Hetav Pandya

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Education

University of Toronto - GPA: 3.97 — Toronto, CA
BASc, Computer Engineering with Artificial Intelligence Minor — Sep 2019 - May 2024
Cumulative average: 92.5%, ranked #2 in UofT Engineering in 2019-20

Linear Algebra: 99/100 | Algorithms and DS: 89/100 | Operating Systems: 89/100 | Electronics: 99/100 | Intro. to Machine Learning: 95/100 | Computer Networks: 90/100 | Software Engineering: 90/100 | Databases: 95/100

Skills

Programming Languages:	Python, C++, C, Go, Kotlin, JavaScript, Perl, TCL, Bash
Machine Learning:	TensorFlow, PyTorch, OpenCV, Kubeflow, Docker, Linux
Data Analysis:	PostgreSQL, R, MongoDB, MySQL, Hive, Trino SQL, Power BI
Project Management:	JIRA, Confluence, Agile - SCRUM, Git Version Control, GitHub, Perforce
Additional skills:	Flask, RestAPI, Verilog, ARM Assembly, FPGA Hardware, Quartus

Work Experience

Dept. of Mathematics, University of Toronto — Toronto, CA
Teaching Assistant - TA — September 2023 - April 2024

- Taught **Linear Algebra, Fundamental Calculus and Differential Equations** to engineering students at the University of Toronto.

Intel Corp. — Toronto, Canada
Software Engineering Intern — May 2022 - May 2023

- Developed a netlist writer in **C++** for upcoming Quartus Prime releases.
- Implemented an IP pin-mapping feature reducing time taken to compile customer designs by 15%.
- Used profiling tools like **VTune and flamegraphs** to optimize code and identify bottlenecks.
- Worked with the router team to determine requirements for the formal verification of our top model Agilex **FPGAs**.

Bell Enterprises — Toronto, Canada
Data Scientist Intern — May 2021 - Aug 2021

- Met with stakeholders to determine bottlenecks in performance.
- Optimized **MySQL** data queries reducing the time taken by 60% on average.
- Developed an automated production deep learning pipeline in **Python and Kubeflow** to detect potential flaws in new version releases, reducing detection time from 3 weeks to 15 minutes.

General Motors (GM) — Toronto, Canada
Machine Learning Model Developer — May 2021 - July 2021

- Worked on automating data collection pipeline with data pre-processing and image augmentation.
- Deployed a real-time custom **object detection model** with mean Average Precision of 0.7.

University of Toronto — Toronto, Canada
Data Analyst Research Intern - Faculty of Information — Jan 2021 - May 2021

- Analyzed the effects of machine learning on the future path of job creation and disruption.
- Used **Python (Selenium, Beautiful Soup)** to retrive and visualize data from multiple sources.

Extra Curriculars

GitHub Education Program — Toronto, CA
GitHub Campus Expert — September 2022 - Present

- Selected as one of the **65 global campus experts** in the 2022 cohort. Organized many open-source workshops and the first Github Field Day in Canada.

UofT Machine Intelligence Student Team — Toronto, CA
Co-President — July 2021 - July 2022

- Managed a club with **2000+ active members** and collaborated with different organizations like the Eng. Hatchery, UCL AI Society, AI@MIT, Harvard Open Data Project and many more.

UofT Engineering Society Toronto, CA
ECE Board of Director Representative April 2022 - April 2023

- Elected to represent **700+ students** at the highest level of governance in the student-run Engineering Society. As a Board Member, I collaborated with other representatives to make executive decisions about the operation of the Society that offers services to **6000+ students**.

Projects

Nash Equilibria convergence using RL *RLib, PettingZoo, Python* · View Project
Our team is working with Prof. Lacra Pavel, to developing new Reinforcement Learning algorithms that seek convergence to a Nash Equilibrium in networks with partial information like those found in autonomous vehicle networks and smart power grids.

UofT EventHub *Flask, Docker, MySQL* · View Project
This is a dynamic event management website that implements search, filter, backend databases and calendar integrations.

Toronto Armour *Kotlin, Jetpack Compose, Android* · View Project
An open-source android application that alerts the users when they enter neighbourhoods with high safety risks.

E-Motion *Python, OpenCV, Selenium* · View Project
A computer vision suite that enables users to play games, read e-books and listen to music using hand gestures. It secured the second place at UofT Hacks VIII

ECE-Hustler *C language, ARM Assembly, DE1-SoC board* · View Project
In this game you are an ECE student in the 2nd year at UofT trying to dodge the hurdles we faced! It is an obstacle course compiled on our custom-built ARM processor and displayed on a VGA display.

Asphalt 9 Hands-Free Simulator *Python, OpenCV* · View Project
This project is about creating a gaming interface that allows the user to control and play games solely using hand gestures. A demo test was done on the game - Asphalt 9

Hands2Ears *Python, OpenCV, Speech Recognition* · View Project
A neural network model that helps converting sign language (ASL) to speech in real time. It was chosen as the Bloomberg Challenge winner and second best project in NSBE Hacks 2020.

Magnum Opus *Python, Neural Style Transfer, OpenCV* · View Project
My personal journey of finding "art in mathematics" and "mathematics in art".

Awards

AWS Student Life Hacks - First Prize Amazon Web Services
Recognized for the PEYDoor project built during the Hackathon. March 2024

Moral Code Hackathon - Third Prize AI Ethics Club - UofT
Recognized for AI Ethics project on the ethics of autonomous driving. March 2022

Microsoft Discover AI Challenge on AI Ethics - First Prize Microsoft
Recognized for the AI Ethics Pipeline built during the Hackathon. June 2021

UofT Hacks VIII - Second Prize UofT Hacks
Recognized for E-Motion - computer vision enabled remote monitoring and control. Feb 2021

Edward S. Rogers Dept. of Computer Eng. Top Student Award University of Toronto
Awarded to top three students in the Department of Electrical and Computer Engineering. Sept 2020

Wallberg Undergraduate Scholarship Award University of Toronto
Awarded to top four students in UofT Engineering, based on academic performance. Sept 2020

Wolfram Award Hack The Virus Hackathon
Recognized for my project COVID-InfoBot based on speech controlled information system. Aug 2020

NSBE Hacks 2020 - Second Prize NSBE UofT
Recognized for my project Hands2Ears, real time ASL to speech conversion. Feb 2020

Bloomberg First Time Hack Winner Bloomberg
Recognized for my project Hands2Ears in "First Time Hack" category at NSBE Hacks. Feb 2020

University of Toronto International Scholar's Award Scholarship University of Toronto
Awarded to students for excellence in academics and a wide range of extracurriculars. May 2019