# HSU-SHENG (JOHNSON) KO

85 Adams Street, #17B, New York, NY 11201
206 399 8021 | hk3176@columbia.edu | linkedin.com/in/hsushengko | jko0401.github.io

## EDUCATION

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

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

## 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 implemented 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.

**Daimler Trucks North America** — Portland, OR
**Mechanical Engineering Intern** — Jul 2017 - Oct 2017

- Designed prototypes of 3 engine cooling package components while minimizing weight and cost added to assembly.
- Constructed engine cooling package simulation model using KULI and validated results using on-road driving data.

## 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

**FSAE Composite Battery Box - Capstone**

- Wrote a MatLab script that utilizes Classical Laminate Theory to predict laminate and sandwich panel deflection under 3-point bending to within 10% of testing results, streamlining design and reducing material consumption.
- Conducted tests to prove structural equivalency of the box while decreasing overall weight by 13% from previous aluminum design.

**Exploration of Electronic Bass Music Genres**

- Scraped five popular music-discovering channels on YouTube for music in the Trap and Dubstep genres.
- Connected Spotify's audio features data to tracks that could be found in Spotify's library.
- Constructed and hosted an interactive dashboard through Dash Plotly with a PostgreSQL backend where one can compare tracks of different artists and discover similar tracks.