HSU-SHENG (JOHNSON) KO

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EDUCATION

Columbia University New York, NY
Master of Science, Operations Research Expected Dec 2022

- Relevant course work: Optimization, Probability & Statistics, Applications in Financial Engineering, Data Analytics, Sports Analytics

University of Washington Seattle, WA
Bachelor of Science, Mechanical Engineering Mar 2018

- Relevant course work: Javascript, Scientific Computing, Linear Algebra

WORK EXPERIENCE

Terex Aerial Work Platforms (Genie) Redmond, WA
Design Engineer May 2018 - Apr 2020

- Responsible for validation and implementation of over 500 newly-sourced steel, hydraulic, and electrical components covering 3 major product lines, contributing to the realization upwards of $4M in cost savings.
- Managed project timelines across 5 facilities as the Global Pump Validation Lead and minimized duplication of work and unnecessary allocation of resources, thereby implementing new products ahead of schedule and resulting in an additional upwards of $100K in cost savings.
- Designed model to predict price of new parts using several disparate data sets across engineering and global supply chain, increasing price prediction accuracy from 70% to 94%.
- Created an automated machine weight data entry, cleaning, analysis, and storage pipeline based on customer feedback, ensuring quality of assembled machines and serial label information, and improving brand perception.
- Developed and hosted a web-based tool (Flask) that queries BOM data directly from ERP and presents differences in a user-friendly and exportable format, cutting down task time by 100%.
- Created Python scripts to automate SQL queries, report generation, and file transfers to reduce SG&A.

UWashington Formula Motorsports Seattle, WA
Drivetrain Lead Sep 2016 - Mar 2018

- Managed a 6-member team and project timelines, with a 3rd place overall finish at national competition.
- Executed top-level design decisions around the electric drivetrain system such as packaging, and manufacturing.
- Justified optimal gear reduction of the car based on simulation results of the competition drive course.
- Established sponsor relations with local businesses and received over $10K in value of services and donations.

SKILLS & CERTIFICATIONS

Data Analytics Python (Matplotlib, Pandas, Sklearn, Flask, Plotly-Dash), SQL, Matlab, Java, HTML, CSS.
Mechanical Design Solidworks, NX, Cura, NCEES Engineer in Training, NIMS Machining Level 1.

RELEVANT PROJECTS

Non-Fungible Token Analysis and Price Prediction
Course Project Dec 2021

- Compiled NFT (Cryptopunks) attribute, transaction, and market data from disparate data sources.
- Utilized KNN to group similar tokens together, thereby determining the inherent price and rarity of clusters.
- Modeled each cluster's price changing behavior using various classification methods in order to predict future rises in price.

NBA Team Ranking and Betting Models
Course Project Dec 2021

- Utilized preseason Vegas odds in setting the baseline ranking of teams at the start of a season.
- Constructed dynamic team ranking models that updated as the season progressed using both the Simple and ELO rating systems.
- Investigated the prediction power of the models while implementing the Kelly fraction betting strategy for betting against Vegas spreads of regular season games.