


# RAHUL ATRE

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## >> DATA SCIENCE | MACHINE LEARNING

**MOTIVATION** *I am passionate about **solving business problems** using Data Science & Machine Learning. I systematically & creatively use my skillset to **add tangible value** to the team, the business, and the end-user. I am constantly learning, and always looking to improve.*

**SKILLS & TOOLS**

**Programming:** Python (Base, Pandas, Numpy, Matplotlib, Scikit-Learn, Keras), Java, C, SQL, R, SAS

**Machine Learning:** Linear Regression, Logistic Regression, Decision Trees, Random Forest, KNN, k-means, PCA, Association Rule Learning, Causal Impact Analysis

**Other:** Statistics, Github, Data Visualisation, MS Office, Tableau, Jupyter Notebook, AWS, Google Cloud Platform, Unix, Linux

**EXPERIENCE** **Undergraduate Research Assistant - University of Ottawa**  
JAN - APRIL 2023

- Developed and coded a **Separation-Reduction algorithm** to enhance a segment of the Probabilistic Transitive Closure (PTC) algorithm
- Implementation using a divide-and-conquer process of reducing one digraph into smaller components (bipolar & weighted) with no two parallel arcs having the same sign
- Allowed for **enhanced efficiency** at polynomial time  **$O(n^2)$**  in computation of PTC which can provide new insights into the body of knowledge represented by bipolar weighted digraphs.

**PROJECTS** **Grocery Delivery Optimization**

- Created & applied a **Genetic Algorithm in Python** to search out a near-optimal route across 10 addresses. This led to estimated **savings of up to 50%** in both delivery time and fuel consumption over a route based upon transaction order alone. This approach could be utilised across many industries as a way to find more optimal solutions

**Mealer App**

- Led a team of 5 students in developing a food ordering Android app that provides a complete solution for clients to order favorite meals from chefs nearby
- Utilized **Chain-of-Responsibility, Model-View-Controller, Dispatcher-Action-Handler** design patterns

**EDUCATION** **Bs in Mathematics & BSc in Computer Science (Data Science)**

- **Dual Degree** in Computer Science and Mathematics with specialization in **Machine Learning**
- GPA: 3.9/4.0
- 2021 - 2026 - University of Ottawa, ON

**COURSES & CERTS** **DSI Data Science Professional Certification**  
(ONGOING)

**Actionable Learnings:** Extracting & manipulating data using SQL. Application of statistical concepts such as hypothesis tests for measuring the effect of AB Tests. Utilising Github for version control, and collaboration. Using Python for data analysis, manipulation & visualisation. Applying data preparation steps for ML including missing values, categorical variable encoding, outliers, feature scaling, feature selection & model validation. Applying Machine Learning algorithms for regression, classification, clustering, association rule learning, and causal impact analysis for measuring the impact of an event over time. Machine Learning pipelines to streamline the ML pre-processing & modelling phase. Deployment of a ML pipeline onto a live website using Streamlit. Using Tableau to create powerful Data Visualizations. Turning business problems into Data Science solutions.