Greg Zanchelli

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EDUCATION

University of Hartford, *West Hartford, CT,*

Bachelor of Science in Mechanical Engineering (Acoustics Concentration) with Mathematics Minor

TECHNICAL SKILLS

- **Programming Languages**: TypeScript, JavaScript, Rust, C++, Python, Java, Bash, MATLAB
- **Cloud**: AWS EC2/S3, Digital Ocean
- **Platforms/Tools**: Webpack, Rollup, Node.js, Vercel, Jest, Jasmine, Deno, git
- **Web**: React, Three.js, WebGL, Redux, React-Native, CSS, WebAssembly, WebSockets, WebWokers
- **Core Competency**: Agile, Team leadership, People Management, Critical Thinking, Problem Solving.
- **Other**: Digital signal processing, Audio file formats, Acoustic Simulations, Constraint Based 3D Modeling

RELEVANT WORK EXPERIENCE

Bose, *Software Engineer II,* January 2022–Present

- Created an intuitive user interface for an internal tool which calibrates commercial grade hardware.
- Spearheaded the effort to switch measurement platforms across global research and development.
- Constructed a novel way to save and restore hardware state for commercial grade hardware
- Organized and led the hardware repair team for NI-PXI and MOTU devices.

CertiK, *Software Engineer,* July 2021–January 2022

- Lead the frontend development of SkyHarbor, a web application that allows auditors to efficiently communicate with clients.
- Designed APIs for our backend which serves information from our databases.
- Mentored 3 interns (3 month internship). Responsibilities include onboarding, teaching best practices, and code reviews.
- Conducted 15+ interviews for full time and internship roles. I also designed the interview procedure for other engineers to follow.

Panimate, *Lead Software Engineer,* July 2020–July 2021

- Leading a team of 8 software engineers to create an application that utilizes state-of-the-art NLP and machine learning for novel methods of communication.
- Implemented a semantic search API using universal sentence encoders, paired with a real-time database hosted on AWS EC2 instances.
- Advance company goals by communicating with internal and external stakeholders, maintaining KPIs and KPMs for quarterly goals, and conducting weekly Scrum meetings.

SH Acoustics, *Engineering Intern,* July 2018–July 2020

- Built and deployed an internal application that aggregates data for current projects, billing, and clients into user-friendly reports and dashboards. The dashboards include a consultant billability tracker, a client relation tracker to improve client relationships, and a filtered project list view.
- Automated the distribution of weekly task list reports to consultants and senior management. Deployed the backend server that uses webhooks that sync information between CRMs.

CURRENT PROJECTS

Raya: (github.com/gregzanch/raya)
Implemented multi-threaded acoustic ray tracing algorithms to generate a room impulse response from a custom 3d file format. This application can be paired with CRAM to decrease solution times by an order of magnitude (10x).

CRAM: (cram.vercel.app) (github.com/gregzanch/cram)
Developed a web-based acoustic simulation engine that creates room impulse responses from a 3d mesh. Designed the interface to maximize usability, scalability, and extensibility. Leveraged TypeScript for strict type checking and utilized modern web technologies and frameworks including WebGL, React, and WebWorkers.

Beam-Vibrations: (beam-vibrations-gregzanch.vercel.app) (github.com/gregzanch/beam-vibrations)
Developed an interactive 3D web application that simulates transverse vibrations along a cantilevered beam given a user-defined position/velocity function. Implemented state persistence using local storage.

Alpha-DB: (github.com/gregzanch/alpha-db)
Created a REST API and web application for searching a MongoDB database of acoustic materials. Implemented a fuzzy search algorithm with configurable typo tolerance. Deployed the application in an AWS EC2 container.

nplot: (https://github.com/gregzanch/nplot-api) (https://github.com/gregzanch/nplot-client)
Engineered a language-agnostic data visualization application. Designed the application architecture as an electron app that opens a local server and listens for incoming requests.

Motion: (https://github.com/gregzanch/motion)
Developed a command-line application that allows users to create SVG animations using a JSON schema.