Nicholas Ratner

647-656-7568 | nicholas.ratner@torontomu.ca | LinkedIn | GitHub

Education

Toronto Metropolitan University Sept. 2021 – April 2026
Bachelor of Science in Computer Science, Co-op *Toronto, ON*

Technical Skills

Languages: Python, Java, C, C#, C++, HTML/CSS, JavaScript, SQL, R, Smalltalk, Elixir, Rust
Developer Tools: Git, Azure, Linux, Bash, VS Code, Visual Studio, PyCharm, MySQL, Oracle, Unity, Power BI
Libraries: Spark, Pandas, NumPy, React, JQuery, Bootstrap, OpenGL, Pygame

Experience

Data Engineer May 2024 – December 2024
Workplace Safety and Insurance Board (WSIB) *Toronto, ON*

- Developed **Python** scripts to automate common business tasks, reducing manual effort by **40%** and improving efficiency across various departments.
- Utilized **Python** and **Apache Spark** in **Azure Synapse** notebooks to process and analyze databases with over **10 million** records.
- Leveraged a suite of Azure cloud products, including **Azure Data Lake Storage** and **Azure Blob Storage**, to design and implement data pipelines and storage solutions.
- Created **SQL** queries to efficiently extract and transform data from large-scale databases with over **100 million rows** while improving the efficiency of retrieval by over **50%**.
- Designed **Power BI** dataflows and dashboards, enhancing data accessibility and visualization across 5+ departments, enabling more informed business decisions.

Program Instructor September 2021 – June 2024
City of Vaughan *Vaughan, ON*

- Developed detailed lesson plans and adapted existing ones for different classes and students' needs.
- Collaborated with colleagues to teach various classes, including coding, sports, and computer skills, increasing participation by over 30% over several sessions.
- Applied problem-solving skills to deal with issues regarding logistics and interpersonal conflicts.

Projects

Concert Database System | *HTML/CSS, JavaScript, PHP, MySQL, Linux/Bash*
* Worked in a **team environment** to create a simulation concert ticket management system.
* Utilized **MySQL database** to store and retrieve all necessary data for the system.
* Created both a **GUI** and a **command-line interface** for users to interact with the system.
* Collaborated with peers by utilizing **Git** for version control.

Multiplayer Chess Game with AI | *Python*
* Created an interactive chess game using various Python libraries including **TKinter**, **Pygame**, and **PIL**.
* Developed a multiplayer mode allowing players to play against one another locally. The UI includes a user-friendly design, music, sound effects, and various quality-of-life features such as allowing users to undo a move and reset the game.
* Engineered the AI component of the game using the **Minimax** algorithm with **Alpha-Beta pruning**.
* Using a complex heuristic function the AI can evaluate any board and calculate several moves ahead, finding the optimal one to play.

Data Structure Visualizer | *Python*
* Represented various data structures in Python, including stacks, queues, and binary search trees.
* Used my application to help over **50 students** study and understand basic data structure concepts, which helped me and my peers succeed in our classes.

TV Show Recommendation Website | *JavaScript, React, HTML, CSS*
* Created a website using the **React framework**, which allows users to answer questions and get a list of corresponding TV show recommendations based on their preferences.
* Utilized **GraphQL** queries to access information from a database to use in my website.