Ammar Sidhu

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Education

University of Toronto Toronto, ON

H.B.Sc. in ***Applied Statistics*** *&* ***Geographic Information Systems****; Minor in* ***Mathematics*** *Expected Apr 2023*

Relevant Coursework

Statistics: Inferential & Bayesian Statistics, Mathematical Statistics, Regression Analysis, Probability Theory
GIS: Spatial Data Science, Information Processing, Cloud-Based Image Analysis, Remote Sensing, Digital Cartography

Experience

University of Toronto May 2022 – Aug 2022

Incoming Research Analyst Intern - Remote Sensing & Machine Learning *Toronto, ON*

- Goal of the internship is to **collaborate with TRCA** by leveraging long-term Landsat satellite data with **cloud-computing** to efficiently built **time-series of land cover and vegetation change** annually since 1984 at 30m spatial resolution
- Tasks will include filtering through potential land cover imagery to find the one(s) that best meet TRCA needs, and developing an **automated land cover change monitoring framework** through implementing **machine learning classification algorithms** and **cloud-based remote sensing**.
- Collected data will provide essential information for a wide variety of TRCA projects, including Natural Heritage System/Water Resources System development, habitat restoration initiatives, and monitoring programs.

Canada Post & Quantum Canada Apr 2019 – Jan 2022

Data Entry *Mississauga, ON*

- Assisted Customs Officers with entering parcel information using **excel spreadsheet automation formulas** to sort mail for delivery. Resulted in a **25%** increase in mail distribution times during the COVID-19 pandemic.

Technical Skills

Programming: Python, R, SQL (MySQL, T-SQL); *Familiar with*: HTML, CSS, JavaScript
Libraries: Scikit-Learn, Pandas, NumPy, Matplotlib, Seaborn, Tidyverse; *Familiar with*: TensorFlow, Keras
Software: Git, Jupyter Notebooks, ArcGIS Pro, MSSM, Google Earth Engine, QGIS, Microsoft Office

Portfolio Projects

Heart Disease Classification of Boston Hospital Data | *Scikit-Learn, Pandas, NumPy, Matplotlib, Seaborn*

- **Trained Linear** and **Ensemble Classification Algorithms** with Scikit-Learn on Boston Hospital's heart disease data from UCI Machine Learning Repository.
- **Achieved 92% Accuracy** on Random Forest Classifier through leveraging Hyperparameter tuning with GridSearchCV.

Hamilton House Price Prediction | *Scikit-Learn, GeoPandas, PySal, NumPy, Matplotlib, Seaborn*

- Created a tool that estimates house prices (**MSE ∼$57070.99, $R^2 \sim 0.805$**) to help predict house prices by census tract in the city of Hamilton, ON.
- Created a spatial regression tool that estimates house prices (**R^2 ∼0.8548, MSE ∼0.02 on log-transformed data**) based on the location of census tracts in Hamilton, ON.
- Concluded that **spatial modelling provides stronger models** for house price prediction than non-spatial machine learning models because **geographic location influences house prices**.

Bulldozer Price Predictor | *Scikit-Learn, Pandas, NumPy, Pandas, Seaborn*

- Trained via Scikit-Learn a **Random Forest Regressor** model on Bulldozer Pricing **Time-Series Data**.
- **Achieved R2 of 0.96 and MAE of 5925.14** on a Random Forest Regressor model through leveraging Hyperparameter tuning methods.

Certifications

Master SQL for Data Science: Learned to integrate SQL into the data preprocesing workflow.
International Business & Technology Certificate: Acquired through completing business and scientific coursework.