STERIC TSUI

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Education

University of Toronto	**Expected: May 2027**
Bachelor of Science in Computer Science and Statistics	*Toronto, ON*

Summary

Results-driven ML Developer passionate about building & optimizing AI/ML solutions that deliver tangible impact. Proven experience in AI/ML workflows and the development of cutting-edge models. Proficient in PyTorch, Scikit-learn, and MLOps (MLflow) across GCP, Azure, and AWS. Driven to create scalable, impactful real-world AI/ML solutions.

Experience

Squirl ASL	**Toronto, ON**
ML Engineer	*Sep 2024 – April 2025*

- Fine-tuned a Temporal Convolutional Network (TCN) by performing a grid search over key hyperparameters and implementing a Cosine Annealing scheduler, **contributing to an award-winning prototype.**
- **Reduced inference computation by 33%** using a post-training dynamic frame sampling technique in Azure ML, **prioritizing real-time smooth user experience** without compromising model accuracy.
- Improved dataset quality by filtering low-confidence labels in Pandas/NumPy to identify mislabeled data, followed by semi-automated relabelling via makesense.ai, **boosting F1 score by 22%.**

TadRamk	**Hong Kong**
Research Associate	*May 2024 – Aug 2024*

- Built scalable, reproducible data-ingestion & pre-prepossessing using OpenCV & NumPy for 100k+ trademarks, **cutting prep-time by 70% and enabling faster experimentation with internal trademark datasets.**
- Contributed to a ResNet-50 based classifier on 20,000+ trademarks to assess borderline infringement risk, optimized decision threshold to **reduce false positives by 25% while maintaining an 82% F1-score.**
- Architected an end-to-end MLOps workflow using MLflow, establishing best practices for **experiment tracking, model versioning, and deployment workflows** to **increased research throughput by 30%.**

Projects

TinyProof, GDSC Research	*Pytorch, Google Cloud Platform, Leandojo, Lean4, GCP, Jira, Docker*	**January 2021**

- Conducted original research under Dr. Mohammad to build an RL-based theorem prover extending AlphaProof using **R'max Tree Search**, **achieving 87% on college-level proofs surpassing expected baselines**.
- Engineered an **ETL** pipeline leveraging LeanDojo to extract & transform supervision pairs from theorem traced data, enabling **scalable data handling** with **exception management** for error handling.

Autonomous Agent for Browser-Based Tasking	*Python, Browserless, DOM Manipulation, Docker*	**June 2025**

- Developed an AI agent to orchestrate complex, end-to-end browser-based tasks, breaking them into milestones and utilizing **a state-tracking module** enhanced with **prompt engineering**.

NCAA Bracketology ML Model	*Google Cloud Platform, BigQuery, SQL, Scikit-learn*	**May 2025**

- Developed and deployed a **logistic regression classification** model using BigQuery ML to predict NCAA March Madness outcomes on **over 4M+ row** dataset, demonstrating proficiency in cloud-based ML lifecycle.
- Conducted comparative analysis and experimentation across **various ML algorithms** (XGBoost, DTs) to optimize predictive accuracy and obtain the best model fit, leading to the selection of logistic regression.

Technical Skills

Languages: Python, C++, Java, , HTML/CSS, JavaScript, SQL, PostgreSQL
Frameworks: Tensorflow, Pandas, Numpy, Scikit-learn, LlamaIndex, LangChain, FastAPI, streamlit
ML: Linear & Logistic Regression, SVM, KNN, Decision Trees, Random Forests, GLM, GAM, SHAP, LIME
Deep Learning: MLP, CNNs, LSTM, TCNs, Attention Mechanisms, Backpropagation, (ReLU, Sigmoid, Tanh)
RL: Monte Carlo, SARSA, Q-Learning, DQN, PPO, SAC, Dreamer, RMax, GRPO, PGO
Cloud: GCP (GCS, Cloud Scheduler Functions, BigQuery), Azure (ML, Blob Storage), AWS (S3, Sagemaker), Jupyter
Certification: AWS Machine Learning Engineer-Associate, Oracle Cloud Foundations Associate, Google Cloud Essentials