


SPARSH SHAH

Waterloo, Ontario

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Education

University of Waterloo

Sep. 2025 – Jun 2030

Bachelor of Applied Science in Systems Design Engineering

Waterloo, On

Relevant Coursework

- Data Structures
- Algorithms Analysis
- Internet Technology
- Computer Architecture
- Software Methodology
- Database Management
- Systems Programming

Projects

Vaultify – Music Import & Streaming Platform | *React, MongoDB, Express.js, React.js, AWS, Spotify Api*

- Developed a Spotify-integrated app allowing users to import playlists, convert tracks to MP3 using YouTube, and stream them via a custom React-based player
- Full-stack architecture powered by Node, MongoDB, and AWS S3.
- Integrated a custom audio player with play/pause/skip features and ensured secure token handling and refresh logic via Spotify OAuth flow.
- Developed RESTful APIs with Express and stored track metadata (title, artist, album art, MP3 URL) in a MongoDB atlas cluster, enabling efficient retrieval and playback in a React UI.

Global Task Manager Web App | *MongoDB, Express.js, React.js, Node.js, Socket.IO*

- Created a globally accessible, shared task list where users can add, remove, and mark tasks as complete.
- Leveraged Socket.IO to broadcast real-time changes to all users, ensuring a seamless collaborative experience.
- Built a clean, responsive UI for usability across devices.

Autonomous Robotics System | *C++, PROS*

- Programmed a competition robot using Purdue Robotics Operating System (C++) for the VEX Robotics game challenge.
- Implemented a PID control system to stabilize and automate arm movements with high precision..
- Utilized odometry and PID-based navigation to execute complex autonomous routines, contributing to a provincial record for most autonomous win points.
- Developed a PID tuning algorithm using binary search, streamlining the tuning process and sharing it with teammates to improve team-wide development efficiency.

Technical Skills

Languages: HTML/CSS, JavaScript, C++

Developer Tools: VS Code, Amazon web services S3, MongoDB atlas

Technologies/Frameworks: React.js, Node.js, Express.js

Volunteer / Extracurricular

Web Development Assistant

Jan 2024 – Jun 2025

Assistant

FortMcMurray Sanatan Mandir

- Assisted in maintaining and updating the mandir's website to improve user accessibility and keep content current.
- Supported development tasks including layout design, content integration, and bug fixes using HTML, CSS, and JavaScript.
- Collaborated with senior developers and temple leadership to ensure the site met community needs and reflected cultural values.