Armaan Nanji

Toronto, Ontario
armaan.nanji@mail.utoronto.ca github.com/armaan-n

Education

University of Toronto **September 2022 – Present**

Honours Bachelor of Science in Computer Science and Economics

- **Academics** : Cumulative GPA of 4.00/4.00; Geoffrey Payzant Award; University of Toronto Scholar; Dean's List Scholar

Relevant Coursework

- Machine Learning
- Artificial Intelligence
- Operating Systems
- Computer Organization
- Databases
- Systems Programming
- Data Structures & Algo.
- Stats & Data Analysis

Experience

Research Assistant **May 2025 – Present**

University of Toronto, Department of Computer Science *Toronto, Ontario*

- Conducted literature reviews on ML methods for task aware frame sampling and near duplicate video detection
- Performed experiments on Compute Canada using the FlowerML framework to explore the performance and computational costs of these models in a federated environment across different datasets and hyperparameters
- Constructed Pareto frontier with respect to different frame sampling and duplicate detection models to explore the empirical trade-off between model performance and computational complexity

Research Assistant **September 2024 – Present**

University of Toronto, Rotman School of Management *Toronto, Ontario*

- Assisted in the development of methodologies to gauge inter-firm similarity, establish links between a firms products and patents, and detect product obsolescence
- Used these tools to develop models that could gauge similarity based on previous M&A cases and licensing agreements
- Implemented a pipeline to clean, merge and process datasets of over 250,000 products and 8,000,000 patents, using Compute Canada to distribute the computation across multiple GPUs with tools such as PyTorch and cuML

Research Assistant **May 2024 – May 2025**

University of Toronto, Department of Economics *Toronto, Ontario*

- Preprocessed historical movie data by cleaning, 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
- Used Selenium to perform web-scraping on "Concert Archive" to explore changing music preferences over time

Research Assistant **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

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