Ted Zhang

Cell Phone: (647) 643-3466   E-mail: th3zhang@uwaterloo.ca   LinkedIn: https://www.linkedin.com/in/ted-h-zhang/

Work Experience

Software Engineering Intern, *Kinaxis Inc.*   May 2024 – Aug 2024

Toronto, Ontario

- Engineered a **REST API** using **Express.js** that embeds data using **OpenAI** embeddings, interacting with a **PostgreSQL** vector database hosted on **Azure**. Also crafted a **REST API** that performs prompted log analysis using **Express.js** and **OpenAI GPT-4**.
- Developed a chatbot frontend using **React.js** and **CSS,** and an **ETL** pipeline for logs using **Apache Airflow** and **Datadog API**.

Machine Learning Developer Intern, *Kinaxis Inc.*   May 2023 – Aug 2023

Toronto, Ontario

- Researched and implemented various **change point detection** techniques and **unit root** tests to identify anomalies within supply chain **time series** data using **Ruptures, Kalman Filters**, and an **Augmented Dickey-Fuller** test.
- Analyzed and aggregated data from a large-scale **Apache Hive** data warehouse using **PySpark**, **HQL**, and **Azure Databricks**, decreasing processing time by **53%** compared to previous systems.
- Refactored data utilities using **PySpark**, improving readability, reducing lines by **40%,** and decreasing runtime by **45%**.

Software Engineering Intern – Machine Learning, *BlackBerry Limited*   Sept 2022 – Dec 2022

Waterloo, Ontario

- Developed an unsupervised **NLP** model with an **87 f1-score** and **92% validation accuracy** for log anomaly detection using **hashing vectorizers**, **scalers**, **LSTM** autoencoders, Google's **BERT** transformer, and **isolation forest**.
- Tested, productionized, and integrated the new model into the existing codebase and pushed **2000+ lines** into **production**.
- Improved the machine learning data pipeline by reducing redundant **API** calls by **55%** and optimizing low-level memory usage by **52%** using **multiprocessing**, **memory tracing**, and **memory profiling**.
- Implemented a **CI/CD** pipeline using **Git**, **GitLab CI/CD**, **GitLab Runner**, **Docker**, and **bash scripts**.

Machine Learning Developer Intern, *Advanced Micro Devices Inc. (AMD)*   Jan 2022 – Apr 2022

Markham, Ontario

- Spearheaded development and training of a **computer vision** model trained on **700,000 images** with **94% validation accuracy** using **TensorFlow** and **Keras**, transfer learning using **InceptionV3**, and image preprocessing using **OpenCV.**
- Containerized an inference optimization library along with various other pretrained models using **Docker** and **bash scripts**.

Relevant Projects

ML^2: Machine Learning Money Lines - ml-squared.ca/

- Aggregated over **500000** lines of NBA player data using **pandas** and developed a tree-based **regression** model using **XGBoost**, boasting a mean absolute error of **4.07** and with **58%** of predictions within 3 points of actual performance.
- Developed a front end using **React.js** and **CSS** alongside a **REST API** that uses **Django**, hosted on an **AWS EC2** instance using **NGINX** and **Gunicorn**.

Education

BCS, Computer Science, *University of Waterloo*   Apr 2026

Cumulative GPA: 93.5/100

Waterloo, Ontario

- Spring 2022 **First in Class Engineering Scholarship**, Fall 2021, Spring 2022, Winter 2023 **Dean's Honours List**
- Relevant Courses: Algorithms, Data Structures, OOP, Compilers, Linear Algebra, Probability, Statistics, Combinatorics

Skills

- Languages: Python, C++, JavaScript, HTML, CSS, SCSS, bash, Java, SQL, HQL
- Frameworks: Express.js, TensorFlow, PySpark, Scikit-learn, Django, Docker, Kubernetes, XGBoost, React.js, Airflow
- Cloud & Other: AWS EC2, Datadog API, Gitlab CI/CD, Git, Azure, PostgreSQL, NGINX, Gunicorn, OpenAI API, Kubernetes