Elliot Pourmand

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Work Experience

Zendesk Inc. San Francisco, CA

Senior Software Engineer - Platform Abuse Team March 2021 – Present

Software Engineer - Platform Abuse Team August 2019 – March 2021

Senior engineer on the team who has delivered multiple abuse detection systems leveraging deep learning, low latency actor system API servers, and high throughput near real-time streaming solutions.

Fraud Detection with Apache Flink

- Developed and maintained a distributed near real time streaming **Scala** application for detecting fraudulent behavior found in database transaction events published to **Kafka**. ~40,000 events / second.
- Led top down reliability initiative for the project, evaluating and improving SLO/SLIs, increasing observability and developing empirical load testing to measure and test stability at scale and evaluate concurrency decisions.
- Led major version upgrade from Flink 1.9.3 to Flink 1.13.2.
- Leveraged Flink for rich aggregations on database transactional events to generate near real time signals for alerting our abuse analyst team.
- Discovered bug (FLINK-14380) in Flink 1.8.2/1.9.0 causing failed type extraction for Scala case classes.
- Worked on development of locality sensitive hashing algorithm (Nilsimsa) for spam detection.
- Languages and Frameworks used: Scala, Apache Flink, Kafka, Hadoop.

Content Detection For Zendesk Guide

- Led the development of an end to end machine learning pipeline for classification of content on Zendesk Guide and Gather communities.
- Replaced our existing vendor saving the company **$250k per year** in vendor costs while delivering better performance (precision/recall) and reducing total turnaround time for model refitment.
- Utilized **Tensorflow** Universal Multilingual Embeddings to create a language agnostic multi-class classifier.
- Architected and led deployment of models on **AWS SageMaker** for model serving.
- Integrated **Akka-Http** API server with serving platform.
- Developed a data labelling tool used actively by 15+ team members for data labelling.
- Designed and developed a **GDPR compliant** data pipeline for storing labelled data.
- Integrated dashboards, monitors, and APM tracing via **DataDog** for tracking production performance.
- Set up regression testing via **Jenkins** to continually monitor endpoint health.
- Languages and Frameworks used: Scala, Python, Tensorflow, Akka-Http, AWS SageMaker.

UCSD CSE Department San Diego, CA

Lear Tutor and Grader Winter 2017

- Lead Tutor for Unix Lab. Created projects and write ups used in CSE15L Unix Labs by 600+ students a quarter.
- Tutor for Advanced Data structures CSE 100.

Education

University of California, San Diego San Diego, CA

B.S. Computer Engineering, 3.82 Sept 2017 – June 2019

Personal Projects

IZII (Python Chess Engine)

- MinMax search algorithm with Alpha-Beta pruning for search tree optimization.
- Xboard/Winboard compatibility makes it compatible with the majority of open source GUIs.
- https://github.com/ElliotVilhelm/IZII

Python Domain Validation

- WHOIS domain registry client focused on security and latency
- Engine does not rely on WHOIS.iana.org server redirect, rather it maintains mapping of domain extensions to servers reducing latency.
- https://github.com/ElliotVilhelm/python-domain-validation

Skills/ Misc. :

Languages: Scala, Python, Ruby, Java, C, C++, JavaScript, Haskell, Shell Script, ARM Assembly

Frameworks+: Apache Flink, Akka-Http, Tensorflow, Flask, Rails, Spark, Kafka, Docker, Kubernetes, Spinnaker, Git, SQL, Redis, AWS Practitioner, Measurable Reliability (SLI/O), Datadog, Rollbar, Cloudflare, Jenkins, NodeJS, MySQL