

# VISHRUTHA TUPILI

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## EDUCATION

**University of Toronto**, Toronto, ON, Canada (2019 – Present)

**Bachelor of Applied Science**, Computer Engineering (Expected Graduation Date: June 2024)

- **Double Minor:** Artificial Intelligence, Engineering Business
- Related Courses: Introduction to Databases, Computer Networks, Operating Systems, Algorithms & Data Structures, Artificial Intelligence Fundamentals, Software Communication & Design, Programming Fundamentals, People Management & Organization Behaviour

## PROFESSIONAL EXPERIENCE

**IBM**, Back-End Developer (Co-op/Internship)

May 2022 – August 2023

- Performed security patch updates and suppressing vulnerabilities for the Red Hat Enterprise Linux (RHEL) and Ubuntu systems owned by members of the IBM POWER systems team
- Worked on a fraud detection AI model in Python that takes in a series of credit card transactions and predicts if a transaction is fraud
- Explored hyperparameter tuning, as well as TensorFlow tuning to optimize the CPU utilization during model building by changing the number of parallelism threads
- Compared and analyzed the performance of model inferencing in a DB2 environment while simulating a different number of users concurrently running the program.
- Analyzed communication between servers and clients with multiple TCP/IP connections using an ATM message passing workload using IBM App Connect Enterprise
- Investigated the throughput of the ATM message passing workload both in a RHEL environment, as well as in an OpenShift Container Platform (OCP) cluster

**6ixplore**, iOS Developer

May 2021 – January 2022

- Worked on an app using Swift that allows users to discover and order from local restaurants
- Explored the integration of Stripe payments to process credit card and debit card payments
- Collaborated with a UI/UX designer and back-end developer in order to seamlessly integrate front-end and back-end components
- Researched the possibility of incorporating Non-Fungible Tokens (NFTs) and a rewards program for users

## TECHNICAL SKILLS

- C, C++, Python, Java, JavaScript, HTML, CSS, MATLAB, SQL (IBM DB2, PostgreSQL)
- Object-Oriented Programming, Software Development Life Cycle (SDLC)
- PyTorch, NumPy, TensorFlow, Open Neural Network Exchange (ONNX)
- Git, GitHub
- UNIX/Linux, MacOS, Microsoft Windows
- Microsoft Office Suite: Word, Excel, PowerPoint, Outlook, OneNote, Project, Publisher, Access
- Adobe Photoshop, Adobe Lightroom

## PROJECTS

### **Text Conferencing Application**, Computer Networks, University of Toronto

April 2022 – May 2022

- Created a text conferencing chat room application that consisted of a server with registered users and several client nodes
- Used TCP to communicate between the clients and the server
- Implemented the following features: login with username and password, logout, create new chat room session, join/leave chat room session, send messages to a chat room session, invite other users to a chat room session, send private messages

### **Skin Cancer Detection**, Artificial Intelligence Fundamentals, University of Toronto

May 2021 – August 2021

- Developed a skin cancer detection algorithm that classifies cancerous patches among seven different types of benign and malignant skin cancer
- Collected and cleaned data by sorting and resizing over 10000 images of cancerous patches
- Experimented with hyperparameters such as learning rate, batch size, and epochs while analyzing training curves to determine the hyperparameter tunings
- Trained the model using transfer learning with AlexNet and an artificial neural network (ANN)

### **REV Maps**, Software Communication & Design, University of Toronto

January 2021 – May 2021

- Collaborated with two other students, using Git, to create a Geographical Information System (GIS) using the OpenStreetMaps database
- Focused not only on functionality, but also efficiency by preloading all data structures
- Used multithreading for maximum utilization of CPU time and to increase responsiveness
- Implemented a seamless user interface using Glade and GTK+

### **Skule Adventures**, Cloud Club, University of Toronto

September 2020 – January 2021

- Created a web-based game called *Skule Adventures* using phaser.js
- Implemented features such as double-jump and powerups, making the game more interactive
- Collaborated with front-end and back-end team members using GitHub

## AWARDS AND CERTIFICATIONS

- **Jeffrey Skoll Scholarship**, University of Toronto (September 2023)
- **Python For Everybody**, Coursera, University of Michigan (August 2020)
- **Introduction to Programming in C Specialization**, Coursera, Duke University (July 2019)
- **Dean's Merit Award**, University of Toronto (September 2019)
- **Edward S Rogers Sr. Admissions Scholarship**, University of Toronto (September 2019)

## EXTRA CURRICULARS

### **Social Media Lead**, Engineers Without Borders, University of Toronto

September 2020 – May 2021

- Created graphics and advertised Engineers Without Borders content related to the Policy & Advocacy portfolio
- Attended weekly Policy & Advocacy team meetings where we discussed important policy related topics within engineering