Matayay Karuna

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EDUCATION

University of Colorado Boulder — Boulder, CO

Bachelor of Science in Computer Science | GPA: 3.61 — *Aug. 2022 – May 2026*

Relevant Coursework: Algorithms, Computer Systems, Database Systems, Human Computer Interaction, Intensive Programming Workshop, Introduction to CyberSecurity, Object Oriented Programming, Principles of Programming Languages, Software Development Methods and Tools, Web Development

EXPERIENCE

Student Software Engineer — June 2023 – Present

Colorado Center for Astrodynamics Research: LAIR Lab — *Boulder, CO*

- Fullstack Engineer responsible for developing a website to interface, monitor, and retrieve data from DAQ sites measuring VLF radio waves
- Made use of Next.js and Tailwind.css to create front-end and build responsive UI
- Leveraged AWS services including API Gateway, Lambda, and Dynamodb to create a WebSockets API which allows bidirectional communication between website and 11 DAQ sites in under 1 second
- Set up and maintained a PostgreSQL database consisting of multiple tables that can be joined for the backend
- Developed REST API using Express.js to link up website, database, and a Network Attached Storage server (NAS) to allow for viewing and downloading of NAS files from website
- Updated pre-existing python DAQ code to auto upload generated files to NAS using Express API
- Integrated a synchronous wave demodulation algorithm into the DAQ code to replace existing single channel demodulation method to improve data collection and reduce error rate

PROJECTS

Checkers | C++, Qt — April 2024 - May 2024

- Two player checkers game that alternates between each side's turn after every move
- Supports chain attacks. Game ends when one player wins or when no moves are possible
- Developed game logic in C++, implemented GUI using Qt Creator

Personal Website | SvelteKit, Tailwind, TypeScript — June 2023 – July 2023

- Created a personal website to serve as a portfolio and to illustrate my experience
- Implemented transition animations on page load and scroll

Star Wars Hub | Firebase, React, Tailwind, TypeScript — April 2023

- Developed a Star Wars themed forum site that allows for the creation, editing, and deletion of posts
- Each post can be liked and commented on and contains a title, image, and subtitle
- Wrote CRUD functions that connect to a Firestore Database to manage post storage

Where's Waldo? | CSS, Firebase, React, TypeScript — March 2023

- Created a Where's Waldo photo tagging app
- Built an algorithm to calculate (X, Y) coordinates of Waldo, The Wizard, and Odlaw
- Implemented distance formula to calculate the proximity of a user click to a character
- Fetches from a Realtime Database to get the data on where the characters are

Dungeon Escape | C++ — November 2022 – December 2022

- Built a text based dungeon escape game that runs in the terminal
- Allows the user to create a party of characters to traverse the dungeon with
- Functionality includes a terminal generated map that can be moved through
- User must clear five rooms of enemies and make it to an exit to win

TECHNICAL SKILLS

Languages: C/C++, CSS, HTML, Java, JavaScript, Python, Scala, SQL, TypeScript
Frameworks: Bootstrap, Express.js, Next.js, React, SvelteKit, Tailwind CSS
Databases: DynamoDb, Firebase, MySQL, PostgreSQL, SupaBase
Technologies: AWS Lambda, Docker, Git, HTTP, Linux, Node.js, Qt, VSCode, WebSockets
Other: Agile Methodology, Communication Skills, Team Player