

# Brian Pak

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## EDUCATION

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**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

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**Languages:** Java, JavaScript, HTML/CSS, Typescript, SQL

**Technologies:** Git, React, Next.js, DynamoDB, AWS Lambda, Axios, Serverless Stack Toolkit (SST), Spring Boot, Tailwind CSS, REST APIs

## PROJECTS

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**Spotify Jukebox** | *SST, Axios, Next.js, WebSockets API, DynamoDB*

August 2022 - Present

- Spearheaded the implementation of seven RESTful API endpoints with **AWS Lambda**, providing users with the ability to play songs through **Spotify API**.
- Maintained real-time data of ‘up-votes’ and ‘down-votes’ of jukebox song queues with **WebSockets API**.
- Implemented **OAuth** Authorization Code Flow with PKCE to securely verify a host user’s Spotify account before beginning a music session.
- Constructed foundational interface 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** development 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 4 functional classes using **Spring Boot JPA**, allowing the development team to easily maintain and store data in a local **MySQL** database.
- Leveraged GT Places through **Axios** HTTP client to relate events to locations throughout Georgia Tech’s campus.

**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

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**GT WebDev Club** | Project Co-Lead - Spotify Jukebox

August 2022 - Present

- Migrated the application’s user interface to **Next.js** to take advantage of server-side rendering techniques when presenting updates on a jukebox’s local song queue.
- Directed the backend and API development teams in expanding the application’s **REST API** to maintain a song queue **Spotify Web API**.
- Increased run-times of API calls by 21% percent by restructuring the application’s **DynamoDB** database & reducing calls to external APIs.