Mohammed Gad

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Education

BASc, Biomedical Engineering (Medical AI specialization), *University of Waterloo, Canada* 09/2019 - 04/2024
GPA: 3.9 | Relevant Courses: Artificial Intelligence, Deep Learning, Data Structures & Algorithms, Optimization, Statistics, Pattern Recognition, Computational Neuroscience, Signal Processing, Physiological Systems Modelling

Technical Skills

Languages: Python, R, SQL (PostgreSQL, MySQL, MS SQL), C++, Matlab
Packages and Tools: Pandas, NumPy, Matplotlib, TensorFlow, Scikit-learn, PyTorch, Keras, Optuna, OpenCV, BeautifulSoup, AWS, Flask, Git, Snowflake, Jupyter, VS Code, Microsoft Azure Suite, Microsoft Excel

Professional Experience

Data Science Intern May 2022 - August 2022 & January 2023 - April 2023
Northbridge Financial Corp., Toronto, ON, Canada [Hybrid]

- Migrated models from R to Python into Microsoft Azure by building model pipelines and API endpoints using advanced data integration techniques and MLOps guidelines to ensure efficient data flow and quality.
- Optimized SQL query readability and decreased runtime by 15% to efficiently extract data from Snowflake database tables.
- Developed strong communication and collaboration skills through detailed work documentation, collaborating with internal technical teams, and presenting to over 100 colleagues, managers, and Vice Presidents.

AI Student Researcher September 2021 - December 2021
University Health Network, Toronto, ON, Canada [Remote]

- Efficiently and accurately analyzed personal health data of over 100,000 patients from 6 hospitals using Python's Pandas and NumPy libraries to help predict the liklihood of cardiac complications upon patient admission to the Emergency Room.
- Monitored and optimized data feeds to ensure completeness, reliability, integrity, and HIPPA data privacy policy compliance.
- Built strong stakeholder management skills by collaborating with technical teams, medical professionals, and business partners.

Research Assistant January 2021 - April 2021
University of Waterloo, Waterloo, ON, Canada [Remote]

- Performed data extraction and wrangling to extract comprehensive course information from hundreds of webpages and PDF documents via webscraping to create a robust course database to enable data accessibility and analysis capabilities.
- Cleaned and refined over 150 course descriptions using NLP techniques to extract critical information for high-level analysis.
- Designed, implemented, and rigorously tested a file-processing Python script using pandas and CSV reader to manipulate spreadsheets for course data analysis.

Relevant Projects

User Behaviour Prediction Using Fitness Trackers: An N-of-1 Investigation February 2024 - April 2024

- Investigated the possibility and accuracy of predicting an individual user's behavior using 400 days of fitness tracker and lifestyle data via time-series analysis techniques.

Post-concussion Athlete Comprehensive Evaluation (PACE) September 2023 - April 2024

- Created an evidence-based computer vision system to aid athletic therapists in diagnosing concussions on-field via detecting deviations in gait patterns. The system was validated against a state-of-the-art motion capture system.

RNA Nucleotide Reactivity Prediction October 2023 - November 2023

- Developed a transformer-based model using PyTorch and Optuna for predicting RNA reactivity and chemical mapping.

Publications

P. M. Khanolkar, M. Gad, J. Liao, A. Hurst, and A. Olechowski, "A Pilot Study on the Prevalence of Artifical Intelligence in Canadian Engineering Design Curricula," Proc. Can. Eng. Educ. Assoc. CEEA, Jun. 2021, doi: 10.24908/pceea.vi0.14919.