Steven Thomas Mathew

stethomat.me
https://github.com/steven-mathew
ste.tho.mat@gmail.com
LinkedIn

Education

Sep 2019 - Present
Expected: May 2024
Year: 3

University of Toronto (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, Java, C, Go, C++, Typescript, JavaScript 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

illuminote
@ Hack the North

repo
devpost
demo

Pair-programmed a mixed-reality multiplayer game submitted to University of Waterloo's Hack the North 2020++ written in **Pygame** and **OpenCV**.

Used canny edge detection to extract features from sticky notes on a monitor through a photo. Allows players to design their own game map and interact with the real world.

Accurately applied a transformation matrix to the screen contour to warp the image to a regular perspective.

argus.
@ Hack the 6ix

repo
devpost

Built a real-time accident detection solution for CCTV footage leveraging **TensorFlow**'s machine learning model in **Python** at Hack the 6ix.

Reports road accidents immediately to the web and phone via **Express** and Twilio API to reduce response time for assistance accommodations.

Displays the location of the crash using Google geolocation and shows truncated footage of the crash.

Projects

readme.
repo

Developed a fully-featured backend for curating projects targeted towards developers. Posts include comments and a voting system much like Reddit.

Designed a scalable, maintainable RESTful API using **Typescript**, Express, and **Postgres**.

Architected performant, robust code with resilient error and exception handling, and used **JWT** authentication middleware to persist session information.

Competitive Programming
repo

A repository containing over **400** competitive programming solutions to online judges such as Codeforces, DMOJ, and Leetcode written in **C++,** Java, and Python.

Included a C++ **open-source** library of blazingly-fast templates for algorithms and data structures. Covered topics on Graph Theory, Dynamic Programming, Data Structure, and more.

Certified for Advanced Algorithms and Complexity as per the **Google** CSSI Program, offered by UCSD.

Personal Website
demo

Engineering and maintaining a website using Typescript, **Next**, and Tailwind.

Shipping a blog with live markdown preview and LaTeX rendering support, deployed through **Vercel**.

Currently writing about the Kademlia DHT protocol.

go-tcp
repo [IPR]

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.

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.

Building out multiple TCP streams management, with support for blocking operations, reading and writing data, and application-controlled shutdown.