

Sadiq Rahman

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Education

University of Waterloo

2022 - 2027

Candidate for Bachelor of Applied Science in Computer Engineering

Waterloo, ON

- **Relevant Coursework:** Computer Architecture, Computer Networks, Compilers, **Data Structures and Algorithms**, Digital Hardware Systems, **Real-Time Operating Systems**, Systems Programming and Concurrency

Experience

University Health Network - Techna Institute

May 2024 – Mar 2025 (2 terms)

Engineering Technician/Software Developer

Toronto, ON

- Replaced a legacy audits UI with a cross-platform Electron app incorporating time-range pickers, device/user filters, and modern UI elements to enable fast drill-downs, **cutting time-to-first-result by ~50%** and enabling managers to audit camera access by employees and identify potential distractions
- Built a **full-stack audit platform** with Node/Express + MongoDB REST API and a React/TypeScript client, adding secure login, validated queries, and reusable UI components across multiple pages improving system reliability
- Returned for another term to cut large-dataset latency with virtualized tables (**~80% faster**), improve responsiveness across window sizes, fix critical bugs, and expand packaging/auto-update testing with Electron Builder
- Collaborated with engineers to resolve **10+ weekly** patient camera failures and conducted network jack validation in **100+ hospital rooms** using ping tests, minimizing downtime and ensuring uninterrupted patient monitoring

The Regional Municipality of York – Corporate Services

Sep 2023 – Dec 2023

IT Service Desk Support Analyst

Newmarket, ON

- Triaged and resolved **100+ support tickets weekly** by collaborating directly with end-users to diagnose hardware/software issues and ensure timely service restoration, maintaining high client satisfaction
- Researched and developed standardized troubleshooting workflows by testing common failure cases and creating step-by-step guides, **reducing average resolution time for frequent issues by ~20%** and improving team workflow

University of Waterloo – Muslim Student Association

Sep 2022 – Dec 2022

Tech Team Lead - Software Developer

Waterloo, ON

- Redesigned the MSA website (Shopify + custom CSS) with a student team, modernizing layout, improving usability for **500+ students**, and ensuring accurate weekly prayer times and location updates across devices
- Improved accessibility and visibility of club initiatives by redesigning event pages, boosting student engagement

Projects

Portfolio Website | React, Vite, Tailwind CSS, JavaScript, Node.js • GitHub

- Designed and developed a **responsive personal portfolio website** using React and Tailwind CSS
- Customized SEO and OpenGraph metadata with react-helmet-async for improved search visibility and link previews
- Deployed the site using Vite build tools and version-controlled via Git/GitHub for continuous iteration

Startup Website Mockup – JOY-STICK | HTML, CSS, Bootstrap, Accessibility • GitHub • Live Demo

- Designed and implemented a multi-page mock website for a gaming startup concept with responsive layouts using **Bootstrap 5 components** (carousel, cards) and custom CSS to deliver a polished, modern UI across screen sizes
- Applied **accessibility best practices** (semantic HTML, ARIA labels) to improve usability and inclusivity

Real-Time Operating System (RTOS) | ARM Assembly, C

- Developed a lightweight RTOS in C/ARM Assembly for STM32 Cortex-M4, supporting **multitasking, preemptive EDF scheduling, dynamic memory allocation**, and task management APIs (osKernellnit, osCreateTask, osYield)
- Implemented a custom heap allocator and low-level context switching routines using PendSV interrupts

GPS Navigation System | C++ • GitHub

- Implemented a **weighted graph library** in C++ to model road networks, supporting vertex insertion and removal
- Built a Dijkstra-based shortest path algorithm with priority queues and hash maps to compute efficient routes

Technical Skills

Languages: TypeScript/JavaScript, C/C++, Python, Java, Bash, SQL

Frameworks/Tools: React, Electron, Node.js/Express, Vite, Tailwind/Bootstrap, Git/GitHub (Actions), Electron Builder

Platforms/Other: Linux, REST APIs, MongoDB, ARM/RTOS (STM32), Accessibility (WCAG/ARIA), Virtualized Lists