Gabriel Ethan Vainer

647-271-6729 | vai9er@gmail.com | linkedin.com/in/gabriel-vainer | github.com/vai9er | vainer.dev

Education

University of Toronto — Toronto, CAN
Bachelors in Computer Science; Software Engineering Stream — *Sep. 2020 – Apr. 2024*
Awards: *2021 Dean's List, University of Toronto Entrance Scholarship*

Experience

Teaching Assistant — Jan. 2023 - Present
University of Toronto — *Toronto, CAN*

- Facilitated student learning and engagement as a lecture TA for **CSCA08**, an introductory course on procedural programming in **Python** and core computer science topics including **Algorithms** and **Complexity**

Software Developer Intern — Apr. 2022 – Mar. 2022
Empyrean Medical Systems — *Miami, USA*

- Engineered a robust overhaul of Empyrean's **Dosimetry Calculation Engine** using **C**, integrating complex algorithms for dose calculation and voxel interpolation which enhanced precision in estimating effective ionizing radiation exposure for Interventional Radiology equipment
- Architected and deployed robust **TCP/IP** socket communication protocols within the system which streamlined real-time data exchange between users and IR equipment, elevating operational efficiency and reliability
- Transformed the original engine into a well-structured, non-monolithic system, reducing the main engine file by **64%** while maintaining functionality, responsibility, and clean architecture.

Software Engineer Intern — Jan. 2022 – Apr. 2022
Royal Bank of Canada — *Toronto, CAN*

- Utilized **Java, Maven, Postman, Git,** and **Spring** to implement new Microservice backend features for the Featured File Scenario and Profile Compliance APIs within RBC's client systems application
- Implemented comprehensive end-to-end test cases using the **Cucumber Framework** to ensure the reliability, functionality, and performance of critical software systems.

Projects

Open Source Development | *Pandas, Cython, Python*

- Led optimization of Pandas' **DataFrame.corr()**, introducing a Cython-based multi-threaded approach with a 'parallelize' option, significantly speeding up **Spearman** and **Pearson** calculations without accuracy loss.

deChess | *ETHGlobal Hackathon, ReactJS, Javascript, Chessground*

- Co-developed a P2P chess platform with NFT pieces and chat system using **React** and js-waku which won over **$6000** from 5 sponsors

Traffic Racer | *MIPS Assembly*

- Developed a 2D Traffic Racer game using MIPS Assembly, featuring movement controls, collision detection, score tracking, and enemy AI, with an efficient bitmap display for engaging graphics.

System Monitoring Tool | *C, Bash, Linux*

- Designed and deployed a high-accuracy Linux system monitoring tool in C, providing dynamic, real-time analysis of system metrics with a user-friendly CLI, advanced security features, and customizable graphical reporting.

Promedio | *Mongo DB, Express.js, ReactJS, Node.js*

- Built a website with **MERN** stack to help **400+** students track their cGPA and reduced academic calculation time from **4 minutes** to **2 seconds**

BookMeBot | *Python, Javascript, Node.js, Selenium, Git, MySQL*

- Developed a **booking automation API** using **Selenium and Python** for a chat bot that allows users to quickly book multiple gym times in advance (via Discord and Facebook Messenger) without authentication.

Technical Skills

Languages: Python, C, Java, JavaScript, HTML, CSS, SQL
Frameworks and Databases: React, Django, Mongo DB Spring, Cucumber, MySQL, Firebase Realtime
Environments and Tools: Linux/UNIX, Maven, Selenium, Git, Node.js, Material UI, Postman, JUnit, Jira