Joseph Laurent Krueger

Machine Learning Engineer

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EDUCATION

University of Washington (Seattle campus) December 2024
B.S. Computer Science, Minor in Business GPA: 3.70/4.0
President and Co-founder of Clearvote, Algorithmic Trading Club, Salsa Club, UW Farm

EXPERIENCE

Clean Power Research, Software Engineering Intern June 2024 — October 2024 | Bellevue, WA
- Designed and implemented a scalable, fault-tolerant, **.NET** app that inserts charts into PDFs via dependency injected data
- Extended existing orchestration infrastructure with **AWS Lambda** to connect with a containerized **Node.JS** app
- Designed new charts generated for on-demand reports in under 5 seconds used by HVAC contractors across the country
- Wrote technical documentation and automated tests for debugging and monitoring to a production-ready coding standard

Clearvote, Co-founder August 2023 — Present | Seattle, WA
- Founded a student-run non-profit developing a cross-functional, open-source **Next.js** application deployed through AWS
- Deployed a throttled, high availability **RESTful API** supporting over **over 3000 users** during a critical usage period
- Engineered an NLP pipeline using **GPT-4** to analyze political statements, extracting policy positions and generating quantitative metrics across five dimensions with 100% automation
- Designed a geospatial data system for candidate metrics, statement analysis, and district boundaries in **DynamoDB** for localized election information across the state of Washington

MCG Health, Software Engineering Intern June 2023 — September 2023 | Seattle, WA
- Worked on the CareWebQI Team to overhaul an In-patient diagnostic and perscritption tool used by **2,800 hospitals**
- Migrated from a deprecated version of **Angular** to work with a **.NET Core** backend
- Created a CI/CD pipeline in **Azure** for automated testing and deployment
- Added auto-completion and code lookup support for **70,000 medical care guideline codes**
- Applied agile project management principles in cross-team sprint planning sessions with **Confluence** and **JIRA**

PROJECTS

ProtoQA Submission, NLP class research project under Prof. Yejin Choi January 2023 — March 2023
- Developed a multi-model pipeline using Zephyr-7b-beta that outperformed GPT-2 baselines on ProtoQA's commonsense reasoning benchmark through prompt engineering
- Optimized model performance with WordNet similarity matching and 30-token generation, without the need for fine-tuning

Financial Portfolio Rebalancer, Full Stack Application April 2024 — Present
- *Auto Trader*: Developed a **C++** Technical Analysis app optimized for market-wide dividends. Backtests on historical market data for **sub-5-second stock speculations** and an EMA algorithm to compare against time series prediction models
- *Time Series Forecast*: Designing a **Kubernetes** cluster integrated with **Prometheus** and **Grafana** to ingest preprocessed stock data and train regression models (with **PyTorch**) for stock price time series forecasting

SKILLS

Model Development:	PyTorch, TensorFlow, Supervised Machine Learning, Hyperparameter optimization
Data Science:	Web Scraping (Puppeteer, Selenium), NumPy, Pandas, Matplotlib, Desmos
DevOps:	Kubernetes, Docker, CI/CD (Azure), Shell scripting (PowerShell, Bash), IaC (CloudFormation)
NLP:	Auto-regressive and Sequence-to-sequence transformers, Large Language Models (LLMs)
Languages:	Java, C++, C#, TypeScript, Python, Dart, C, R
Cloud Infrastructure:	AWS (CDK, Lambda, DynamoDB, EC2, S3, RDB, Amplify), Google Cloud Platform, Azure
Database Systems:	ER Modeling, Relational Databases (SQLite, MySQL), NoSQL (DynamoDB)