

# Arnav Nagzirkar

(+1) 647-563-2467 | [arnav.nagzirkar@gmail.com](mailto:arnav.nagzirkar@gmail.com) | [linkedin.com/arnav](https://linkedin.com/arnav) | [github.com/arnav](https://github.com/arnav) | [arnavnagzirkar.com](https://arnavnagzirkar.com)

## SUMMARY

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Enthusiastic and ambitious Computer Science, Statistics and Economics student with a strong foundation in software development, machine learning, web development, cloud computing, game development and algorithmic problem solving, eager to apply theoretical knowledge and programming skills in a professional tech environment.

## EDUCATION

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### University of Toronto

Sep. 2022 – Dec. 2026

*Honours Bachelor of Science in Computer Science, Statistics and Economics*

Relevant Courses: CSC263: Data Structures and Algorithms, CSC207: Software Design, CSC209: Systems Programming, CSC258: Computer Organization, STA258: Statistics with Applied Probability, STA256 & STA260: Probability and Statistics I and II.

### Central Peel Secondary School

Graduated June, 2022

*AP Gold National Scholar with Distinction*

## PROJECTS

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### LocateLot | *Google Maps API, Clean Architecture, Java, WebView*

May 2024 – Present

- Developed a location-based application to find the nearest parking spots in Toronto, utilizing Google Maps API
- Implemented various filters based on public green space data to provide personalized parking recommendations
- Designed the app using clean architecture principles for scalability and maintainability

### Bop App | *Typescript, Machine Learning, React Native, Node.js, AI*

September 2024 – Present

- Created a Tinder-style music discovery app that allows users to swipe on songs
- Built a machine learning model to generate personalized music profiles based on user preferences
- Developed both frontend and backend for seamless interaction and music recommendations

### StocksNow | *Machine Learning, Python, Flask, pandas, yfinance*

September 2024 – Present

- Developed a platform to provide financial analysis and recommendations for any traded ticker using machine learning models
- Implemented buy, sell, and quantitative finance strategies based on market data
- Built a web interface with Flask to allow users to interact with financial data and insights

### Personal Website | *Javascript, HTML, CSS, MongoDB, AWS, Github*

January 2025 – Present

- Developing a personal website which showcases projects, and portfolio
- Implementing a blogging feature, adhering to SEO principles to generate website traffic
- Built a web interface with Flask to allow users to interact with financial data and insights

### Custom Shell | *C, Socket Programming, Signal Handling, Process Control*

January 2025 – Present

- Implemented a custom shell in C, including support for signal handling, pipes, and multi-command execution
- Enhanced functionality to manipulate .WAV files within the shell environment
- Utilized socket programming to create a multiplayer text-based game within the shell, featuring automatic queuing of opponents

### Sokoban Game | *RISC-V Assembly, CPULator, Game Development*

September 2024 – December 2024

- Built a Sokoban puzzle game in RISC-V assembly, utilizing CPULator for development and testing
- Created dynamic, random grid generation and implemented player movement, box pushing, and target placement
- Developed a user interface to display game state and handle player input, including features for restarting and success messages

### Treemap Visualizer Algorithm | *Python, CSV, Data Processing*

May 2023 – August 2023

- Developed a Python-based algorithm to generate interactive treemaps from CSV file inputs, visualizing hierarchical data
- Implemented data parsing, validation, and error handling to ensure accurate and efficient data processing

- Integrated Matplotlib and Plotly to render scalable, real-time visualizations of nested categories

#### **Allure** | *Node.js, Discord API*

November 2020 – Present

- Developed a utility Discord bot using Node.js to manage server functions and improve user engagement
- Implemented moderation tools and fun commands to foster community interaction and to enhance server management
- Created a chat bot feature by implementing AI and NLP so that server members can have a chat with the bot within the server.

#### **Realm Clash** | *Roblox, Lua, Pathfinding, AI*

February 2024 – Present

- Developed a multiplayer action game on Roblox with advanced NPC AI and pathfinding mechanics
- Implemented systems for bonus item drops, player inventories, in-game shopping, and a player trading system
- Optimized game logic to enhance the user experience and engagement within the game world

#### **Survival Simulator** | *Roblox, Lua, Multiplayer*

October 2020 – Present

- Created a multiplayer swordfighting game on Roblox where players earn time by defeating opponents
- Designed systems for bonus drops, player inventories, and an in-game shop to enhance gameplay
- Worked on optimizing multiplayer functionality for smooth gameplay in a competitive environment

## EXPERIENCE

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#### **Data Retention Specialist Intern**

June 2021 – August 2021

*Bits Testing Services*

*Mississauga, ON*

- Managed and maintained data retention systems, customers' records in a database.
- Dealt with requests of data access, data analysis and file corruption
- Worked with managers and directors to prepare financial reports which used the data I was responsible for

#### **Inventory Control Associate (Summer Student)**

June 2022 – August 2022

*MAD Elevator*

*Mississauga, ON*

- Managed inventory databases to ensure accuracy and minimize discrepancies.
- Conducted regular physical counts and reconciled with system data.
- Collaborated with logistics teams to streamline processes and reduce costs.

#### **Math Private Tutor**

January 2024 – October 2024

*Brampton, ON*

- Provided one-on-one tutoring in mathematics to high school students.
- Developed customized lesson plans based on individual student needs.
- Monitored student progress and adjusted teaching strategies.

## TECHNICAL SKILLS

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**Languages:** Java, Python, C/C++, SQL (Postgres), JavaScript, HTML/CSS, R, Typescript, Lua

**Frameworks:** React, Node.js, Flask, JUnit, WordPress, Material-UI, FastAPI

**Developer Tools:** Git, Docker, Google Cloud Platform, VS Code, Visual Studio, PyCharm, IntelliJ, Eclipse, AWS, Porkbun

**Libraries:** pandas, NumPy, Matplotlib, Google Maps API