Nicholas Saroiu

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Education

2022-2026 **Honours Bachelor of Science**, Computer Science Major, Mathematics Minor (*ASIP Co-op*)
University of Toronto, Faculty of Arts and Science, Toronto, Canada
Relevant Coursework: Software Design; Data Structures and Analysis; Algorithm Design, Analysis & Complexity; Introduction to Databases; Introduction to Machine Learning; Neural Networks and Deep Learning; Operating Systems.

Work/Volunteer Experience

May 2025 — Present **QA Tester / Jr. AI Software Engineer**
Dibbly Inc., Oakville, Ontario
Helping implement test coverage for existing codebase as well as helping develop various full-stack applications. Working as a part of a team of ten developers. Using React.js for frontend, Next.js and Python for backend.

June 2024 — Oct 2024 **Frontend Developer**
Toronto, Ontario
Built a frontend UI that displays information about home battery systems. Developed as a volunteer for a small team of independent programmers. Used React.js for the UI.

Jan 2024 — Aug 2024 **TrackOne Project Developer**
University of Toronto Web Dev Club, Toronto, Ontario
Developed a comprehensive website for the University of Toronto (UofT) TrackOne Engineering program on behalf of the UofT Web Dev club. Worked as part of a small team of five developers. Used React.js for the frontend and Express.js for the backend.

Projects

Nov 2024 **Models to Predict Student Accuracy**
Built and analyzed three different machine learning models (K-Nearest Neighbors, Item-Response Theory, and Autoencoder Neural Network) that would predict student accuracy on diagnostic questions. Employed ensembling techniques to improve performance. Achieved final validation accuracies of 70%.

May 2024 **Patient Portal Backend**
Developed a secure Backend REST API that supports CRUD operations on a dental patient database. API was written using the Django REST framework in Python.

Nov 2023 **TTC Tracker**
https://github.com/nsaroiu/TTC-Tracker
Developed a web application that tracks real-time Toronto TTC vehicle locations and offers arrival time predictions to users. Frontend was written using React.js, and Backend was written using Java Spring Boot. Data is pulled directly from the TTC's open feed.

Jul 2023 **Niniboard V1: Custom 3D-Printed Keyboard**
https://nicholassaroiu.com/pages/projects#niniboard-v1
Designed and built a custom 3D-printed keyboard with a novel one-handed design shaped specifically for my hand. Used various tools such as Fusion360 and ZMK in order to build the prototypes.

Apr 2023 ***Guess Who?* Decision Tree Bots**
https://github.com/nsaroiu/GuessWho
Built five different AI players for the game of *GuessWho* using five decision tree algorithms (ID3, CART, C4.5, Chi-Square Automatic Interaction Detection, and Reduction in Variation). Implemented a UI using Python.

Programming Skills

Python, Java, C, Javascript, Typescript, SQL, React.js, Next.js, Spring Boot, Django, PyTorch, NumPy, HTML/CSS, Docker, Git, LaTeX, MIPS Assembly