Delft, The Netherlands
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Alexander Keijzer

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Work Experience

Robotics Software Engineering Intern **WAKU Robotics** **SEP '21 - FEB '22**
Dresden, Germany

- Created a mobile robot lab for a real-world environment to test WAKU Sense software integration, implemented robot behavior and task logic in Python and control & navigation stack (SLAM, AMCL localization, etc.) using ROS.
- Feature lead on multiple features that shipped to customers, pinned down customer needs with PMs, designed solutions, implemented backend logic in Go & SQL and pulled in front-end developers where needed.

Control Systems IP **Mercedes-AMG Petronas Formula One Team** **AUG '19 -AUG '20**
Brackley, United Kingdom

- Set up a new time series data analysis tool which expands capabilities to find correlations in system performance measured by 100s of sensors, resulting in a more data-driven development of car control systems.
- Supported trackside team during the races by analyzing live data and monitoring car systems.
- Expanded on-car control and monitoring systems in Simulink and MATLAB, allowing for more efficient error detection and mitigation while the racecars are on track.

Student Projects

Graduate Research Assistant **Delft University of Technology** **FEB '20 - AUG '20**
Delft, The Netherlands

- Designed and created EAGER, a reinforcement learning framework in Python using ROS to allow researchers to seamlessly switch between physics engines and real world robots, funded by the EUs Horizon 2020 initiative.
- Created API for researchers to add robot types and to support different physics engines.
- Set up automated testing, continuous integration and documentation building.

Chief Engineer **Formula Student Team Delft** **AUG '17 - AUG '18**
Delft, The Netherlands

- Full-time technical lead of the development of the "DUT18", a full electric 4WD race car.
- Managed a team of 60 engineering students in 7 departments that designed, produced, tested and raced a Formula Student racecar from scratch.
- Built and analyzed competition simulations, set and tracked performance targets and integrated vehicle design.
- Raced in three competitions in Europe on a month-long tour, winning Formula Student East.

VD & Control Systems Engineer **Formula Student Team Delft** **SEP '15 - AUG '16 & FEB '17 - AUG '17**
Delft, The Netherlands

- Improved and expanded vehicle suspension model written in MATLAB resulting in a better knowledge of various parameter sensitivities on vehicle performance.
- Enhanced control system elements such as state estimation, yaw rate control and traction control resulting in 20% faster 0-100 km/h times on the same hardware and better corner drivability.

Education

- **MSc. Robotics,** Delft University of Technology. **SEP '20 - FEB '23 (EXP)**
  GPA 8.6/10, Thesis: Frequency Domain Analysis for Experience Selection in Deep Reinforcement Learning.
- **BSc. Mechanical Engineering,** Delft University of Technology. **SEP '14- MAY '19**

Courses: planning and decision making (motion planning, trajectory optimization, obstacle avoidance), dynamics and control (kinematic/dynamic modeling), artification intelligence techniques (Bayesian state estimation) and more.

Technologies and Languages

- Languages: Python, MATLAB, Go, Java, C++, SQL
- Technologies: ROS, Linux, Git, Simulink, Redis, PyTorch, Postgres, CATIA, Kafka, Protobuf