

Mason Llewellyn

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Education

Stanford University

M.S. Mechanical Engineering - 2025
B.S. Computer Science - 2023

Experience

Course Assistant

Stanford Product Realization Lab

Sep. 2023 - Present

- Supported students through design and fabrication of parts for more than 6 different engineering courses and research projects.
- Supervised open shop sessions serving more than 1400 students annually.

Workspace Safety Supervisor

Stanford Solar Car Team

Sep. 2023 - Jun. 2024

- Responsible for workspace organization and student safety during solar-car work sessions.
- Led design and fabrication of key components using sheet metal forming, manual, and CNC machining.

Research Intern

Stanford Dynamic Design Lab

Feb. 2024 - Feb. 2025

- Investigated the applications of neural nets for vehicle modeling within a model predictive controller.
- Investigated the impacts of neural net structure and training data selection on controller performance.
- Performed vehicle set-up and maintenance for on-track experiments.

Software Engineering Intern

Waabi

Jun. 2022 - Sep. 2022

- Implemented rule-based method for determining ideal lane position of an autonomous semi-truck on a multi-lane highway.
- Designed and implemented tests to evaluate the strategy in simulation.
- Coordinated with multiple teams to ensure that the lane selection logic worked with the larger decision stack.

Software Engineering Intern

Meta

Jan. 2021 - Mar. 2021

- Developed a regression testing system for the Facebook ad-payouts team that ensured continuous functionality of their payouts system as they migrated to a database format for tracking / distributing payouts to content creators.

Techical projects

Vehicle Simulator

- Used nonlinear optimization to generate optimal racing lines and predict optimal performance for a mk. 7 Volkswagen Golf on real racetracks such as Monza Circuit, Interlagos Circuit, and Portimao Circuit.
- Predicted simulated performance was within ~5 seconds of real lap records for similarly classed vehicles.
- Applied nonlinear optimization online to create a model predictive controller to track the original optimized trajectory despite simulated model-mismatch and disturbances.

Self-Designed Chair

- Employed CNC machining of wood and aluminum to build a compact lounge chair that can assemble / disassemble in one minute and be collapsed into a volume smaller than three cubic feet.

"Not" Stanford Racing Team

- Converted a 1989 Honda Accord into racing specification for participation within the 24 Hours of Lemons amateur racing series unofficially representing Stanford University.

Skills

Programming:

- Python, C, C++

Maching Learning/Optimization:

- JAX, PyTorch, TensorFlow, Casadi, IPOPT

Mechanical:

- Design for Manufacturing, CNC Programming

Languages:

- English (native), Spanish (proficient), Japanese (proficient)