

Will Martin

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EDUCATION

University of Wisconsin-Madison

MS: Computer Science

- GPA: 3.9/4.0

University of Iowa

BSE: Mechanical Engineering, Minors: Computer Science, Mathematics

- GPA: 4.0/4.0

Fall 2022 – Spring 2024

Madison, WI

Fall 2018 – Spring 2022

Iowa City, IA

EXPERIENCE

SpaceX (Starlink)

Software Engineering Intern (Satellite Phased Array Team)

- Wrote embedded software (C++) for proprietary, in-flight, satellite ASICs
- Decreased phased array antenna boot time by 85% across satellite fleet
- Refactored on-ground and on-orbit antenna calibration code (proprietary language)
- Extensively verified software on ground-based HITL (hardware-in-the-loop) testbeds

Summer 2023

Seattle, WA

Argonne National Lab

Graduate Research Aide (Advanced Mobility Technology Lab)

- Enhanced electric and autonomous vehicles energy consumption testing
- Designed vehicle CAN message decoder (Python) with
 - * Statistics-based signal boundary, endianness, and signedness prediction
 - * Bit-level visual tools to verify predictions and plot time-series data

Summers 2021 & 2022

Chicago, IL

University of Wisconsin-Madison

Graduate Teaching Assistant (Introduction to Algorithms)

- Taught greedy algorithms, divide and conquer algorithms, dynamic programming, network flow, and intractability
- Lead one discussion section per semester of ~35 students

Fall 2022 – Spring 2024

Madison, WI

PROJECTS/LEADERSHIP

Course Projects

- Operating Systems (C): distributed file system, UNIX shell, parallel sort algorithm
- Computer Architecture (Verilog): 5-stage pipelined processor (36 instruction ISA, two-way set-associative cache, forwarding, and branch prediction)
- Compilers (Java): compiler (scanner, parser, optimizer, and MIPS code generation)

Fall 2022 – Spring 2024

Robotics at Iowa

Co-President/Controls Team Lead

- Developed ROS control network (Python) for competitive, 50 kg robot
 - * Hardware: NVIDIA Jetson, DC motor controllers, GPS, IMU, RGB-D cameras
 - * Software: PyQt graphical user interface, Kalman filter
- Led bi-weekly meetings and organized over \$5,000 in funding annually

Fall 2018 – Spring 2022

Senior Design Project

Inverted Pendulum Educational Display

- Engineered nonlinear dynamics model and controller for inverted pendulum system
- Wrote system simulator (Python) using an ODE solver to estimate the system state with a controller input in an ideal scenario
- Composed embedded hardware code (Arduino C++) to read encoder values, drive stepper motor, and calculate a control signal in real-time

Spring 2022

TECHNICAL SKILLS

Languages: C/C++, Python, Bash, Java, Verilog, CUDA C++

Developer Tools: Git, Bazel, Docker

Libraries/Frameworks: NumPy, Matplotlib, Pandas, ROS (Robot Operating System), OpenCV