

Arnav Patil

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EDUCATION

University of Toronto

Ongoing - Apr 2027

BASc. in Industrial Engineering, Minor in Artificial Intelligence Engineering

Toronto, ON

- **CGPA: 3.5/4.0 with Dean's Honours List**
- **Extracurriculars:** IEEE UofT Student Branch, University of Toronto Engineering Society
- **Competitions:** MakeUofT 2024, Clarke Environmental Design Challenge 2024

TECHNICAL SKILLS

Languages & Tools: C/C++, Python (NumPy, pandas), MATLAB, Overleaf, LaTeX, Git

Coursework: Data Structures & Algorithms, Mathematical Modelling, Linear Algebra, Electrical Fundamentals

SELECTED PROJECTS

Deep Learning Framework with NumPy | [Neural Network from Scratch](#)

May 2024 - Jun 2024

- Created a modular deep neural net framework from scratch using NumPy.
- Documented mathematical derivations of forward pass, gradient descent, and all other relevant components.
- Solved the XOR gate by assembling a network with two linear layers with ReLU activation and MSE backpropagation functions.

Shortest Path Problem in Python | [Dijkstra's Algorithm](#)

Jun 2024

- Implemented Dijkstra's algorithm in a Python script, with plans to add functionality for user interaction.
- Documented understanding of the algorithm and provided examples for users to follow along.
- Provided basis for a new project to implement the Bellman-Ford algorithm to account for negative path weights.

Engineering Project Manager, Clockwork Yooyuball Project

Jan 2024 - Apr 2024

- Adapted an item from a video game to real life, from functionality to aesthetics, in a gated design project setting.
- Designed and prototyped a hard-coded circuit board with Arduino Uno to replicate the design's behaviour.
- Used Gantt Charts, status reports, and resource schedules to ensure project completion within the deadline.

EXPERIENCES

Sustainability Director

Apr 2024 - Ongoing

University of Toronto Engineering Society (EngSoc)

Toronto, ON

- Member of a Canadian Federation of Engineering Students (CFES) working group on sustainable curriculum change initiatives.
- Planned projects include action on the EngSoc footprint report, research on student/club funds divestment, and less wasteful F!rosh Week/Clubs Fair.
- Major initiative to drive resource sharing between UofT design teams call for divestment from fossil fuel sponsors.

Marketing Strategies Director

May 2024 - Ongoing

IEEE University of Toronto Student Branch (IEEE UofT)

Toronto, ON

- Responsible for defining marketing plans for events and creating strategy for distribution of marketing material.
- Running all IEEE UofT social media platforms (Instagram, LinkedIn, etc.) and event-specific social media.
- Establishing market insights and analytics to identify areas of strength and growth.

First Year Industrial Engineering Representative

Sept 2023 - Sept 2024

University of Toronto Engineering Society (EngSoc)

Toronto, ON

- Representing the concerns and interests of 70+ Indy students, serving as a liaison between students and EngSoc.
- Collaborating with EngSoc members and working towards solutions to enhance students' academic experience.
- Developing and implementing strategies that contribute to the growth and success of 1400 first-year students.