James McCarron

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WORK EXPERIENCE

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 using Time Series analysis
- Improved IP validation with XML and JSON scripting and APIs on various oscilloscopes/probes

Machine Learning Developer   Sept 2019 – Apr 2021
QMIND, Queen's AI Design Team
- Implemented a convolutional neural network to detect a song's genre by implementing the Librosa library to analyze the spectrogram of the audio input
- Employed robust data preprocessing and hyperparameter tuning to create an NLP model that generates lyrics based on the detected genre using the Genius API
- Song's genre can be predicted with 63% accuracy and lyrics can be generated with 74% accuracy

ENGINEERING PROJECTS

Toronto Housing Data Analysis and Visualization
Python, Pandas, GeoPandas, GeoJSON, 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

Uber Transportation Data ETL Pipeline
Python, SQL, Mage, GCP BigQuery, Power BI
- Applied an array of tools to analyze Uber data. Demonstrated expertise in handling large-scale datasets, orchestrating data pipelines, and optimizing data retrieval for efficient and scalable analysis
- Employed GCP Storage, BigQuery, and Mage Pipelining to ensure reliable and timely data extraction, transformation, and loading (ETL) processes
- Utilized Power BI to visualize and present key insights from the data

EXTRACURRICULAR ACTIVITES

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) **|** SQL **|** JavaScript (React.js)
Technologies   Azure **|** Docker **|** Google Cloud **|** AWS **|** Django (REST) **|** Power BI