

# Omar Hayat

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## EDUCATION

<b>UNIVERSITY OF WATERLOO</b> <i>Masters of Mathematics, Computational Mathematics</i> • Reserach Areas: Stochastic Optimization, Numerical Analysis, Machine Learning	Dec 2025 Waterloo, ON
<b>UNIVERSITY OF OTTAWA</b> <i>Bachelors of Science, Computer Science and Mathematics</i>	2023 Ottawa, ON

## PROFESSIONAL EXPERIENCE

<b>National Research Council of Canada</b> <b>Data Engineering Intern</b>   python, SQL, Dash, Excel, GitLab • Reduced hours of weekly labor time for researchers studying the environmental impact of public transportation systems and the efficacy of a remote railway safety inspection process; automated data preprocessing with Python scripts and satisfied data requests by performing SQL queries on a PostgreSQL management system. • Introduced an automated data loading pipeline built in Python which processed raw data in various file formats (.xlsx, .csv, .wav etc.) sourced from a rail telemetry system and safety inspection reports; designed a data table in a PostgreSQL environment to house processed data and designed tests to check for table correctness. • Delivered a dashboard web-application built with Python and Dash for a railcar inspection research project; utilized SQL to generate queries live based on the selected filters.	May 2022 – Dec 2022 Ottawa, ON
<b>Financial Transactions and Reports Analysis Centre of Canada</b> <b>Data Scientist Intern</b>   python, numpy, pandas, R, tidyverse, SQL, Git • Assisted the Canadian financial intelligence agencies' elite data analytics division to detect, deter and investigate attempts at terrorist financing and money laundering; gained intensive training in data security, integrity and privacy in relation to financial institutions and their transaction systems; built domain knowledge on banking systems and government financial regulatory policy. • Expedited development of a time-series analysis tool to monitor and detect suspicious transaction behavior working with python, R and SQL; researched extensively on mathematical theory behind anomaly detection methods and implementations in practice via the Scikit-learn and tidyverse libraries. • Expanded and improved existing documentation on in-house scripts by writing clear explanations of important assumptions taken and appropriate use cases; introduced comments to existing code to improve readability for future developers.	Sep 2021 – Dec 2021 Ottawa, ON
<b>Novartis International AG</b> <b>Data Scientist Intern</b>   python, numpy, pandas, R, TensorFlow, Excel • Assisted supply chain management team in building high fidelity prediction models for consumer buying behavior; compared performance of LSTM neural network, facebook prophet and ARIMA forecasting models built with tensorflow, prophet and tidyverse libraries respectively, leveraging 10 years of sales data; communicated findings in end of term presentation to non-technical upper management audience.	May 2020 – Dec 2020 Remote Canada

## SKILLS

**Languages:** Python, SQL, Latex, R  
**Libraries:** pandas, NumPy, Scikit-learn, TensorFlow, keras, prophet, Tidyverse  
**Tools:** Git, Neovim, Anaconda, Spyder IDE, PostgreSQL, RStudio

## AWARDS

*i-Comp-Data Fellowship (\$5,500, 2024); Dean's Honors List (2018-2023); Novartis Health Tech Challenge Winner (McGill University Hackathon, 2020)*