

Shihan Sharar

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Education

University of Waterloo

Waterloo, ON

BACHELOR OF COMPUTER SCIENCE (COOP)

Sept 2023 - Aug 2028 (Expected)

- **Dean's List** (all terms); CGPA: **93.7%**, CS GPA: **95.8%**
- **Skills:** React, C++, Python, Typescript/Javascript, CSS

Experience

Ford Motors Canada

Ottawa, ON

PLATFORM SOFTWARE DEVELOPER - PROVISIONING

Jan 2025 - Apr 2025

- Boosted unit-test coverage for the provisioning component from **95.0%** to **99.6%** line coverage and from **92.5%** to **98.7%** decision coverage using **C++** and **GTest/GMock**, while driving code-duplication down from **0.5%** to **0%**.
- Utilized a helper class to invoke component-proxy methods **asynchronously**, improving service responsiveness.
- Integrated **Valgrind** & **sanitizer** tooling into the **Python**-based functional-test suite, automating detection of CPU bottlenecks & memory leaks, and analyzing the resulting logs to eliminate issues and optimize performance.
- Deployed **SonarQube** analysis for the **Android** provisioning component, eliminating **120+** code smells and reducing duplication from **20%** to **0%**, enhancing maintainability and code quality.

InsightIn Technology

Dhaka, Bangladesh

SOFTWARE ENGINEERING INTERN

July 2024 - Aug 2024

- Translated Figma and Photoshop mock-ups into **5+** responsive **React** and **TypeScript** web pages, boosting run-time performance by **~30%** through use of **React hooks** and **memoization** to deliver dynamic web solutions.
- Designed and prototyped **4** responsive products—two SaaS dashboards and two marketing sites—in **Figma**, using reusable component libraries, auto-layout, and prototypes to accelerate design-to-development hand-off.
- Developed a reusable library of responsive, table-based **HTML** email templates with inline **CSS**, executing full-suite **Litmus QA** to ensure pixel-perfect, accessible delivery across all major desktop and mobile clients.

Projects

RAIInet: C++ Multiplayer Strategy Game

- Developed a **C++** strategy game by applying **MVC** architecture, **SOLID** principles (**SRP**), and the **Observer** pattern to decouple core logic from both text-based & **X11** graphical interfaces, ensuring modularity and maintainability.
- Scaled gameplay to support both two & four-player modes by parameterizing player count, dynamically transforming board layouts, automating elimination cleanup, and rendering separate display windows per player.
- Ensured **strong exception safety** and robust memory management by exclusively using **'std::shared_ptr'** and **'std::weak_ptr'** smart pointers for pre-state-change validation—achieving leak-free, fault-tolerant execution.

The Jobster API: MERN Job-Tracking Platform

- Developed a dynamic web application for managing job applications, utilizing **React** for a seamless user experience and **Express.js** to implement robust user authentication, searching, sorting and filtering capabilities.
- Integrated **MongoDB** as the database layer and **Mongoose** for data modeling, ensuring efficient storage, retrieval, and manipulation of job application and user data while maintaining data integrity and scalability.

ByteCraft: Next.js/React Blog

- Developed a highly responsive, full-stack blog application using **Next.js** and **React**, incorporating **server-side rendering** to ensure fast load times, smooth navigation, and a flawless user experience.
- Implemented interactive animations and transitions using **Framer Motion** to enhance visual appeal.
- Engineered a **dark-mode toggle** with persistent user settings using **cookies**, ensuring cross-session consistency.

Aora: React Native Video Sharing App

- Developed a dynamic mobile app using **Expo**, **React Native**, and **Appwrite** for uploading AI-generated videos, featuring a robust **authentication system** with secure email login, data protection, and session management.
- Implemented key features such as an interactive home screen with an animated **FlatList**, in-app **video playback**, **pull-to-refresh** functionality, and **full-text search** for seamless browsing and real-time search results.