Carson Sprock, Data and Quantitative Specialist

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Summary

With six years of experience, including three on petroleum trading desks, I have a broad background spanning statistical modeling, ad-hoc analysis, visualization, tool development, automation, backend engineering, model deployment and project management, with applications in commodities trading and ground freight.

- **Technology**: Bloomberg, Python, Excel, Dash, R, Docker, AWS, SQL
- **Modeling**: time series, econometrics, machine learning, linear programming, S/D balances

Relevant Experience

Data Scientist, Front Office — Geneva, Switzerland
Koch Supply & Trading, SARL — *Nov 2023 - Feb 2025*

- Worked on a derivatives trading desk specializing in crude oil and refined products.
- Built a global petroleum supply and demand balance model and provided forecasts and market updates.
- Modeled Commodity Index Fund flows using CFTC data.
- Conducted ad-hoc oil market research and analysis.
- Developed dashboards for traders in Plotly.

Data Scientist, Front Office — Houston, TX
Koch Supply & Trading — *Feb 2022 - Nov 2023*

- Worked for the physical crude trading desk serving dual roles as individual contributor and project manager.
- Coordinated data acquisition and analytic tool development for front office with IT.
- Led the development of systematic trading algorithms and tools written in Python.
- Became an expert in CFTC Commitment of Traders data, conducted statistical analysis and built a reporting application in Dash with a Redis, AWS S3 and Lambda backend.
- Developed an end-to-end crude oil blending application in AWS and Plotly/Dash.
- Reformulated a complex legacy petroleum blending model, resulting in significant gains in speed, solution stability and accuracy.
- Created a linear programming model of supply/demand matching and user-interface in Dash deployed to AWS with a Lambda and S3 backend.
- Forecasted pipeline flows and refinery utilization rates using R.
- Created internal training materials for Docker and deployment templates for Dockerized AWS applications in Lambda and ECS.

Data Scientist — Houston, TX
Sysco — *Sept 2020 - Nov 2020*

- Conducted analysis using Python and SQL before I unfortunately had to take medical leave.

Data Scientist — Minneapolis, MN
C.H. Robinson — *Sept 2018 - Sept 2020*

- Served as an individual contributor on the contractual pricing and supply chain visibility teams for the largest North American ground freight broker.
- Maintained and improved long-term price forecasting system spanning five repositories in R and Python deployed as Dockerized microservices on Linux servers.
- Applied changepoint detection and causal impact analysis to identify prices surges during beginning of COVID and mitigate their impact on price forecasts.
- Formulated contract pricing optimization framework in Python for combining cost and volume forecasts and bid-win models.
- Contributed to the development of an explanatory model for freight shipment delays. Results featured in main customer-facing platform.
- Developed a repeatable model deployment pattern using Docker, Flask, Kafka and Airflow.
- Mined GPS data to identify the locations of truck stops, travel times and driver behavior using custom clustering algorithm.
- Created a custom deep learning architecture for training categorical embeddings in Keras and Pytorch.

- Wrote internal training materials for Apache Kafka with Python; developed internal packages and APIs; conducted ad-hoc analysis in Jupyter notebooks and R; worked with Hive and Postgres databases.

Data Engineer Intern — Minneapolis, MN
phData, Inc — *June 2018 - August 2018*

- Built a streaming "internet-of-things" data pipeline to capture flow telemetry from beer kegs with an integrated recommender system connected to Slack (similar to MS Teams).
- Programmed a microcontroller and mini-computer to process data using Python.

Data Analyst (Contract) — San Jose, CA
First Community Housing — *March 2018 - July 2018*

- Analyzed crime data using Python to determine if new management policy lowered crime rates around an affordable housing complex.

Education

San Jose State University — 2017
M.S. Mathematics

- 2016 Recipient of SJSU Macklenberg Scholarship Award for Academic Excellence

Stanford University — 2016
Summer Session

- Coursework in machine learing

University of California Santa Cruz — 2013
B.A. Economics and Mathematics

- 2011 Center for Entrepreneurship Business Plan Competition Finalist