Elliot Eckholm

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Lead ML Engineer with 10+ years of programming experience, first ML hire at two startups, leading production ML projects and driving innovation across diverse domains.

EXPERIENCE

Mix *(Startup - Privately Funded)* — **Lead ML Engineer**
July 2020 - PRESENT

- As **the first ML hire on the team** I have spearheaded and lead projects throughout Mix's entire stack
- **Pioneered and deployed Mix's primary ML models** that serve personalized recommendations to thousands of users daily
- **Leading the development of an LLM-based sentiment analysis** pipeline to extract insights from user comments and reactions
- **Built Mix's Vector Embedding pipeline to retrieve relevant items** based on User Embeddings, increasing overall user experience and dramatically decreased request time
- Designed and developed Mix's Preprocessing Pipeline for realtime ML Feature Engineering that **enabled realtime model fine-tuning** to adjust model predictions based on RLHF
- **Deployed the Model Evaluation Pipeline for both offline and online Evaluation Metrics** along with a custom Hyper-parameter Grid Search System to find the best combination of Model Parameters with offline metrics
- **Lead a team of three in data engineering and analysis,** transforming ETL pipelines from unreliable 24-hour lagged batches to real-time scalable data processing
- **Created a Real-time A/B testing pipeline to evaluate models** using online metrics**,** that have led to increased user retention and improved model performance
- **Built Key Metric dashboards** using SQL to track live user engagement and retention, as well as monitor ML model health and performance

Sellhound *(Startup - Seed Funded)* — **Lead Software Engineer**
June 2019 - June 2020

- **Hired and lead a five person team**, managing both the ML and backend tech stack
- **Leveraged RAG pipelines and RLHF to automate internal operations** that reduced manual overhead and increased accuracy of Sellhound's pricing estimations
- Built automated content moderation using ML image classification and a real-time Mechanical Turk pipeline

Personal Projects

www.ellioteckholm.com

SKILLS

Machine Learning, Data Engineering, LLM fine-tuning, Prompt Engineering, RAG Pipelines, Vector Embedding, RLHF, Model Deployment, Model Evaluation, Data Science, Preprocessing Pipelines, ETL Pipelines, Data Modeling, Batch/Realtime Workflows, CI/CD, Realtime Dashboards

Languages

Python, Scala, Java, SQL, TypeScript, Javascript

Frameworks & Infrastructure

Pytorch, Numpy, Scikit, FastAPI, FAISS, AWS, Docker, Kafka, Flink, Redshift, Postgres, Redis, Spark, Github Actions, CircleCI, Metabase

EDUCATION

Applied Physics: Computational Astrophysics —*Bachelor's of science*
2015 - 2019
University of California Santa Cruz

Applied Physics with emphasis on Data Science, Data Modeling and Optimization Algorithms for Astrophysics Research Projects

AWARDS

- Co-Authored Three Published Papers
- Koret Research Scholar
- Digital Research Fellowship
- Undergraduate Research Award
- Recipient of REU at UTRGV
- Recipient of REU at UCSC
- Awarded Honors for Senior Thesis

EXPERIENCE (Continued)

Sellhound *(Startup - Seed Funded)* — **Software Engineer**
Jan 2018 - June 2019

- **As the first in-house Software Engineer,** I spearheaded and lead the development of both the frontend applications and the backend apis
- Managed and advised Software Engineer Contractors

Cryptanna *(Startup - Seed Funded)* — **Co-Founder**
Jan 2017 - June 2019

- **Co-Founded and lead development** of a Cryptocurrency Sandbox Trading Platform that was published on the Apple App Store
- Successfully pitched Cryptanna to investors
- Hired and lead a team of five to build the frontend React Native app as well as the backend server
- Designed and tested autonomous trading bots to minimize losses

UC Santa Cruz — **Astrophysics Researcher**
Sept 2018 - June 2019

- Created data visualization tools for fellow astrophysics researchers to verify cosmological findings and explore simulations, **resulting in two published scientific papers:**
  - Dark matter halo properties versus local density and cosmic web location
  - Can intrinsic alignments of elongated low-mass galaxies be used to map the cosmic web at high redshift?

UT Rio Grande Valley — **Reinforcement Learning Researcher**
April 2017 - Sept 2017

- Built and compared Reinforcement Learning algorithms that increased the accuracy of Gravitational Wave Detections for the LIGO Lab Observatory, **resulting in one article:**
  - Comparison and Implementation of PSO Algorithm Variants to Localize Gravitational Wave Source Signals