Pooria Poorsarvi Tehrani

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Experience

Geotab

Technical lead, Generative AI, Ace June 2020– August 2024

- Designed the **architecture for LLM-based** application that enabled users to **query big data from multiple sources through prompts**. Used **hexagonal architecture** and **ports and adaptors** design pattern to test different **agent-based (such as LangChain)** approaches and components. The design **accelerated the product development cycle**, enabling the project to go **from zero to beta testing within five months**.
- **Reduced GCP Bigquery cost** by **66%** by making a management system to scale up and down bigquery slots (computation units) for **airflow ETLs and SQL queries** using python.
- **Reduced operational costs** for clustering application, **reducing the memory footprint by more than 80%** and **Productionized ML models** by analyzing the bottlenecks of the model running on the machine.
- **Ensured uninterrupted data processing and operational cost savings** by **designing fail-safe systems** for bigquery slot capabilities by completely removing instances of leaked slots in case of airflow failure or GCP Api failure by designing an **event-driven system using cloud pubsub** to check for the health of all slots.
- **Customized open source tool, Dekart for departmental use** (a **kepler.gl** tool integrated with **BigQuery, AWS atlas, SnowFlake**) , customized golang server for authentication and **added authorization system** and updated the react frontend to add **support to load in large data** (more than 512MB).

PARSA LAB - EPFL

Doctoral student Sep 2024– Present

- Worked on a **multinode simulator** to simulate a **disaggregated rack**. Using **QEMU**, **Gem5**, **SimBricks**. Adding far-memory emulation to **QEMU nodes**.

LingDisco

CTO, Co-Founder Jan 2023– Feb 2024

- **Third place at new venture challenge at the University of Colorado Boulder** and used by its student.
- **Used GPT-4 to** create **custom dynamic tests** for songs and summaries for songs used in classrooms at the University of Colorado Boulder to help with student retention.

Publications

Geotab Patents: Multiple patents analyzing vehicle journeys using big-data including one on the aforementioned **agentic system**.

SLDeep: Statement-level software defect prediction using Deep Learning model on static code features: Expert Systems with Applications. A paper about **predicting problems of a code** using different machine learning methods such as **convolutional neural networks and recurrent neural networks** and based on the **lexical scanner and abstract syntax tree** data.

Education

University of Toronto, ST George **Toronto, Ontario**

Computer Science Specialist B.Sc. (Hons) **3.92** GPA 2019–2023

Skills

Expert: Python, Pytorch, Langchain, GCP cloud run, Airflow, Golang, Angular Ionic, SQL, Machine Learning, Google cloud

Proficient: C++, Java, Azure, AWS