Derek Black

https://github.com/bit-dream

Email : derekblackj@gmail.com

Mobile : +1-785-432-0777

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*
    - **Tensorflow**: TensorFlow is an open source software library for numerical computation using data flow graphs; primarily used for training deep learning models. Worked on APIs and performance for training models on Tensor Processing Units (TPU).
    - **Apache Beam**: Apache Beam is a unified model for defining both batch and streaming data-parallel processing pipelines, as well as a set of language-specific SDKs for constructing pipelines and runners.
    - **Notifications**: Service for sending email, push and in-app notifications. Involved in features such as delivery time optimization, tracking, queuing and A/B testing. Built an internal app to run batch campaigns for marketing etc.
    - **Nostos**: Bulk data processing and injection service from Hadoop to Cassandra and provides a thin REST layer on top for serving offline computed data online.
    - **Workflows**: Dataduct an open source workflow framework to create and manage data pipelines leveraging reusables patterns to expedite developer productivity.
    - **Data Collection**: Designed the internal survey and crowd sourcing platform which allowed for creating various tasks for crowd sourcing or embedding surveys across the Coursera platform.
    - **Dev Environment**: Analytics environment based on docker and AWS, standardized the python and R dependencies. Wrote the core libraries that are shared by all data scientists.
    - **Data Warehousing**: Setup, schema design and management of Amazon Redshift. Built an internal app for access to the data using a web interface. Dataduct integration for daily ETL injection into Redshift.
    - **Recommendations**: Core service for all recommendation systems at Coursera, currently used on the homepage and throughout the content discovery process. Worked on both offline training and online serving.
    - **Content Discovery**: Improved content discovery by building a new onboarding experience on coursera. Using this to personalize the search and browse experience. Also worked on ranking and indexing improvements.
    - **Course Dashboards**: Instructor dashboards and learner surveying tools, which helped instructors run their class better by providing data on Assignments and Learner Activity.

- **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 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   **Technologies**: React, Next, Simulink, Stateflow, CANape