

Ashley Taken

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Professional Summary

Machine Learning Engineer and Data Scientist with an M.S. in Analytics from Georgia Tech and 6+ years of experience building production ML systems, time-series models, LLM/RAG workflows, and full stack engineering applications. Strong Python, PyTorch, SQL, Docker, and FastAPI background with experience deploying ML services and applying deep learning, XGBoost, and transformers to engineering problems.

Experience

Data Scientist | Occidental Petroleum (OXY)

Remote | May 2024 – Present

- Deployed production 2D CNN inference services in Dockerized Python containers in Azure to replace legacy rule-based logic and improve real time well status prediction accuracy from 77% to 98%.
- Built and deployed full stack production engineering applications using Python, Flask, Dash, SQL, Docker, and Azure DevOps enabling direct writeback to AVEVA PI Asset Framework for improved reservoir pressure tracking and well engineering decisions.
- Architected and managed a 22 agent enterprise RAG ecosystem with live-synced SharePoint and network drive knowledge bases using hybrid retrieval and multi knowledge base search with tailored system prompts.
- Designed 2D CNN classification workflows using feature engineering, sliding windows, focal loss, class weighting, confidence threshold logic, and data drift checks to improve reliability for an underrepresented transition state.
- Created and maintained 25+ production manage-by-exception workflows across Seeq Data Labs (Python), Power Automate, Azure, and AVEVA PI to deliver proactive monitoring and maintenance for offshore operations.

Founder/Machine Learning Engineer | Taken Group LLC

Remote | Jan 2024 – Present

- Developed a full stack ML research and trading simulation platform using FastAPI, SvelteKit, MariaDB, Redis, Docker, and Python, supporting real-time data ingestion, experiment management, model inference, evaluation workflows, and paper trading simulation.
- Designed a reproducible experimentation and statistical analysis framework for high frequency time series data, incorporating configurable parameter studies, statistical diagnostics, sensitivity analysis, leakage aware validation, and out-of-sample evaluation to support rigorous model and methodology selection.
- Architected a multi-agent AI research and codebase-analysis platform using FastAPI, Docker, Open WebUI, ChromaDB, hybrid retrieval, cross-encoder reranking, MCP tools, and evaluation metrics including Recall@K, MRR, groundedness, and LLM-as-judge scoring.
- Built a modular caching and experiment persistence architecture across Python backend services and an interactive SvelteKit frontend to enable reproducible studies, comparison of experimental runs, and efficient reuse of computationally expensive intermediate datasets and analyses.
- Built ML forecasting pipelines using feature engineering, rolling backtests, XGBoost/Transformer/DLinear benchmarks, cost decomposition, and model diagnostics to validate predictive performance for live deployment.

Senior Process Engineer | Freepoint Eco Systems

Houston, TX | Jan 2024 – May 2024

- Led data flow process for greenfield pyrolysis unit from field equipment to DCS, Historian, and end-user software such as Power BI, Seeq, and Excel.
- Facilitated key teamwork and extensive planning workshops between DCS and Historian vendors and Freepoint stakeholders developing a reliable unit startup plan that saved weeks in unplanned downtime.

Implementation Engineer (Forward Deployed Engineer) | Imubit

Houston, TX | Sep 2022 – Jan 2024

- Designed and deployed five closed-loop reinforcement learning models from POC to production by collaborating with global data science and MLOps teams to deliver \$2M+ in customer value.
- Led customer-facing, model deployment workflows by translating operational constraints into model tuning requirements, validation criteria, and production rollout plans.

- Analyzed industrial time-series data using OSI PI, Seeq, Python, and SQL; tuned model performance using SHAP analysis, hyperparameter optimization, and YAML-based deployment configs.
- Built customer-facing dashboards and model insight tools using Grafana and AWS S3-backed data pipelines to improve model transparency, adoption, and operational trust.

Chevron Phillips Chemical

Baytown, TX | June 2020 – Sep 2022

Advanced Process Controls Engineer – Real-Time Optimization | June 2022 - Sep 2022

- Automated real time furnace monitoring with Python by generating custom status signals and operator alerts to improve response time.
- Improved unit profits by as much as \$300/hr on daily basis by creating a pricing model using sim model outputs.

Operations Engineer – Olefins | June 2021 – June 2022

- Modernized plant data analysis using Python regression models for distillation tower quality control and production optimization.
- Played a critical role in a 52-day turnaround: conducted tower inspections, led 20+ PSSRs, and delivered post-turnaround optimization plans.

Process Engineer – Polyethylene | June 2020 – June 2021

- Built real time and forecasted emissions dashboards using Python and Power BI to help prevent EPA compliance violations across three plants.
- Identified \$350K/year in N₂ savings by analyzing a closed-loop regeneration system using condition-based data slicing.

Education

M.S. in Analytics (OMSA - Computational Track) — Georgia Institute of Technology | Dec 2025

Bachelor of Science in Chemical Engineering — University of Houston | May 2020

Bachelor of Science in Biology with Minor in Psychology — Texas A&M University | May 2014

Publications

SPE-226758-MS, *Automated Well Status Identification in US Offshore Operations Using Machine Learning*, Co-Author, SPE Offshore Europe 2025.

- Contribution: Developed and contributed an XGBoost and 2D CNN model providing superior accuracy by utilizing additional indicators through feature engineering. This enhanced the accuracy of the Productivity Index for each well – the main metric used for major well projects and production decisions.

Technical Skills

- **Programming:** Python, SQL, Pandas, NumPy, Scikit-learn, PyTorch, FastAPI, SvelteKit
- **ML/Deep Learning:** XGBoost, CNNs, Transformers, LSTMs, anomaly detection, time-series, SHAP, Optuna
- **ML Engineering:** feature engineering, model eval, batch/real-time inference, ablation studies
- **LLM/RAG:** Open WebUI, ChromaDB, hybrid retrieval, BM25, cross-encoder reranking, MCP
- **Platforms/MLOps:** Azure, AWS, Docker, Redis, MariaDB, Grafana, Seeq, AVEVA PI

Leadership & Involvement

- Oxy Production Engineering Community of Practice | *Content Steward* | Aug 2025 - Present
- CPChem PRIDE | Co-Founder & Outreach Coordinator | Jan 2021 – Jul 2022
- CPChem Recruiting Team | College Recruiter | Aug 2021 – Aug 2022