

# SAQIB ASHRAF

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## Technical Skills

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**Languages:** Python, Typescript, C++, C#, C, Java, Go, Rust

**Libraries and Frameworks:** .NET, Spring Boot, Next.js, Node.js, Express.js, PostgreSQL, GraphQL

**Developer Tools:** Git, Docker, AWS, EC2, Supabase, Firebase, Vim, VSCode

## Experience

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### Ontario Institute for Cancer Research

May 2025 – Aug 2025

*Fullstack Software Developer*

*Toronto, Ontario*

- Cut onboarding time by 40% by building a TypeScript DFS parser for the Lectern data dictionary that converted 1,200+ nested conditionals into clear, human-readable rules for bioinformaticians and lab scientists
- Optimized recursive parser and React schema-table components with profiling, memoization, and virtualized rendering, enabling real-time exploration of 15,000+ JSON paths with 10+ levels of nesting
- Accelerated data-model review by 50% by embedding interactive ERDs from JSON schemas with React Flow
- Enabled institutes to self-host versioned schema dictionaries through three load modes (server fetch, bundled JSON, custom manifest), reducing integration friction by 70% and supporting offline workflows for partner sites
- Built a JSON→TSV converter enabling frontend and server-side downloads, streamlining partner data sharing

### Port 443 Inc.

September 2024 – January 2025

*Fullstack Software Developer Intern*

*Burlington, Ontario*

- Developed a private .NET-based REST API with Bogus.Net, introducing the first automated integration testing pipeline on a Kubernetes cluster, simulating realistic datasets and user workflows for 15,000+ customers
- Built a TestSchoolGeneration service in .NET powering the integration testing pipeline, using HashSets and Dictionaries for O(1) lookups and fast database calls, validated by 1,000+ lines of comprehensive unit tests
- Built a Bootstrap-powered Submission Bar in Angular.js, integrated into 380+ components for a consistent UX
- Implemented teacher navigation in TypeScript using RxJS fork joins, sets, and maps for 12,000+ users
- Localized C# application with Microsoft Locale APIs to provide English support across 150+ global regions

### Appy.Yo

March 2024 – June 2024

*Software Engineering Intern*

*Remote*

- Implemented RESTful API endpoints with Next.js and PostgreSQL, improving query performance by 35%
- Built Selenium automation in Python to validate 10 web pages in 30 seconds, streamlining regression testing
- Resolved 20+ production bugs through root cause analysis, reducing user-reported issues by 35%
- Collaborated with the CEO on Figma designs, translating mockups into reusable React components with Tailwind CSS

## Projects

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### Dropbear Programming Language 🐼

JavaScript, Language Design, Compilers

- Built a Lisp-inspired programming language in JavaScript with lexical analysis, recursive descent parsing, tree-walking interpretation, variable declarations, and Babel targeting for JavaScript compilation

### CustomLicenser VS Code Extension 🏢

TypeScript, Node.js, VS Code API

- Developed a TypeScript-based VS Code extension for automated license header management, supporting 6+ license types and 15+ file formats, with intelligent comment detection and edit-distance matching to catch license typos

### Brawn 🏋️

MongoDB, Express.js, React.js, Node.js, TailwindCSS

- Built a fitness web application featuring a ChatGPT-based AI chatbot for personalized workout guidance, a dynamic analytics dashboard, and a longest-consecutive-sequence algorithm to track user streaks

### World Development Analytics Engine 🗺️

C++

- Built a C++ analytics engine for World Bank datasets, implementing custom BSTs, hash tables, and graph algorithms to reveal cross-country relationships and speed up economic research with O(1) lookups and O(log n) queries

## Education

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### University of Waterloo

Expected 2028

*Bachelor of Applied Science in Computer Engineering*

*Waterloo, Ontario*