

# Jason C. Gao

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## EDUCATION

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### Georgia Institute of Technology

Bachelor of Science, Computer Science

August 2019–May 2023

Minor in Music Technology

Cumulative GPA: 3.91

Faculty Honors (4.00 GPA)

January 2020–May 2023

### Coursework

Data Structures & Algorithms, Objects & Design, Computer Organization & Programming, Design & Analysis of Algorithms, Database Systems, Computer Graphics, Linear Algebra, Multivariable Calculus, Probability & Statistics, Discrete Math, Combinatorics, UI Software, Human Computer Interaction (HCI), Computer Audio, Educational Technology, Research Methods, Social Psychology, Video Game Design, Music Recording & Mixing, Computer Music Composition

## SKILLS

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**Programming:** TypeScript, JavaScript (React.js, Node.js, express.js), Python, C#, SQL, HTML, CSS, Max MSP

**Technologies:** AWS, Git, Docker, MySQL, Elasticsearch, OrientDB, Linux

**Skills:** APIs (REST, GraphQL), multithreading, networking, Agile Methodology

**Languages:** English (Native), Mandarin (Professional)

## WORK EXPERIENCE

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### RM SPEAKING INC. – Freelance Web Developer

August 2023–September 2023

- [React.js app](#) using AWS Amplify to authenticate users and host a video sonification platform that intakes uploaded videos and returns a video with AI generated music based on the content of the video.
- Sonification service containerized using docker and deployed in AWS ECS on EC2 instances.
- Realtime WebSocket based GraphQL API developed and deployed using AWS AppSync.
- Asynchronous and multiprocessing based Sonification server developed in Python to handle scaling with multiple clients.

### Back End Developer Intern – International Business Machines (IBM)

June 2022–August 2022

- Full stack app displaying a knowledge graph of system error logs for intelligent error tracing.
- OrientDB NoSQL graph database using SQL-similar queries to get log relationship information.
- Elasticsearch NoSQL document database using Lucene queries to get log instance data.
- Node.js backend in express.js to develop RESTful API for frontend-to-database communication.
- React.js frontend using IBM Carbon component library to display how different logs relate to each other.

### AR/VR Research Assistant – Georgia Institute of Technology:

June 2021–May 2022

- Collaborated with HCI and psychology experts on ways for VR/AR to help people focus in highly distracting environments.
- Engineered complex 3D scenario in Unity3D using C# to implement a highly distracting VR environment.
- Developed different methods of diminishing audio and spatial distractions in VR.

## PROJECTS

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### [Spotify Karaoke](#)

July 2023–Present

- Full stack app that lets users connect their Spotify account, search for a song with English lyrics listed in Spotify, and then automatically generate real time karaoke captioning and a vocaless track.
- Frontend in React.js, processing and data in Python, using a dynamic programming approach to synchronize lyrics
- Powered by OpenAI's Whisper ML model for speech-to-text transcriptions and Deezer's Spleeter source-separation model.

### Robotic Musicianship Lab

January 2021–May 2023

- Developed Python, bash, and C++ scripts to aid in a pipeline for transcribing audio files to piano sheet music.
- Designed [GUI](#) for choreographing 12 dancing robot arms using Python and JavaScript using Flask and Vue.js frameworks.
- Created app to help deaf people enjoy music through haptics, visuals, and robotic dance using C# and React.js JavaScript.