

# GABRIEL ETHAN VAINER

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## EDUCATION

### University of Toronto

Bachelors in Computer Science; Software Engineering Stream

Sep. 2020 – Dec. 2024

Toronto, CAN

**Awards:** 2021 Dean's List, University of Toronto Entrance Scholarship

## EXPERIENCE

### Software Developer Intern

Empyrean Medical Systems

Apr. 2022 – Present

Boca Raton, USA

- Created a **C# Controller API** for real-time system updates on **DWIN DGUSH LCM** displays by utilizing the **.NET SerialPort** library for implementing secure packet transmission and validation protocols.
- Integrated **Dose Calculation Algorithms** and **TCP/IP** socket protocols into Empyrean's Dosimetry Engine in **C**, optimizing **voxel-based radiation transport simulations** for Radiology equipment.
- Reduced the engine codebase by **64%** through modular refactoring while maintaining functionality, responsibility, and clean architecture.

### Software Engineer Intern

Royal Bank of Canada

Jan. 2022 – Apr. 2022

Toronto, CAN

- Developed **microservices** in RBC's Client Systems application for the **Retail Banking Payments Technology & Integrations Lab**, enhancing **Input Validation**, **Schema Validation**, and **Compliance Enforcement** features for the File Management and User Compliance APIs using the **Spring Core Framework**.
- Utilized the **Cucumber Framework** to implement end-to-end application test cases with a **BDD** approach to validate the performance and functionality of the client system.
- Authored detailed documentation in **Confluence**, including setup steps and architecture overviews, to help new developers onboard and navigate the API Lab workspace.

### Frontend Developer

Taichi Graphics

Jan. 2023 – Apr. 2023

Toronto, CAN

- Engineered Taichi's internal technical documentation frontend using **React** and **DocuSaurus**, streamlining developer engagement and project onboarding for the open-source community.

### Teaching Assistant

University of Toronto, **CSCA08** (Winter '23, Winter '24, Fall '24), **CSCD03** (Fall '23)

Jan. 2023 – Present

Toronto, CAN

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

## PROJECTS

### UofT Blueprint | Typescript, React, Next.js, Firebase

- Led a team of 4 developers in architecting and implementing UofT Blueprint's website redesign and a custom CRM solution using **TypeScript**, **React**, **Next.js**, and **Firebase**, applying **Agile principles** for efficient sprint planning and task distribution.

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

- Contributed to a **peer-to-peer chess platform** and chat system using **React** and js-waku which won over **\$6000** from 5 sponsors.

### 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.

## TECHNICAL SKILLS

**Languages:** Python, C, C++, C#, Java, JavaScript, Typescript HTML, CSS, SQL, Haskell

**Frameworks and Databases:** React, Django, Mongo, Spring, Cucumber, MySQL, Firebase, Next.js

**Environments and Tools:** Linux/UNIX, Maven, Selenium, Git, Node.js, Material UI, Postman, JUnit, Jira