



Steven
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Education

Sep 2019 - Present
Expected: May 2024
Year: 3

University of Toronto St. George (BSc)

Specialist in Computer Science and Minor in Mathematics.

Received **Dean's List Scholar** (2020, 2021) award with a cGPA of **3.94/4.00** (Major: 4.0). Entered with a **\$2000** UofT Entrance Scholarship.

Technologies

Languages	Python, C, Java, GoLang, C++, Typescript, HTML, CSS, SQL, bash
Frontend	React, Next, Tailwind
Backend	Node, Express
Databases	MongoDB, PostgreSQL
Tools	Git, Unix, Postman, Makefile, Vercel, Docker, PyTorch, NumPy, scikit-learn, Neovim, tmux

Experience

illuminate @ Hack the North repo devpost demo	<p>Pair-programmed a mixed-reality multiplayer game submitted to University of Waterloo's Hack the North 2020++ written in Pygame and OpenCV.</p> <p>Extract features from sticky notes on a monitor through a photo using canny edge detection. Allows players to design their own game map and interact with the real world.</p> <p>Accurately applied a transformation matrix to the screen contour to warp the image to a regular perspective.</p>
argus. @ Hack the 6ix repo devpost	<p>Built a real-time accident detection solution for CCTV footage leveraging TensorFlow's machine learning model in Python at Hack the 6ix.</p> <p>Reports road accidents immediately to the web and phone via Express and Twilio API to reduce response time for assistance accommodations.</p> <p>Displays the location of the crash using Google geolocation and shows truncated footage of the crash.</p>

Projects

readme. repo	<p>Developed a fully-featured backend for curating projects targeted towards developers. Posts include comments and a voting system much like Reddit.</p> <p>Designed a scalable, maintainable RESTful API using Typescript, Express, and Postgres.</p> <p>Architected performant, robust code with resilient error and exception handling, and used JWT authentication middleware to persist session information.</p>
Personal Website demo	<p>Engineering and maintaining a website using Typescript, Next, and Tailwind.</p> <p>Shipping a blog with live markdown preview and \LaTeX rendering support, deployed through Vercel.</p> <p>Currently writing about the Kademlia DHT protocol.</p>
go-tcp repo [IPR]	<p>Implementing the TCP protocol in Go. Followed RFC 793, the original protocol, to establish an incoming TCP connection using the three-way handshake and gracefully terminate a connection.</p> <p>Designing support for data segments, retransmissions, and timers. Currently implementing RFC 1122 and RFC 7414, which lay out the requirements for clean interoperability for internet hosts.</p> <p>Building out multiple TCP streams management, with support for blocking operations, reading and writing data, and application-controlled shutdown.</p>

Other Projects

DODOfs	Implemented an extent-based FUSE file system with support for many file system operations in C.
msg_queue	Built a multithreaded message queue with I/O multiplexing functionality (similar to the poll() syscall).
Alice Maze Solver	Programmed a Python API that solves the Alice Maze puzzle in the shortest path using BFS.