Natalie Neda Ashgriz

n.ashgriz@mail.utoronto.ca | https://natal1e14.github.io/ | www.linkedin.com/in/natalie-ashgriz

EDUCATION

University of Toronto, Canada — *Honors BSc. Computer Science with High Distinction*
Sept 2018 - Jun 2022 **CGPA: 3.87/4.0**

Relevant Coursework: Linear Algebra I, Calculus II, Probability with Computer Applications, Algorithm Design & Analysis, Intro to Software Engineering, Computers & Society, Intro to Artificial Intelligence, Intro to Image Understanding, Natural Language Computing, Neural Networks & Deep Learning, Ethics of AI in Context

TECHNICAL SKILLS

Python, PyTorch, Java, Git, Android Development, HTML/CSS, Bootstrap, C, JavaScript, NodeJS, MongoDB, React Native, React, Flask, AngularJS, MySQL, PostgreSQL

EXPERIENCE

Researcher — *Third Space Lab, University of Toronto* Sept 2021 – Present

- Researched **AI Interpretability** in order to generate human-understandable explanations for why certain tweets have been labelled as containing Anti-Asian hate in the context of the COVID-19 Pandemic
- Developed a model using **GPT-2** fine-tuned on a dataset of explanations for stigmatizing tweets
- Tested multiple different models for classifying tweets as one of six stigmatizing categories, including Random Forest and several BERT-based models that achieved over 85% accuracy
- Supervised by Professor Ishtiaque Ahmed

NSERC-USRA Researcher — *Formal Methods Group, University of Toronto* May 2022 – Aug 2022

- Worked to find trends in the way that humans perceive different image transformations, such as rain or blurring, in order to make the **testing of safety critical machine vision components** more efficient
- Conducted research on different curve clustering techniques, recent studies on human vs machine performance, and current work on making machine vision components more robust to adversarial examples
- Developed a React website for running experiments to verify the validity of the trends found
- Supervised by Professor Marsha Chechik

AI4Good Lab Participant May 2022 – Jun 2022

- Worked in a team of 7 to develop and present a project that uses AI for social good
- Performed transfer learning on a **DenseNet** model to run sentiment analysis on images, with the aim of customizing social media feeds in order to minimize content that is detrimental to users' mental health

Final Project – *Neural Networks and Deep Learning (CSC413)* Feb 2022 – Apr 2022

- Worked in a group of three to explore the impact that different CNN models have on the Google NIC image caption generation model proposed by Vinyals et al
- Experimented with the AlexNet, VGG-19, and InceptionV3 models

Developer — *RBC Amplify Program* May 2021 – Aug 2021

- Worked in a team of 4 to **conduct research** on the Future of Work
- Developed a web app hosted on **OpenShift** and Outlook plugin using **React**, **Python, Angular,** and **VBA**
- Improved employee efficiency by addressing pain points in the hybrid work environment
- **Won** Audience Choice and Best Team at the end of the summer

Final Project — *Introduction to Machine Learning (CSC311)* Nov 2020 – Dec 2020

- Worked in a **team of 3** to develop an ML algorithm for predicting student correctness of a given question
- Tested and compared the accuracy of **kNN and Item Response Theory (IRT)** models on the given dataset
- **Researched** methods of improving the IRT model, in particular increasing the number of parameters
- Experimented with IRT models to determine the impact of more parameters on the expressivity of the model

AmpHacks 2020 — *Hackathon* Oct 2020

- Collaborated in a team of three and achieved **first place** at the virtual hackathon
- Created a web app for tracking subscriptions using a **Bootstrap** frontend and **Flask** backend
- Developed a **kNN** machine learning model in Python to classify a user's subscription usage as rare, light, medium, or heavy and suggest whether they should keep or cancel it

Android Developer — *Royal Bank of Canada* May 2020 – Aug 2020

- Developed and demoed two proof of concepts for new features for the RBC Android Mobile app
- Demonstrated good **communication** skills and **independence** throughout my virtual internship by effectively working with my teammates and completing tasks in a timely manner
- Gained a better understanding of the team structure, development in a corporate setting, and Android development throughout the internship
- Improved client experience by fixing bugs in the app

INTERESTS & ACTIVITIES

UofT Engineers without Borders (Logistics' Lead for Moral Code Hackathon), UofT AI (Outreach and Speaker Series), Innis College Choir, UofT FERA (Communications team), Marvel, Reading, Piano, Travelling

HONORS & AWARDS

Dean's List Scholar (2020,2022), The Fraser-Crawford Scholarships (2019, 2020), 3rd Place RBC NGI Hackathon (2019), Hosford Scholarship (2018)