Dani White

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Education

Massachusetts Institute of Technology (MIT) Cambridge, MA

M.Eng. in Electrical Engineering and Computer Science | GPA: 5.0 *Graduating May 2022*

Courses: Robot Manipulation, Nonlinear Control, Underactuated Robotics, Bio-inspired Robotics

Teaching: Feedback Control Systems TA (Spring 2021), Robot Manipulation TA (Fall 2021)

B.S. in Electrical Engineering and Computer Science (Course 6-2) | GPA: 4.5 *Graduated Feb. 2021*

Courses: Feedback Control Systems, Signals & Systems, Robotics, Algorithms, Circuits

Work Experience

Tesla | Vehicle Software Integration Intern Palo Alto, CA | *Jun. 2021 to Aug. 2021*

- Drove issues I owned to completion by writing C and C++ software fixes, testing them on vehicles, coordinating with validation teams, and soliciting feedback and reviews from other engineers
- Fixed high priority bugs with turn signals and garage door opener to support Plaid Model S & X delivery
- Prototyped new button behavior code for steering yokes on tight timelines in order to iterate quickly

ASML | Mechatronics Intern Wilton, CT (remote) | *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 | Decision and Control Intern Novi, MI | *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 | Decision and Control Intern Somerville, MA | *May 2018 to Aug. 2018*

- Implemented Jenkins CI pipeline and ported custom Yocto OS to x86 architecture for Tulip's IO Gateway

Research Experience

MIT Learning and Intelligent Systems Group Cambridge, MA | *Jan. 2021 to present*

- Developing controller for the Franka Emika Panda robotic arm which folds paper without grasping it
- Responsible for system modeling, control architecture and design, testing in simulation, C++ software implementation, and real-world testing
- Implemented feedforward controller with adaptive control accounting for friction in Drake simulation
- Currently integrating on physical system to test on simplified prototype

Activities

MIT Motorsports (MIT Formula SAE Electric) Cambridge, MA

Controls Lead *Jun. 2019 to Jun. 2021*

- Led a small team of mechanical and software engineers responsible for the design, implementation, testing, and validation of control strategies for 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 *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 *Sep. 2017 to Jun. 2018*

- Developed C code for NXP and STM chips on sensor nodes, driver interface, and vehicle control unit

Skills

C, C++, Python, Git, Microcontrollers, NumPy & Matplotlib, Bash, Linux, MATLAB, Simulink, Drake