Brian Pak

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Education

Georgia Institute of Technology | Atlanta, GA — Expected: May 2024

B.S – Computer Science, Concentrations: Intelligence & Media

Coursework: Data Structures & Algorithms (Java & C++), Software Design, Information Visualization, Computer Organization & Programming, Object-Oriented Programming, Discrete Math, Combinatorics

Skills

Languages: Java, JavaScript, HTML/CSS, Typescript, SQL, C, Python, C++
Technologies: Git, React, Next.js, DynamoDB, AWS Lambda, Axios, Serverless Stack Toolkit (SST), Tailwind CSS, Spring Boot, REST APIs

Projects

Spotify Jukebox | *SST, Axios, Chakra UI, WebSockets API, DynamoDB* — August 2022 - Present

- Spearheaded the implementation of seven RESTful API endpoints using **Axios** and **AWS Lambda**, providing users with the ability to play songs through **Spotify API**.
- Implemented the **OAuth** Authorization Code Flow with PKCE to securely verify a host user's Spotify account before beginning a music session.
- Maintained real-time data of 'up-votes' and 'down-votes' of jukebox song queues with**WebSockets API**.
- Redesigned the user interface for the local song queues using **Chakra UI**, providing users with an improved experience with adding/removing songs from the jukebox queue.

BuzzConnect | *Spring Boot, React, SQL* — August 2022 - December 2022

- Developed a full-stack **React** application in an Agile devleopment process to assist students in exploring current student events on Georgia Tech's campus.
- Headed the development of a RESTful API with over 15 endpoints using **Spring Boot**, allowing successful transfer of user and event data.
- Modeled relationships between four different functional classes using **Spring Boot JPA**, allowing the development team to easily maintain and store data in a local **MySQL** database.

Unix Utilities | *C* — June 2021 - August 2021

- Built a collection of 8 **Linux/UNIX** command-line commands, including head, tail, env, and wc.
- Employed **C Standard Library** Functions to make system calls to the Linux Kernel, allowing the implementation work directly with the device's operating system.

Stranger Things Showdown | *C* — June 2022 - August 2022

- Programmed a Stranger-Things-themed rock, paper, scissors video game for the Gameboy Advance, hosted on an emulator provided through a Docker container.
- Encoded graphics for 7 protagonists and background scenery by manipulating direct memory access functions provided with **C programming**.

Extracurriculars

GT WebDev Club | Co-Lead & Student Developer — August 2022 - Present

- Migrated the application's user interface to **Next.js**, **NextUI**, & **Vanilla Extract UI** to take advantage of sever-side rendering when rendering updates on a user's local song queue.
- Directed the backend and API development teams in expanding the application's API to support financial transactions with **Stripe API**.
- Organized 6 sprints for the development by assigning Github Issues into sprints to be completed by members, maintaining a steady pace for the development of the project.
- Developed over 12 unit tests using **Vitest** to ensure that API endpoints and Lambda functions are executing as intended.