# Mohamed Harmanani

647-864-7401 | harmanani.mohamed@gmail.com | linkedin.com/in/mharmanani | github.com/mharmanani

## EDUCATION

**University of Toronto**                                                                Toronto, ON, Canada
*Honours Bachelor of Science in Computer Science, Minor in Philosophy*          *Sep. 2016 – Nov. 2021*
- GPA: 3.74 / 4.00 (Annual); 3.28 / 4.00 (Cumulative)

## EXPERIENCE

**Bioinformatics Research Intern**                                                       Sep. 2020 – Present
*University of Toronto*                                                                  *Toronto, ON, Canada*
- Developing software tools with **Bash**, **Python** to analyze biological sequence data
- Writing and presenting multiple reports of summary statistics for each step in the data analysis pipeline
- Implementing algorithms for assembling transcript sequences, with an average quality metric of 85%
- Preserving data integrity by building automated quality checks and trimming contaminated sequences

**Software Engineer Intern**                                                             May 2019 – May 2020
*Venngage Inc.*                                                                          *Toronto, ON, Canada*
- Developed probabilistic algorithms for layout generation, increasing design quality metrics by 20%
- Optimized the icon searching feature using **React**, improving performance and reducing search times by 200%
- Implemented data tracking tools using **Mixpanel**'s API, and analyzed user data to diagnose performance issues
- Addressed performance issues in the proprietary slides manager, significantly reducing loading times
- Implemented user flows, responsive landing pages, and various UI components with **React**, **Redux**, and **CSS**
- Helped over 250 users by collaborating with customer support to resolve reported issues in real-time
- Automated UI testing with **JavaScript** and **Cypress** to cut down testing time in half ahead of release

## PROJECTS

**GroupMe.ca (Capstone Design)** | *UI/UX, JavaScript, React, Redux, Node.js, MongoDB, CSS*
- Conducted user research in the form of surveys & interviews, and identified key areas of user interest
- Designed a mid-fidelity digital prototype for usability testing, achieving an 80% user satisfaction rating
- Created sketches, wireframes and mockups to communicate user flows and interactions to teammates
- Specified the design requirements for the Beta software application, which observed an 8% increase in KPIs
- Implemented a recommender system to match students, achieving an 89% precision metric
- Performed frequent product tests to diagnose issues, and reduced number of bugs in production by 60%

**Shoe Pair Image Classifier** | *Python, PyTorch, torchvision, matplotlib*
- Implemented a convolutional network in **PyTorch** to determine if two shoes belong to the same pair or not
- Built and trained different model configurations to determine the best architecture for modelling the data
- Wrote a customized training loop from scratch and effectively tuned the hyperparameters with grid search
- Achieved a final testing accuracy of 80% for men's shoes and 88% for women's shoes

**Toxic Tweets Classifier** | *Python, scikit-learn, NLTK, pandas, matplotlib*
- Implemented and compared various models for detecting toxic tweets, with an average accuracy of 94%
- Performed **exploratory data analysis** by processing, cleaning, and visualizing tweets

**Episode Recommender System** | *Python, NLTK, SQLite, BeautifulSoup, pandas, NumPy*
- Wrote **web scraping** scripts to mine TV show data from IMDb using **Python** and **BeautifulSoup**
- Wrote **SQL** queries to clean and store the collected data in a SQLite database using the sqlite3 framework
- Implemented a recommendation system that matches keyword input from the user with the data
- Developed recommendation techniques based on episode rankings and similarity of descriptions

## TECHNICAL SKILLS

**Programming**: Python, SQL, MongoDB, JavaScript, Java, C, bash, HTML, CSS
**Data Science**: PyTorch, scikit-learn, pandas, NumPy, matplotlib, Deep Neural Networks (CNN, RNN, GAN)
**Tools & Technologies**: React, Git, Node.js, Flask, Unix/Linux, Docker, SLURM