Hadi Ahmed

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Education

Purdue University – West Lafayette, IN **December 2022**
Bachelor of Science, Computer Engineering 3.75/4.0 GPA

Work Experience

Navistar Inc – Melrose Park, IL
Electrical and Electronics Validation Intern **May 2021 – August 2021**

- Conducted vehicle-level testing of all electrical subsystems while analyzing CAN bus data
- Diagnosed and repair hardware and software errors using Vector CANalyzer, NI LabVIEW and Navistar Diamond Logic Builder
- Wrote and reviewed test procedures covering normal and failure conditions for electrical features
- Researched, designed, and implemented a test harness to capture and modify data from camera and lidar sensors onboard autonomous vehicles to test data corruption handling

Purdue Aerial Robotics Team – West Lafayette, IN
Electrical Team Lead **October 2020 – Present**

- Collaborated with teammates to create an autonomous Unmanned Aerial Vehicle (UAV) for competition in the Association for Unmanned Vehicle Systems International student competition
- Oversee 4 sub teams creating flight control systems, image transmission systems, autonomous flight software, and telemetry capture for the UAV
- Program autonomous flight software and image transmission systems utilizing the MavSDK library, ProtoBuf messaging, and Python 3

Purdue University – West Lafayette, IN
Software Saturdays Lead **June 2020 – Present**

- Oversee course curriculum and design presentation material for weekly learning sessions
- Coordinate with Purdue administration to request funding, hire mentors, and record sessions
- Increase program participation by 119% while reducing overall spending by 58%
- Instructed participants in web development with JavaScript using the ReactJS and VueJS frameworks

Project Experience

USB Receiver/Transmitter AHB Peripheral

- Created a USB 2.0 Full Speed peripheral connected through an AHB-Lite bus with Verilog
- Implemented finite state machines, bit stuffing timing synchronization, and CRC error detection,
- Designed component- and design-level SystemVerilog test benches to simulate and verify design response on Mentor Graphics Questa
- Synthesized and further verified design met timing constraints using static timing analysis reports

Autonomous Vehicle Data Manipulation

- Manipulated incoming camera and lidar data from autonomous vehicle sensors to the autonomous vehicle controller to test potential hardware and connectivity issues
- Devised a multi-threaded C++ program and a parallelized image processing pipeline with user interface
- Successfully introduced overexposure, underexposure, noise, blur, and vibration to data streams

Technical Skills

C, C++, Verilog, SystemVerilog, Python, ARM Assembly, JavaScript, ReactJS, VueJS, FPGA, MATLAB

Honors and Awards

Purdue Dean's List and Semester Honors **May 2021**
Boy Scouts of America Eagle Scout Award **October 2018**