

# JAEHYUK LEE

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## SKILLS

JavaScript, HTML5, CSS3, React, Redux, Node.js, Express, Ruby on Rails, PostgreSQL, MongoDB, AWS, jQuery, Git

## PROJECTS

**SoriCloud** | React | Redux | Rails | Postgres | jQuery | webpack | Amazon S3

[live](#) | [github](#)

*A single-page web application for streaming music and uploading your own - a SoundCloud clone*

- **Redux to enable continuous and non-overlapping audio playback through navigation:** Engineered a slice of front-end Redux state to maintain reference to the currently playing track to implement a fluid site-wide audio player and UI.
- **Modular components and DRY code:** Leveraged Redux actions with modular SeekBar subcomponents to sync the main audio player with interactive waveform visualizations and play-pause toggle buttons.
- **Scalable backend design with database indexing & avoiding N+1 queries:** Designed RESTful APIs and optimized queries by indexing foreign IDs and eager-loading Active Record associations to extract data from multiple tables in one request.
- **Reduced server load:** Integrated Amazon S3 with Rails and Postgres for cloud storage of media uploads.

**Museic** | React | Redux | Node.js | Express | MongoDB | Amazon S3

[live](#) | [github](#)

*A social web application with a unique UI to record and share short melodies*

- **Lightweight storage of music:** Created an intuitive piano keys interface with React and Tone.js that allows for user input to be saved directly into the database as an array of music notes to eliminate the need for audio file storage.
- **Dynamic visualization of user input:** Built a visualization component that draws user input notes to the DOM in real-time by using simple math with React and CSS, enhancing user engagement and interactivity.
- **Secure user auth:** Encrypted user details via the JSON Webtoken library to be sent over HTTP using Axios to be decrypted via the JWT-Decode library on the front end.
- **Git workflow:** Facilitated collaboration by managing workflow on Git, and demonstrated the ability to work on others' code.

**Animated Image Histogram** | JavaScript | HTML5 Canvas | CSS3

[live](#) | [github](#)

*A program to create an image histogram from a digital image and animate the transition*

- **Canvas API and JavaScript for pixel by pixel manipulation:** Devised an algorithm to extract information and calculate animation details for every pixel in  $O(n)$  time. Plotted pixels and animated them with only JavaScript and canvas API.
- **Responsive web and mobile design with CSS media queries:** Designed a responsive interface that allows users to intuitively adjust various parameters to customize their animation as well as easily capture stills and videos.

## EXPERIENCE

### Freelance Software Engineer

*Self-Employed* | Web Development | Los Angeles, CA

May 2020 - Present

- Developed front-end features using JavaScript, HTML5, CSS3, and jQuery, and integrated them with the client platform while communicating with the client product team to define and clarify expectations.

### Project Manager

*U-Mind Club* | E-Commerce Platform | Los Angeles, CA

Jan 2017 - Aug 2019

- Spearheaded the collaboration between external and internal teams of engineers to integrate their machine learning product recommendation engine into the company's platform, focusing on constant and clear communication.
- Prioritized improvements of the seller central UI by analyzing customer feedback data, resulting in a 10% weekly increase in the number of products listed by individual sellers throughout most of the quarter.

### Data Analyst

*North Carolina Joint Underwriting Association* | Property Insurance | Raleigh, NC

Jul 2014 - Jun 2016

- Assembled technical procedures for a year-long data scrubbing project to transition from an MS-DOS database management system to new software to improve efficiency and customer support quality.

## EDUCATION

**Bachelor of Science - Duke University** | Durham, NC

Aug 2008 - May 2012

- Bachelor of Science in Psychology, Minor in Statistical Science, Certificate in Markets and Management
- Graduation with Distinction
- Curriculum Highlights: Linear algebra, multivariable calculus, statistics, probability, physics