Adrian Rigby
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Citizen of Canada, The United Kingdom, and The Republic of Ireland

EDUCATION

Queen's University Sep 2020 - June 2024
Bachelor of Applied Science – Applied Mathematics Engineering – Computing and Communications Kingston, ON

- Relevant courses include Information Theory, Data Analytics, Advanced Data analytics, Statistical Learning, Data Compression, Stochastic Control Theory, Algorithms, Information Structures, Probability Theory, and Complex Analysis
- The Applied Mathematics Engineering - Computing and Communications degree is a small and competitive program that takes the core of computer engineering, taking many of their classes and rather than specializing in fields within computer engineering, adds mathematics relevant to engineering fields up to the graduate level

Royal St. Georges College Sep 2016 - Jun 2020
High School Diploma Toronto, ON

- Model UN Delegate, International History Bee and Bowl competitor finishing second nationally as a team
- Played Rugby, Hockey, and Soccer each year of school

EXPERIENCE

Cumming and Partners June 2023 - Sept 2024
Intern Toronto, ON

- Reduced future application process times by streamlining the immigration application process for a recurring application
- Drafted documents for immigration packages to be inspected at the border
- Conducted market research on potential new clientele for the firm
- Digitized the database to keep important precedent documentation

Financial Library Plug in for Excel Aug 2024 - Oct 2024
Contractor Toronto, ON

- Ported a high performance financial library from 32 to 64 bit
- Using existing financial functions, reorganized code, used version control system, and built a project from the ground up in visual studio to generate an xll file that is used as a plug in for excel
- Implemented new build system using makefiles and definition files to work with more modern Windows systems

PROJECTS

Capstone Project - Generative Adversarial Network (GAN) Sept 2023 - May 2024
Team Leader Kingston, ON

- Implemented the Cycle-GAN architecture to create a generator neural network that cleans noisy signature images
- Final implementation created a larger gap in cosine similarity between fraudulent and real signatures
- Iterated the design using different information measures and loss functions, finding that an Lk-1 loss function performed best as measured through cosine similarity, peak signal to noise ratio (PSNR), and qualitative assessment.
- Worked in a collaborative team using Git and a virtual machine to allow 8 team members to contribute
- Delivered a detailed report and presentation on findings to faculty and students in the Applied Mathematics and Engineering Department.

NHL AI Agent Nov 2024 - Feb 2025
Co-Creator Toronto, ON

- Implemented a tool calling agent that took in user input and returned an answer based on data collected from the 2016-2024 NHL Seasons. The project was completed in a team of two, primarily using the LangChain library and OpenAI API.
- Created two tools to query a MySQL database and answer the user's questions about NHL performance, stats, and player information, two tools that used RAG to allow the agent to get relevant information about the NHL rulebook and NHL CBA, and Implemented tools to create shot and goal scatterplot images showing a visual representation of player scoring
- Leveraged an agentic workflow to allow an agent to determine which tool should be used by invoking the correct tools to create images, talk with a PDF file, or use a chain built for querying the MySQL database and return a natural language response to the user's input
- Created a GUI to interface with the model, accepting and displaying queries, responses, and appropriate images in real-time
- Streamlined process to create a simplistic GUI that saves time looking for unique information about the NHL

Lloyd's Algorithm Project Sept 2022 - Dec 2022
Team Member Kingston, ON

- Found optimal placement of Bike Share Toronto locations around the city using Lloyd's Algorithm
- Analyzed population, rideability, and ridership maps to determine the density used in Lloyds algorithm

SKILLS

- Programing languages: Python, C, C++, SQL, Matlab, and Java
- Libraries: Pandas, Numpy, Scikit Learn, Pytorch, Keras, Tensorflow, Matplotlib, LangChain
- Tools: Git, Visual Studio, Visual Studio Code, Snowflake, NoSQL, MySQL
- Won the Matt Kirby Award for leadership voted on by all team members of my hockey team