

# Greg Zanchelli

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## EDUCATION

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**University of Hartford**, West Hartford, CT,

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

## TECHNICAL SKILLS

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- **Programming Languages:** TypeScript, JavaScript, Rust, C++, Python, MATLAB
- **Cloud:** AWS EC2, S3, RDS, Lambda
- **Platforms/Tools:** Webpack, Rollup, Node.js, Vercel, Jest, Jasmine, Deno, git
- **Web:** React, Three.js, WebGL, Redux, React-Native, CSS, WebAssembly (Emscripten), WebSockets, WebWorkers
- **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

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Bose | *Software Engineer II*, January 2023–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 2023

- 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

- Lead 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.
- Advanced 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 (from HubSpot and ClickUp) 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

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**Raya:** ([github.com/gregzanch/raya](https://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](https://cram.vercel.app)) ([github.com/gregzanch/cram](https://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](https://beam-vibrations-gregzanch.vercel.app)) ([github.com/gregzanch/beam-vibrations](https://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](https://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.