Dani White

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Education

Massachusetts Institute of Technology (MIT) *Cambridge, MA*
B.S. in Electrical Engineering and Computer Science (Course 6-2) | GPA: 4.5 *Class of 2021*
Relevant courses: Underactuated Robotics, Feedback Control Systems, Robot Manipulation, Bio-inspired Robotics, Signals & Systems, Circuits, Algorithms (grader), Inference (lab assistant)

Work Experience

ASML *Wilton, CT (Remote)*
Mechatronics Intern *May 2020 to Aug. 2020*
- Developed a new model for measuring position of high precision component
- Validated model against machine data with Python, ensuring precision specifications were met
- Used model to design a control algorithm and verified timing requirements were met through timing budgets
- Reduced damage to essential components and increased machine throughput

Zenuity *Novi, MI*
Decision and Control Intern *Jun. 2019 to Aug. 2019*
- Built fuzzy logic based traffic jam model to identify when to activate Zenuity's autonomous vehicle software
- Conducted literature review of models, implemented them in Python, and tested against vehicle data
- Increased activation accuracy by incorporating new sensor information

Tulip Interfaces *Somerville, MA*
Hardware and Embedded Intern *May 2018 to Aug. 2018*
- Implemented continuous integration pipeline for Tulip's IO Gateway using Jenkins
- Ported custom Yocto operating system from 32-bit ARM to 64-bit x86 architecture

Activities

MIT Motorsports (MIT Formula SAE Electric)
Controls Lead (2020 and 2021 vehicles) *Jun. 2019 to present*
- Led a small team of mechanical and software engineers responsible for the design, implementation, testing, and validation of control strategies formula-style electric racecars
- Developed launch control software for 2020 vehicle using normal force estimates and temperature dependent tire models, including proof-of-concept MATLAB/Simulink simulation and C++ implementation
- Managed the development of other control strategies, including power limiting software using an empirical efficiency map and safety controllers to prevent battery undervoltage and overheating
- Imposed new testing procedures for safe and effective integration of controls software
- Served on executive team, weighing in high level team decisions like vehicle architecture and timeline

Software Lead (2019 vehicle) *Jun. 2018 to Jun. 2019*
- Managed a software team of 8 people that developed C and C++ code for PCBs in vehicle embedded system
- Developed vehicle control unit state machine, SD card data logging using FreeRTOS, and controls
- Enforced software engineering best practices like unit tests and consistent code reviews for the first time

Software Team Member (2018 vehicle) *Sep. 2017 to Jun. 2018*
- Developed C code for NXP and STM chips on sensor nodes, driver interface, and vehicle control unit

Research Experience

Robust Robotics Group *Nov. 2019 to Jan. 2020*
- Built preliminary ROS simulation for camera drone planner (Supervising professor: Nicholas Roy)

Space, Telecommunications, Astronomy, and Radiation Laboratory *Dec. 2018 to Mar. 2019*
- Ported MATLAB simulation of satellite crosslinks and downlinks to Python (Supervising professor: Kerri Cahoy)

Skills & Interests

Skills: C, C++, Python, Git, Microcontrollers, NumPy & Matplotlib, Bash, Linux, MATLAB, Simulink, ROS, Drake
Interests: Robotics, classical control, optimal control