


ARMAAN NANJI

Toronto, Ontario

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Education

University of Toronto

September 2022 – Present

Honours Bachelor of Science in Computer Science and Economics

- **Academics** : Cumulative GPA of 4.00/4.00; Dean's List Scholar; In-Course University of Toronto Scholar

Relevant Coursework

- | | | | |
|---------------------------|---------------------|-----------------------|---------------------------|
| • Machine Learning | • Deep Learning | • Intro. to Databases | • Data Structures & Algo. |
| • Artificial Intelligence | • Operating Systems | • Systems Programming | • Stats & Data Analysis |

Experience

Research Assistant, Machine Learning

September 2024 – Present

University of Toronto, Rotman School of Management

Toronto, Ontario

- Performed literature reviews and assisted in the development and validation of novel research methodologies to compare patents similarities, measure inter-firm competition and detect product obsolescence
- Applied these methodologies by implementing a pipeline to process a dataset of over 250,000 products, using parallelization to distribute the computation across multiple GPUs with tools such as PyTorch and cuML
- Performed web-scraping using Selenium to extract product information that was used to augment the dataset

Research Assistant, Machine Learning

May 2024 – Present

University of Toronto, Department of Economics

Toronto, Ontario

- Preprocessed historical movie data by wrangling data, using keyword extraction and utilizing OpenAI to embed text
- Applied dimensionality reduction, cosine similarity models and clustering to the emeddings of movie synopses using Pandas, NumPy and scikit-learn, which helped researchers measure the political bias contained within movies
- Created visualizations using matplotlib and write-ups in L^AT_EX to present findings to research supervisors

Research Assistant, Statistical Analysis

May 2024 – August 2024

University of Toronto, Faculty of Medicine

Toronto, Ontario

- Applied statistical techniques using R, such as ANOVA and logistic regression, to draw inferences from experiments
- Consulted researchers on phenomena found in data, statistical methods to use and interpreting the results of analyses
- Read through medical literature to extract experimental data, summarise the results of statistical tests and create visualizations for notable findings, which were subsequently included in the final papers

Administrative Assistant

May 2023 – August 2023

VIA Rail Canada

Toronto, Ontario

- Managed an archive of over 1,000 documents within VIA Rail's real estate department
- Organised over 50 outbound work orders issued by VIA Rail Canada through the creation of spreadsheets
- Travelled to over 15 VIA Rail stations and created reports regarding the security features in each establishment

Projects

Traffic Sign Localization and Classification

- Used Keras to implement a neural network to classify street signs and predict their bounding boxes
- Was able to reduce the problems associated with exploding/vanishing gradients by using skip connections, He initialization and batch normalization, which improved IoU by 4.9% on the validation set
- Created an web app using Next.js and Flask that allows users to evaluate their own images using the final model

Technical Skills

Languages: Python, Java, C/C++, R, HTML, CSS, JavaScript, Typescript, PostgreSQL

Developer Tools: VS Code, PyCharm, IntelliJ, Visual Studio, RStudio, Git/GitHub, Slurm

Technologies/Frameworks: Next.js, ggplot2, NumPy, Pandas, MatplotLib, scikit-learn, Keras, TensorFlow, PyTorch