Hadi Ahmed

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Education

Purdue University – West Lafayette, IN **December 2022**
Bachelor of Science, Computer Engineering 3.57/4.0 GPA

Work Experience

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 system, autonomous flight software, and the telemetry capture for the UAV
- Organize deliverable software and hardware to the Electrical Team from different Team Leads
- Document research, designs, testing, and specifications for a technical brief to competition organizers

Image Transmission Project Lead **September 2019 – October 2020**

- Designed an image transmission system to capture, process, and transmit an image from the UAV to the ground station
- Configured a Raspberry Pi to transmit the images using a Nginx web server and media streaming protocol
- Rewrote Python 2 ArduPilot library into a modern Python 3 implementation for flight control software

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

- Oversee course curriculum and design presentation material for weekly learning sessions
- Distribute marketing material to hire teaching mentors and recruit potential participants
- 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/ES6 and the ReactJS framework

Project Experience

Steganographic Encoder **January 2020 – February 2020**

- Coded a steganographic encoder and complementary decoder to place and retrieve a text file within a cover image file with least-significant-bits encoding using Python and Python libraries
- Implemented user-decided variable bit encoding to allow for large text files to be placed within a small image

Simple Cipher **February 2017 – September 2019**

- Programmed a basic binary text cipher with user interface using Java and Java Swing libraries
- Manipulated text encodings to transform Latin characters into UTF-16 Unicode characters
- Devised an algorithm to encode text into randomly generated ciphertext using Morse code and a pseudorandom number generator

Arduino and FPGA Tic-Tac-Toe **April 2019 – May 2019**

- Created a game of Tic-Tac-Toe played by two algorithmic computer players programmed in C
- Constructed a game board made of LEDs powered by a Spartan 7 Field Programmable Gate Array
- Designed a custom 9 address, 2-bit memory register and accompanying control logic

Technical Skills

Java, C/C++, MATLAB, Python, HTML/CSS, JavaScript, ReactJS, System Verilog, Circuit Analysis, FPGA Design

Honors and Awards

Purdue Dean's List and Semester Honors **December 2019**
Illinois State Seal of Commendation in Spanish **May 2019**
Boy Scouts of America Eagle Scout Award **October 2018**