Derek Black

https://github.com/bit-dream

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Education

Kansas State University — Manhattan, KS
Master of Science — *May 2017*

- **Areas of Study**: Control Theory, Mechatronics, and Software Development
- **Thesis**: Development and feasibility of economical hardware and software in control theory application

Kansas State University — Mahattan, KS
Bachelor of Science - Mechanical Engineering — *Dec. 2014*

Experience

Altec — Roanoke, VA
Staff Controls Developer — *Aug 2017 - Present*

- Led and completed multiple major software releases for Altec derricks that added critical features need by Altec customers and other Altec engineers/associates.
- Developed software I/O mapping system for Altec derricks that allowed other Altec associates to more easily deploy custom unit applications without relying on special development and firmware re-releases, saving Altec countless man-hours across multiple teams and led to quicker product releases to Altec customers.
- Aided in development of Derrick auto-calibration system that minimized unit ship out time
- Integrated rotation interlock system into the Derrick product line to aid in safe usage/prohibit unsafe work practices for Altec customers.
- Released multiple internal tools and applications targeted at MATLAB/Simulink that saved other controls developers hundreds of hours of development time.
- Deployed, developed, and managed internal application with MATLAB that enabled multiple teams within the Altec controls department to release, distribute, and aid with version management of internal tools produced by controls developers.
- Designed logic with Python's pandas/numpy with datasets pulled via SQL/Amazon Athena to generate customer machine metrics and gather insights for future feature enhancements for existing Altec products.
- Wrote and released multiple web pages leveraging HTML and Bootstrap for Altec's AXIS service tool. Pages are utilized and interacted with by customers, service technicians and other Altec associates across multiple product lines.
- As a lead developer on multiple projects, have mentored developers on best practices, tooling, and conducted multiple design reviews.
- Development of LMAP (Load Moment Area Protection) validation application for Altec product engineering using Python with usage of Kvaser's canlib to help automate all manual testing.
- Used Python to develop web page release and staging tool that integrates with SVN to help speed up deployment for the Altec AXIS service tool.

Kansas State University — Manhattan, KS
Lab Instructor - Control of Mechanical Systems — *Aug. 2016 - Aug. 2017*

- Prepared and delivered 45 minute lab lectures for a class size of 30+ students
- Held office hours to faciliate student growth in the classroom

Projects

CAN-DBC Open source Typescript project to aid in the parsing of Vector's ASCII based translation file used to apply identifying names, scaling, offsets, and defining information, to data transmitted within a CAN frame.

Cocktail Hour Small web app that generates uniquely crafted cocktails receipes based on keywords such as artist, album names, or events. Front end developed with React/NextJS with Chakra UI. Backend written with Python utilizing FastAPI and Spacy for word vector similiarity score ranking. Deployed with Docker and DigitalOcean. www.cocktailhour.tk

Programming Skills

Languages: MATLAB, Python, Javascript, Typescript, SQL, LaTeX
Technologies/Other: React, Next, Simulink, Stateflow, CANape, HTML, CSS, Bootstrap, CAN