

Juhyeok (Jay) Sin

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PROFESSIONAL EXPERIENCE

Cuberg (Acquired by Northvolt)

San Leandro, CA

Data Scientist

Sep 2021 – Present

- Implemented advanced statistical models, including linear regression, the Gaussian distribution, and the Empirical Cumulative Density Function (ECDF) for accurately forecasting battery cycling channel availability.
- Developed a data science system utilizing Statistical Process Control (SPC) rules to detect and classify the process deviations and instantly alert stakeholders. Implemented in a human-in-the-loop architecture, enabling continuous improvement of detection and classification accuracy, while empowering engineers to draw causal conclusions from the data.
- Designed and implemented a data collection with ETL and analytical dashboard to analyze and infer the frequency of part replacement in a manufacturing machine, reducing part replacement frequency by 5-10 times and significantly improving machine up-time, enhancing overall operational efficiency and productivity.
- Perform a t-test to determine whether there is a mean shift in the manufacturing process after a part change.
- Support the manufacturing team by organizing data marts and creating dashboards in Looker, such as first pass yield and failure Pareto chart, to track key performance indicators (KPIs).

Apple Inc.

Cupertino, CA

Data Analyst

Mar 2020 – Aug 2021

- Wrote a Python script with REST API to scrap image, video data, and corresponding metadata and delivered a few thousands of fully QA'd images and videos weekly.
- Created a visually informative dashboards, enabling quantification of the amount of image and video data across different categories in Tableau Desktop and Tableau Server.
- Managed image and video data QA processes by coordinating with Data Science, Data Annotation, Data Collection teams.

Ethereum Foundation

San José, CA

Blockchain Researcher

Jan 2019 – Dec 2019

- Wrote manuscripts for two journal publications on the New Consensus Protocol (Beacon and Shard Chain)
- Analyzed and interpreted data to probabilistically prove the Liveness of the new protocol.
- Improved the data scalability and availability of the Shard Chain by establishing a game-theoretic model.

SKILLS

Data Analysis: Python (Pandas, Numpy, Plotly, Scipy, Scikit-Learn, Stats, Tensorflow), SQL (PostgreSQL, MySQL), Statistical Process Control, ANOVA, Machine Learning

Dashboard/BI Tools: Looker, LookML, Streamlit, Grafana, Tableau

Data Model/Pipeline: Python (Prefect and Pydantic), ETL, PySpark

Developer Tools: Conda, Docker, Git, Unix

Documentation: Atlassian (Jira and Confluence), Lucid Chart, MS Office, G-suite, LaTeX, TikZ

EDUCATION

San José State University

San José, CA

B.S. in Applied Mathematics, Minor in Computer Science, *Cum Laude*

Dec 2019

Relevant coursework: Applied Statistics and Probability, Combinatorics, Data Structures and Algorithms, Differential Equations and Dynamical Systems, Graph Theory, Mathematical Modeling, Numerical Analysis and Scientific Computing, Object-Oriented Design, Probability Theory, Stochastic Process

Awards: Beverly Mecklenburg Scholarship Award (2018), Academic Dean's List (2018)