Soumav Maiti

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SKILLS

Languages: C++, C, VHDL, Ladder (PLC), ARM Assembly, MATLAB, Python, Typescript, Javascript, HTML, CSS
Frameworks: ESP, React, Firebase, Gatsby, HTTP, OpenCV , Tensorflow , Jest, Cypress, GraphQL, React-Testing-Lib
Tools: Altium , Arduino, SolidWorks, AutoCAD, SSH, Linux, Git, GitHub, Gitlab, Jira, Confluence

PROJECTS

Arduino Uno Rev3 Redesign – *(January 2022 – March 2022) –Altium Designer*

- Recreated the Arduino Uno Rev3 in Altium Designer by following an in-depth 15+ hr video tutorial
- Designed and wired all required components in schematics, placed all components on a board, and routed all power rails.
- Searched through Digi-key to find available parts for every single component on the board
- Reduced (material) cost of board by 14% through manufacturing board instead of buying board outright.

"Smart" Thermostat – *Interdisciplinary Thermostat Controller Project (January 2022 – March 2022) –Arduino, C++, ESP, BLE*

- Developed a "smart" thermostat that can be remote controllable through phone using Bluetooth Low Energy.
- Tested & debugged electrical connections and used circuit components to control voltage & current entering pins
- Established a BLE advertising server on Arduino utilizing ESP & BLE libraries in C++
- Utilized Arduino Servo libraries to control a motor to spin a set amount, based on user-inputted temperature values

Portfolio Website – *Full-stack React Web app (March 2022 - Present) –Javascript, React, Firebase, Styled-Components*

- Designed & Developed a single-page, responsive, full-stack React app using React-Router.
- Implemented a structured, NoSQL database in Firebase to render page information as well as for file storage.
- Utilized react hooks to render pages with promise-based asynchronous structure while page data is queried.
- Established highly organized, reproducible, reusable code structure using styled-components. (check it out on GitHub!)

EXPERIENCE

Hardware Team member– *'Midnight Sun' Solar Car Team (September 2021 – Present) – Altium Designer, Altium 365*

- Researched numerous types of boards, components, tools, and electrical phenomena for the car's centre console
- Experienced in soldering and desoldering with solder & paste, soldering irons, hot plates, heat gun, hot air stations, braid
- Created schematics for the ESD protection and Ideal diode implementation used in the vehicle.

Web Software Developer – *Ontario Digital Service (Jan 2022-April 2022) – React, GatsbyJS, Jest, Cypress, GraphQL*

- Created a full-stack questionnaire web-app using a GatsbyJS/React frontend, and a JSON/GraphQL backend
- Developed complex, efficient., stateful components using React hooks, refs, and callbacks
- Utilized Gatsby & GraphQL API's to create, query, modify, and delete the app's JSON data schema.
- Established functional unit testing using Jest & React-Testing-Lib and implemented E2E testing with Cypress.
- Practiced agile development methods to research, design, develop, and test new components, libraries, and additions.
- Constructed numerous pages using Drupal CMS, JS, HTML, and CSS.

Full stack Software Developer – *Polar (May 2021-September 2021) – JS, HTML, React, HTTP, REST, JSON*

- Constructed a full-stack chrome extension using an HTML frontend, JS DOM manipulation, with an IndexedDB backend.
- Developed an image, text, & video webscraper using JS which worked effectively on over 95% of tested websites
- Implemented REST API's using HTTP & intercepted/modified incoming and outgoing network traffic requests & headers
- Established user authentication using cookies, while indexing user information using IndexedDB
- Practiced agile development procedures to rapidly prototype, test, assess and verify new implementation ideas
- Used SSH to connect to a remote Linux desktop for production with git for version control.

EDUCATION

University of Waterloo - Candidate for BASc, Mechatronics Engineering (09/2020 – 08/2025)

- Relevant courses include: Circuits, Microprocessors, Computer Structures, Sensors & Instrumentation, Systems & Signals
- Cumulative GPA: 4.0