

The UW Formula Driverless team aims to design an autonomous racing car. Our goal is to design for the vehicle's optimal performance at straight-line acceleration, skid pad and autocross events.

Projects we offer include but are not limited to: firmware and PCB design, SLAM (Simultaneous Localization And Mapping), state estimation and dynamic control. **For all controls engineering roles, it is expected that the applicant has taken some controls coursework (ME 547 and 548) or has other relevant experience.** Here are some positions and corresponding skill sets:

Firmware/Electronics Engineer – Electrical Integration

- The applicant is proficient in C programming
- Has experience in microcontroller coding (particularly with STM32s)
- Experience with Altium designer or equivalent is a plus
- Experience with PCB assembly and debugging is a plus

Software Engineer – SLAM Algorithm

- The applicant understands SLAM and probability robotics theory.
- Experience with ROS, Python, and C++ in a Linux environment is preferred.
- Experience with Camera and LiDAR is a plus

Hardware Engineer – Sensor Fusion

- The applicant is proficient in calculus and linear algebra.
- Knowledge with filter (Kalman/EKF/Particle filter) preferred.
- Experience with IMU (inertial measurement unit) calibration is a plus.
- Experience with GPS systems is a plus

Control Engineer – Vehicle Dynamics

- The applicant has basic understanding in classic and modern control theory (PID/MPC)
- Experience in Python and C/C++, or other toolchains (MATLAB Simulink).
- Experience with micro controller preferred (Arduino/Pi/STM32).
- Interests in vehicle dynamics is a plus.

Control Engineer – Hardware-In- Loop

- The applicant develops control strategies in MATLAB Simulink and validates them with HIL test (dSpace/Speedgoat).
- Experience with CAN preferred.
- Knowledge in ISO26262 is a plus.

Control Engineer – Automatic Throttle Control

- The applicant develops a control system for vehicle actuation and deploys them for the car's throttle mechanism
- Knowledge in PID, micro-controller, sensor and actuator preferred.

Please don't hesitate to visit www.uwformula.com to learn about the team. Additionally, you can email Marcus Chu (driverless lead, chum2@uw.edu) or Isaac Remy (tech director, iremy@uw.edu) for more info about positions and projects at UW Formula Motorsports.