Garlen Chan

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Work Experience

Process Engineer - Intel Corporation *October 2023 - Present*

- Developed and optimized SQL queries for large-scale manufacturing datasets, enabling real-time insights and improving decision-making
- Utilized a combination of Python, SQL, and PowerBI to automate and centralize tool data visualizations, promoting data-driven decisions and saving 23 engineering and manager hours/week
- Leveraged Python to produce apps and automate data analysis for metrics from product runs at various toolsets, resulting in 10 engineering hours/week in savings
- Developed notifications system to alert engineers and production managers of events in factory
- Optimized and trained clustering models for applications in predictive process control charts in chip manufacturing

Research and Teaching Assistant - UC Davis Food Processing Research Lab *June 2022 - June 2023*

- Developed data-driven lab experiments for Chemical Engineering Food Processing course
- Applied statistical and rheological analysis techniques to demonstrate food systems concepts to students
- Authored technical procedures and engineering memos for laboratory experiments

Projects

Bond-Debond Tool Data Analyzer *November 2024*

- Applied knowledge of Python libraries (Tkinter, Pandas, NumPy, Matplotlib) to develop single point-of-use Windows app for tool data analysis automation in user-friendly GUI
- Stripped rec files to csv and analyzed for statistical process data alongside graphing capability
- Resulted in ~5 hours of engineering time savings per week

Toolset PowerBI Data Dashboard *September 2024*

- Collaborated with cross-functional engineering teams to extract, transform, and load (ETL) data into PowerBI dashboards, proliferating data centralization
- Utilized daily by engineering teams to check tool status, promoting ad hoc data analysis for toolset during shift passdown
- Resulted in engineering time savings of ~23 hours per week

Scratch-RNN *Dec 2024*

- Designed and implemented a custom Recurrent Neural Network (RNN) from scratch using NumPy and Pandas, avoiding deep learning frameworks like TensorFlow or PyTorch
- Developed and optimized backpropagation through time (BPTT) and gradient descent techniques to train the model efficiently, demonstrating >99% model accuracy with historical weather modeling

Skills

Programming: Python (Pandas, Numpy, Tkinter), SQL (SQLite, Microsoft SQL Server, IBM DB2, Oracle)
Data Visualization: Power BI, JMP, Matplotlib, Tableau
Other Tools: ReactJS, Node.js, Clustering, Predictive Modeling, RNN

Education

University of California, Davis: Chemical Engineering, B.S. *September 2019- June 2023*