Ajin Sunny

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TECHNICAL SKILLS

- **Software:** Python, C++, C, MATLAB, Embedded Linux, Java, JavaScript, Ruby on Rails, Objective-C, SQL, PHP, HTML5, CSS3, Git
- **Hardware:** ARM, Arduino, ESP8266, DAC, SPI, I2C, Magnetics, SolidWorks, Autodesk Fusion, CNC

WORK EXPERIENCE

University of Kentucky | Embedded Software Engineer, Graduate Research | Lexington, KY Jan 2018 - Dec 2019

- Designed and manufactured Electromagnetic system for small satellite formations project using experimental test bed that demonstrated formation control using SolidWorks and Autodesk Fusion.
- Implemented decentralized control algorithm to set relative position and velocity of electromagnetic actuation system using ToF LiDar sensors, C++, and Arduino.
- Created sinusoidal actuation of electromagnetic coils using digital signal processing, I2C, and SPI protocols to set relative position and velocity control of electromagnetic system utilizing Arduino.
- Calibrated and analyzed 100+ experimental data sets using Python, MATLAB and Git version control systems to demonstrate that decentralized control algorithm could control small satellite velocity and position.

University of Kentucky | Mechanical Engineering, Graduate Teaching | Lexington, KY Aug 2017 - May 2018

- Assisted 2 professors for grading homework assignments for 95+ students for 2 semesters; tutored students for 1-on-1 session on controls engineering courses.

University of Kentucky | Electrical Engineer | Lexington, KY Aug 2013 - Aug 2015

- Tested new silicon-based solar array that replaced previous generation of solar arrays of car using digital multimeter, oscilloscope, MS Excel and Python, producing over 50% higher power output.
- Prototyped 50+ PCBs for Battery Management System (BMS) of solar car utilizing soldering equipment.
- Performed data acquisition such as battery temperature, battery voltage, battery current, and maximum power point using CAN bus, power electronics, and Python.

EDUCATION

Master of Science in Mechanical Engineering, *University of Kentucky* Dec 2019
Bachelor of Science in Electrical Engineering, *University of Kentucky* May 2017

PROJECT WORK

Codecademy Data Science | Data Scientist | live 2019

Online Data Science program for Python developers to learn within community of Software Engineers.

- Pursued foundational data science and data visualization concepts to understand machine learning.
- Visualized World Cup data using Matplotlib and Python's Seaborn packages to gain insights on football trends.
- Compared survey responses of election results with actual results using Numpy to determine variance.

KRUPSComm | Electrical Engineer 2016

Low-cost radio communication system for atmospheric re-entry capsule prototype.

- Collaborated on team of # electrical engineers to develop radio communication protocol through researching different signal modulation techniques, resulting in over 80% signal transmission throughput.
- Conducted software simulation tests for low RF modules using SmartRF Studio from Texas Instruments.

IEEE Southeastcon Hardware Competition | Electrical Engineer 2015

Student teams from various universities affiliated with IEEE in Southeast Region build robots to compete autonomously.

- Led team of 4 undergraduate sophomore students to design, build and compete their robots autonomously.

LEADERSHIP + AWARDS

Graduate Assistantship, *University of Kentucky* 2017
IEEE 24 hour Extreme Competition, *University of Kentucky* 2014
IEEE Student Paper Competition, *University of Kentucky* 2013