
EMPLOYMENT

Product Development Engineer	Ford Motor Company	Jun 2020 – Present
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Palo Alto, CA

- Designed, built, tested, and deployed data-intensive web application to monitor Electric Vehicle (EV) smart charging at Ford Greenfield Labs (GFL) in order to enable load balancing and predictive analytics.
- Presented application to Ford executives, including Director of Research and Advanced Engineering (R&A), resulting in decision to scale product to Ford's broader network of charging stations (> 12,000).
- Defined startup landscape pertaining to application of Artificial Intelligence (AI) to Materials R&D and initiated new project to explore integration of AI into Ford R&A.

Sr. Materials & Process Engineer	Kitty Hawk	Jun 2015 – Aug 2019
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Mountain View, CA

- Optimized data acquisition platform for full-scale structural testing (fuselage, landing gear, wing, etc.) by standardizing hardware, data management, and LabVIEW code. Saved 3 weeks/year of work hours per structurally tested part.
- Specified quality control procedure (Statistical Process Control and A/B testing) to detect anomalous manufacturing processes and batches of material. Eliminated all failures occurring during structural testing.
- Established Maximum Operating Temperature and branding colors of Cora by modeling its temperature response to environmental conditions and surface color.

EDUCATION

GPA: 3.71/4.0	Carnegie Mellon University	Dec 2020
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- M.S. in Electrical and Computer Engineering
- Foundations of Software Engineering, Intro to Deep Learning, Advanced Probability and Statistics, Mathematics for Machine Learning, Intro to Machine Learning, Intermediate Deep Learning, Financial Innovation Management

GPA: 3.70/4.0	University of Southern California	May 2015
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- B.S. in Chemical Engineering
- Ronald G. Minet Award for Best Senior Design Project in Chemical Engineering Department

PROJECTS

- **Real-Time Stock/Crypto Mention Tracking** (Spring 2021). Deployed dashboard to track most mentioned stocks on reddit and predicted recent surge (2/24) in GameStop price 3 hours early. (username: Ingenio, password: Ingenio)
- **ETL from 3NF to Star Schema** (Spring 2021). Performed ETL in Postgres from 3NF to star schema and reduced query execution time to aggregate sales per movie, month, and city of pagila database by 100%.
- **ETL Pipeline from S3 to Redshift** (Spring 2021). Created pipeline from JSON logs in S3 of user activity and metadata into Redshift database with star schema and distribution strategy that reduced time of common queries by 10 – 60%.
- **Spark ETL from JSON to Parquet** (Spring 2021). Utilized EMR cluster with Apache Spark to load JSON files from S3, process data in distributed manner, and load tables back into S3 in the form of partitioned Parquet files.
- **Image Captioning with TensorFlow and TPUs** (Spring 2021). Made significant extensions to the best TensorFlow image captioning tutorial online, including Bleu Score calculation and Beam Search decoding.
- **Easy Object Detection with TensorFlow Hub** (Fall 2020). Developed interface with TensorFlow Hub Object Detection API allowing researchers to benchmark state-of-the-art object detection models on personal hardware with one line of code.
- **Machine Learning Models from Scratch** (Fall 2019/2020). Coded APIs for dense neural network, CNN, RNN, VAE, RBM, Word2Vec, HMM and decision tree with NumPy as the only external library.
- **IoT System to Enable Adaptive Sampling** (Spring 2020). Prototyped wireless IoT system to enable adaptive sampling of stream surface velocity and depth. Presented system to USGS which led to funding to extend project.
- **API Store Web Application** (Fall 2019). Scraped 2546 APIs from ProgrammableWeb, added to SQL database, and enabled search (via Apache Lucene). Trained LDA model (via Mallet) for automatic categorization of APIs.

Skills

Python, SQL, C++ / NumPy, pandas, psycopg2, Boto3, PySpark, scikit-learn, TensorFlow / Linux, Docker, AWS, Git / Redshift, MySQL, PostgreSQL, TimescaleDB, MongoDB / Grafana, Dash, Tableau / ReactJS, HTML, CSS / Airflow, cron, Apache Spark