

James McCarron

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WORK EXPERIENCE

GUI Software Developer

May 2021 – Aug 2022

Intel Corporation

- Led development for a Python-based GUI software, enhancing data processing of SerDes chips
- Optimized performance of SerDes IP for external products with PCIe debug
- Updated and refactored GUI legacy code, leading to multiple successful launches of new IP

Machine Learning Developer

Sept 2019 – Apr 2021

QMIND, Queen's AI Design Team

- Implemented a convolutional neural network to detect a song's genre using Librosa to analyze the spectrogram of the audio input
- Employed robust data preprocessing and hyperparameter tuning to create an NLP model that generates song lyrics with 74% accuracy

ENGINEERING PROJECTS

City of Toronto Housing Price Visualization & Data Analysis

Python, Pandas, GeoPandas, Scikit-Learn

- Developed an end-to-end machine learning solution for analyzing rental prices in Toronto, leveraging efficient web scraping, a self-built large dataset, and feature engineering techniques
- Utilized City of Toronto open datasets to gain valuable insights into the geospatial distribution of rental prices using XGBoost, LightGBM, and Random Forest algorithms with scikit-learn
- Employed robust data preprocessing and hyperparameter tuning to optimize model performance for accurate price predictions

Full-Stack Geospatial Data Visualization Platform

JavaScript (Three.js), Python (Django), REST

- Developed a full-stack web application using Django to manage geospatial data, demonstrating proficiency in server-side logic to oversee complex data structures
- Utilized a Geocoder API for location-based data processing and created an interactive and responsive front-end interface using JavaScript and Three.js for visualizing geospatial data on a globe
- Implemented RESTful endpoints for efficient data retrieval and manipulation

EXTRACURRICULAR ACTIVITIES

AI Executive Coordinator

May 2021 – Apr 2022

Canadian Undergraduate Conference on Artificial Intelligence (CUCAI)

- Orchestrated a highly acclaimed AI conference with speakers from Microsoft, Google, and NASA
- Curated venues and speakers to help create the largest undergraduate AI conference in Canada
- Secured an optimal \$150,000 venue through negotiation and understanding attendees' needs

EDUCATION

Bachelor of Applied Science – Mathematics & Engineering

Queen's University

SKILLS

Programming Languages

Python (Scikit-Learn, Pandas) | C

Technologies

Azure | Docker | GCP | AWS | Django (REST) | Spark | Power BI