Andrew Hsu

Software Engineer

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My project portfolio: https://drewhsu86.com • My Github: https://github.com/drewhsu86

Software engineer with background in electrical engineering. Looking to shift careers by leveraging experience in mathematics and research and dive heavily into programming. As a dedicated, logical and open-minded individual, I aim to bring my strengths in problem solving and a calm, measured approach to every professional challenge.

TOPICS AND TOOLS

- Javascript
- HTML/CSS
- Postgresql
- Matlab
- React
- Nodejs
- MongoDB
- Power/Energy Systems
- Angular
- Express
- Ruby-on-rails
- Linear Algebra
- Python
- SQL
- Jest/Enzyme
- Differential Equation

EXPERIENCE HIGHLIGHTS

GENERAL ASSEMBLY, New York, NY, March 2020 – June 2020

Software Engineering Fellow

- Participated in a 12-week full-stack web development and programming bootcamp
- Javascript – DOM manipulation and API calls using both promises and asynchronous functions
- React, Storybook and Jest/Enzyme testing
- Express backend servers
- Mongodb and Postgresql databases
- Ruby-on-rails application development
- Please see my project links!

EITRI FOUNDRY, Orlando, FL, January 2017 – March 2020

Senior Technology Manager

As a founding member of a solar energy developer and engineering, procurement, construction (EPC) company, I wore many hats both as a project developer as well as an electrical engineer.

- Created numerous preliminary site plans and electrical layouts and Request-For-Proposal (RFP) response documents to allowed Eitri to bid for solar projects.
- Under the supervision of a licensed professional engineer, prepared Issued-For-Construction engineering diagrams for 3 solar sites in Ohio, totaling 15 million USD in project sizes.
- Developed a number of tools to aid in business development and engineering
    - Excel tool that shows potential savings from reduced power usage due to solar for Ohio municipality, as well as potential savings from battery storage projects
    - Excel tool that calculated correct solar project sizing to minimize reverse power flow
    - AngularJS PV wire sizing tool – calculates correct wire sizing for solar site engineering using NEC 2017 tables

NASA AMES RESEARCH CENTER, Moffett Field, CA, November 2015 - November 2016

Post-Doctoral Researcher

Conducted research on two power systems projects.

- Assembled testbed and managed preliminary testing for High Voltage Hybrid Electric Plane (HVHEP) project and oversaw simulations of motor output for HVHEP project.

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- Completed research on impact of degraded electronic speed controllers (ESCs) on motor performance and heat production, including designing testbed and sensors to create data on speed, voltage, current and temperature.

CARNEGIE MELLON UNIVERSITY, Pittsburgh, PA, September 2012 - May 2013

Teaching Assistant

Teaching assistant in two courses: "Smart Grids and Future Electric Energy Systems" and "Signals and Systems."

- Created and presented recitation lectures. Developed midterm and final exams.
- Designed homework assignments and evaluated student performance on homework. Mentored students to enhance their understanding of the presented material.

EDUCATION & CREDENTIALS

General Assembly – Software Engineering Immersive | General Assembly, New York. NY

Ph.D. in Electrical and Computer Engineering | Carnegie Mellon University, Pittsburgh, PA

Thesis: A Network Graph-Based Framework for Modeling, Calculating and Controlling Feasible Electric Power Delivery

Master of Science in Electrical and Computer Engineering | Carnegie Mellon University, Pittsburgh, PA

Bachelor of Science in Electrical Engineering | Columbia University, New York, NY

PATENTS

Ilić. M. and Hsu, A. (2015). "General Method for Distributed Line Flow Computing with Local Communications in Meshed Electric Networks," US Patent Number 905453, filed January 5, 2012, issued June 9, 2015.

Ilić. M. and Hsu, A. (Application). "Autonomous Methods, Systems, and Software for Self-Adjusting Generation, Demand, and/or Line Flow Reactances to Ensure Feasible AC Power Flow," US Patent Application Number: 20140371940, filed June 14, 2014