Will Martin

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Education

University of Wisconsin-Madison — Fall 2022 – Spring 2024
MS: Computer Science — *Madison, WI*
- GPA: 3.9/4.0

University of Iowa — Fall 2018 – Spring 2022
BSE: Mechanical Engineering, Minors: Computer Science, Mathematics — *Iowa City, IA*
- GPA: 4.0/4.0

Experience

SpaceX (Starlink) — Summer 2023
Software Engineering Intern (Satellite Phased Array Team) — *Seattle, WA*
- 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

Argonne National Lab — Summers 2021 & 2022
Graduate Research Aide (Advanced Mobility Technology Lab) — *Chicago, IL*
- 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

University of Wisconsin-Madison — Fall 2022 – Spring 2024
Graduate Teaching Assistant (Introduction to Algorithms) — *Madison, WI*
- Taught greedy, divide and conquer, dynamic programming, and network flow algs
- Lead one discussion section per semester of ∼35 students

Projects/Leadership

Course Projects — Fall 2022 – Spring 2024
- Operating Systems (C): distributed file system, UNIX shell, parallel sort algorithm
- Computing (Metal, CUDA C++): benchmarked GPU ops on M1 vs GTX architectures
- 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)

Robotics at Iowa — Fall 2018 – Spring 2022
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

Senior Design Project — Spring 2022
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

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