with a passion that lies at the intersection of nonlinear control, machine learning and its interaction with embodied intelligence. I have a strong mathematical foundation and am knowledgeable in motion planning, control and software development with an additional background in mechanical engineering. Experienced in working both with simulations and state-of-the-art physical robots.

Education

MSc Cognitive Robotics – Delft University of Technology **GPA: 8.14/10**

Present (expected graduation July 2025)

- Thesis subject: *"Controlling nonlinear normal modes of underactuated robotic systems"*
- Capstone course: "*Indoor robotic barn cleaner through top-view cameras*"-9.7/10
- Specializations: (nonlinear) control, motion planning, (deep) machine learning, computer vision, collaborative robotics, sensor fusion.

BSc Mechanical Engineering – Delft University of Technology **GPA: 7.2/10**

2019-2021

- Thesis subject: "Improving indoor localisation using a smartphone through online constructed magnetic field maps with Gaussian Processes" – 8.4/10

Professional experience

Robotics intern – Stogl Robotics

Sept 2023 - Dec 2023 (40hrs/week)

- Fully designed and developed robot-agnostic, workspace-agnostic and task-agnostic pick-and-place framework in ROS 2, including integration in existing company workflow.
- Implemented and tested framework for variety of tasks and robotic arms.

Software & Robotics engineer – Project MARCH

Aug 2022 - Aug 2023 (50hrs/week)

- Developed & managed full software stack for in-house fully-motorized exoskeleton for paraplegic patients
- Researched model-based locomotion algorithms for exoskeletons, including MPC & hybrid zero dynamics
- Implemented locomotion algorithms through model predictive control (ACADOS) and inverse kinematics
- Developed state estimator of the exoskeleton using encoders, pressure soles and IMUs

Extracurriculars

Tohoku Engineering Summer Programme (TESP) 2023 – Robotics track

Summer 2023

European Robotics Forum Hackathon - Autonomous multi-robot barn navigation case **1st place**

Summer 2022

- Developed the simulation and Lidar object detection algorithm for a feed pusher robot in ROS 2.

IEEE ICRA@40 Rotterdam - Volunteer

Solo video game developer

- Developing a video game using C++ and SFML 2, programming the underlying game architecture

Skills

Robotics	(Nonlinear) control, Motion planning, Machine learning (Deep learning), Simulation, State estimation, Computer vision
Software	C++, Python, Matlab, ROS (2), MuJoCo, Gazebo, Git, SolidWorks (Associate certificate), OnShape
Professional	Research, Problem solving, Scrum, Collaboration, Presenting
Languages	Dutch (*Native*), English (*Fluent C2, 8.5 IELTS*)

References are available upon request