Ryan Quan

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I am a Canadian Citizen and am eligible for a TN visa

EDUCATION

University of Waterloo — Waterloo, ON
Bachelor of Applied Science, Honours Mechatronics Engineering (GPA: 3.4/4.0) — *Sep. 2019 – Apr 2024*

TECHNICAL SKILLS

Languages: Python, SQL (PostgreSQL), R, C/C++
Technologies: TensorFlow, NumPy, Matplotlib, scikit-learn, LLMs, Neural Networks, Computer Vision
Developer Tools: Git, Docker, Amazon Web Services, Google Cloud Platform, VS Code

EXPERIENCE

Machine Learning Engineer Internship — May 2023 – August 2023
Butter Data — *New York, NY*
- Developed an LLM-powered app using Python and PostgreSQL focused on investor analysis, allowing summarization of entire investor portfolios within 1 minute as well as retrieval of summaries of individual portfolios
- Trained a CNN for object detection using TensorFlow for supervised learning, resulting in an IoU of 0.91 identifying webpage design components
- Designed a Python-based desktop application to allow for real-time file management of JSONs, reducing development time by 85%
- Explored deployment methods of hostable apps via AWS and/or GCP pipelines, deploying various webapps for organizational use

Junior Backend Software Engineer Internship — Sep. 2022 – Dec 2022
Pronti AI — *Kitchener, ON*
- Created an OAuth2 compliant export app in Python, fetching and displaying data from Mixpanel and Quickbooks API endpoints, reducing administrative workload by 80%
- Implemented a content filter in Python within the main pipeline to ensure terms of service compliance of over 500,000 users
- Deployed an open-source localization platform using Docker and GCP to aid in internationalization of apps
- Developed a colour mapper in Python based on kNN, reducing system resources dedicated to colours by 72%
- Added a feedback system in JavaScript to read and parse relevant emails, allowing for quicker identification of user-reported bugs

Data Analyst Assistant Internship — Jan 2022 – Apr 2022
Shenzhen Lansi Institute of AI in Medicine — *Shenzhen, China*
- Trained a risk model to predict a gene signature for liver cancer with LASSO regression using R
- Analyzed the data using univariate and multivariate COX regression analyses with R's bioinformatics libraries
- Developed a k-nearest neighbours algorithm in R to clean 24,000 data entries from the International Cancer Genome Consortium for analysis
- Published this research in the journal "Frontiers in Immunology" under the title "Construction of a lipid metabolism-related risk model for hepatocellular carcinoma by single cell and machine learning analysis"

PROJECTS

Recipe Recommender | *Python, NumPy, TensorFlow*
- Developed the backend for a desktop application to recommend recipes based on photos of ingredients, using Python and Edamam
- Trained a CNN for classification based on VGG19 with Numpy and TensorFlow for supervised learning to an accuracy of 0.96
- Created the pipeline for uploaded images and classification results in Python

Residential Energy Model | *Python, VBA, Excel*
- Constructed a Markov Chain Monte Carlo energy consumption model under the supervision of Dr. XiaoYu Wu, simulating activity and heating loads for residents over 1 year, with accuracy within 3% of actual observed values for target location
- Refactored discretization method in daily simulation resulting in a 90% increase to accuracy
- Presented this project virtually to the International Green Energy Conference in July 2021