Nicholas Welch

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SKILLS: Ruby on Rails, PostgreSQL, MongoDB, Express, Firebase, JavaScript, React, React Native, React VR, Redux, jQuery, HTML5, CSS3, SCSS, REST APIs, RSpec, Jest, Webpack, Git, JBuilder, Heroku, AWS, npm, InVision, Photoshop

PROJECTS

Bop (Rails, PostgreSQL, React, Redux, React Player, Sass, Webpack, AWS, Heroku) | *Sole Developer*   live | github
A single-page Spotify clone where users can stream music, create playlists, and follow their friends and favorite artists.

- Integrated React Player with Redux's global store by dispatching actions only when sharing information across components and encapsulating music player data to give the user a seamless, uninterrupted experience.
- Reduced needed PostgreSQL database tables by 25% and heavily DRYed up backend code by utilizing a one-to-many polymorphic table on the database level, as well as Rails concerns on the model and controller level.
- Designed a weighted search algorithm that initially displays the category with the most results and orders items based upon the relevance of the search query.

Project Phantom (React VR, npm) | *Collaborator in a team of 4*   live | github
A developer's toolkit for streamlining the creation of applications in virtual reality using React VR.

- Published a component library and navigation system for React VR as an npm that bypasses common pitfalls of content rendering and 360° visualization in virtual reality.
- Created an npx package runner that generates and initiates a pre-configured React VR project and demo app with a one-line terminal command to unburden the user of needed boilerplate code.
- Packaged a script that scrapes HTML content and dynamically renders it in a VR preview with the component library.

The Power of Friendship (JavaScript, HTML, CSS) | *Sole Developer*   live | github
A minimalist side-scrolling puzzle platformer that requires cooperation and intuitive thinking in order to solve puzzles.

- Constructed a unidirectional data flow architecture with a single application-level state object to prevent mutated state and data collision, and to ensure reliable DOM rendering.
- Built a custom physics engine that supports collision of many objects at once and manages movement patterns, gravity, and condition for each player while flying, swimming, or in gravity chambers.
- Implemented a tile-map parsing system that reads in a level, dynamically assigns individual tiles to 'actor' and 'background' layers, and ensures that only 'actor' tiles are repainted to the DOM, thus heavily reducing game lag.

Quidproquo (work in progress) (MongoDB, Express, React Native, Node.js, Firebase)   prototype | github
A 'TaskRabbit-meets-Tinder' social meet-up app centered around exchanging skills and favors.

EXPERIENCE

Language Instructor | *Self-Employed*   Oct 2015 - Feb 2018
- Designed and conducted 1000+ private ASL, English, and French lessons with a 99% approval rate from students.
- Adapted lesson structure according to students' varied cultural and linguistic backgrounds.

Technology Advisor, Webmaster | *University of Pennsylvania*   Aug 2012 - Aug 2015
- Refactored and updated CSS and HTML code segments for the Penn Computing website.
- Assisted staff and students in troubleshooting hardware and software, including network configuration, DHCP lease renewal, computer assembly, and antivirus security measures.
- Co-managed the successful relocation of library website and reorganization of electronic catalog storage system.

Web Designer | *Freelance*   Sept 2009 - Aug 2012
- Created and customized website, MySpace, and Tumblr layouts for 300+ clients and advised on website design.
- Hosted open-source layouts and HTML, CSS, and JavaScript tutorials on a site with a traffic of 10,000+ users.
- Worked with MySpace designers to update legacy code after the release of Myspace 2.0.

EDUCATION

Web Development - *App Academy*, 2018

Linguistics, B.A. - *University of Pennsylvania*, 2016 (summa cum laude)