Jonathan Bodner

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EDUCATION

University of Waterloo | *BASc. in Computer Engineering with Distinction*   *Apr 2024*

SKILLS

Languages: C, C++, Java, Python, SQL, HTML, CSS, JS, VHDL, Verilog, Processing, MATLAB, Assembly

Technologies: Git, React, Node.js, Bootstrap, CUDA, Quartus, LTSpice, Windchill, Docker, Creo, Auth0, Spring

WORK EXPERIENCE

ExtentCom | *Software Developer*   *May - Aug 2021 & Sept - Dec 2023*

- Developed an embedded C program for an ARM processor on a custom PCB, enabling daisy-chained radio network simulation, handling I/O commands from PC and controlling signal transmission across all attenuators
- Researched and developed a gradient algorithm that will accurately determine location of nodes on a map based on limited node locations and interconnecting distances. Analyzed performance by conducting tests in MATLAB in order to optimize convergence rate, accuracy and runtime
- Designed a browser based Command Line Interface page using HTML, CSS & JS that uses AJAX to allow users to input commands & receive responses from a remote machine's CLI API in real time
- Built a custom API that replicates CLI behavior with Node.js. Used to conduct tests on the above front-end

PointClickCare | *Software Developer*   *Jan - Apr 2023*

- Lead a rewrite of an internal message simulation tool with React by adding support for dynamic dropdowns, auto-population, data validation, and an overall UI overhaul. Achieved time savings and improved clarity for users during simulation. Additionally, the tool's success led to its consideration for external customer usage.
- Enhanced multiple Java backend services and objects to support additional data & improve request accuracy
- Created and modified React components to meet business needs such as custom dynamic form features

Empire Life Insurance | *Full Stack Developer*   *Jan - Apr 2022*

- Upgraded a Dockerized management application in React, Redux & Django used by support groups for quick, secure, and organized access to user data. Greatly reduced time spent onboarding and approving advisors
- Led the creation of a SPA login page hosted on GCP to facilitate testing and debugging for the IAM team
- Implemented tenant-wide biometric & SMS based Multi-Factor Authentication. Modernized and future-proofed the company's authentication & post-login processes. Both tasks were achieved using Javascript and Auth0

Terrestrial Energy | *Software Developer & IT Technician*   *Jan - Apr & Sep - Dec 2020*

- Developed Windchill workflows using Java and the Windchill API in order to automate numerous product lifecycle management processes, improving data accuracy & security in SQL tables while also reducing the time spent by users on redundant tasks. Collaborated with the QA team to plan and design requirements

PROJECTS

Real-Time Operating System: C based operating system executing on a microcontroller with memory management, inter-task communication, console I/O and real-time scheduling capabilities

Matrix Multiplication Module: Verilog based systolic matrix multiplication program deployed on a FPGA board

Algorithm Visualizer: Java based Processing application to display sorting algorithms in real time

Camera Slider: Used a stepper and two servo motors controlled via an arduino to pan, slide and tilt a camera rig

Obstacle Avoidance: Used ultrasonic sensors and an arduino to safely autonomously navigate a robotic vehicle

Path Visualizer: Applied a modified greedy algorithm on input elevation data in Java to determine an optimal path