

# HSU-SHENG (JOHNSON) KO

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## PROFESSIONAL EXPERIENCE

### ASML

Wilton, CT

#### Business Engineer, Analyst

Jan 2023 - Present

- Established process mining competency as the sole specialist responsible for the entire ETL process, constructed SQL data models, built Celonis dashboards tracking performance trends of key business processes across manufacturing, logistics, and finance sectors.
- Mapped the factory scrap process, identified key milestones, determined responsible owners, and scheduled automated task reminders thereby decreasing overall cycle time by 2 weeks and reduced material holding cost by ~\$500K/year.
- Enabled live tracking of material movements through the return-to-vendor flow, ensuring defects are shipped and repaired within SLA.
- Developed and implemented a standardized process for consolidating and reporting sensitive factory-wide inventory data using Python, ensuring regulatory compliance (SOX), and reducing manual query and document creation time by over 90% through automation.
- Partnered with senior leadership and cross-functional teams to define technical requirements and scope for analytics projects, ensuring alignment with business objectives.
- Supported team's transition to Agile, improved intake, refined stories, and reported on monthly product issues as the KPI owner.
- Advocated for the establishment of a data scientist discipline by identifying business use cases as extensions of the team's current capabilities and provided a vision for its growth.

#### Production Engineering Data Analyst Intern

Jun 2022 - Sep 2022

- Conducted over 100 hours of time studies and provided new baselines for labor hours across 3 work centers to drive future capacity planning and move rate targets while identifying over 20 process improvement opportunities and procedural errors
- Established methodology, structure, and reporting for future time studies.
- Implemented a new compilation process of 2148-image datasets using MatLab and reduced inspection time by over 50%.

### Terex Aerial Work Platforms (Genie)

Redmond, WA

#### Data Analyst/Design Engineer

May 2018 - Apr 2020

- Constructed a steel component pricing Random Forest model using disparate data sets across engineering and global supply chain, boosting price prediction accuracy from 70% to 94%.
- Automated processing of machine serial data, ensuring data quality and eliminating 15 minutes of cycle time per machine.
- Wrote Python scripts to automate SQL queries, report generation, and file transfers to reduce SG&A.

## RELEVANT PROJECTS

### AI-Powered Meal Recipe Web App (Work in Progress)

#### Personal Project

Aug 2024

- Built a full-stack web app using React, Python and hosted on Replit (paused due to cost), which has authentication, document parsing, text embedding, and LLM retrieval Q&A features, allowing users to organize and explore recipes using natural language.

### NYPD Dispatch Simulation Model

#### Course Project

May 2022

- Constructed a discrete event simulation model of NYPD dispatch using historical crime and response data, providing means to analyze efficiency of the current system.
- Proposed different working and back-up policies across precincts to decrease response time by 69% with the same number of vehicles.

## EDUCATION

### Columbia University

New York, NY

#### Master of Science, Operations Research

Dec 2022

- Relevant coursework: Probability & Statistics, Optimization, Stochastic Models, Simulation, Machine Learning, Deep Learning, Data Analytics, Transportation & Logistics Analytics, Supply Chain Analytics, Sports Analytics, Analytics on the Cloud.

### University of Washington

Seattle, WA

#### Bachelor of Science, Mechanical Engineering

Mar 2018

- Extra-curricular: Formula SAE Drivetrain Team Lead

## SKILLS & TOOLS

**Data Analytics, Engineering & Science:** Python (NumPy, Matplotlib, Pandas, Sklearn, Tensorflow, Langchain), SQL, MatLab.

**Business Intelligence:** Spotfire, Celonis, Disco (Process Mining).

**Cloud Services:** Google Cloud (Firebase), Qdrant (VectorDB), Azure Databricks