

JULIET SHAFTO, PH.D.

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SKILLS JavaScript, Python, Flask, React.js, Redux, Express, Node.js, SQL, Git, HTML5, CSS3, Docker, Matlab, R

EDUCATION

App Academy - Immersive software development course with focus on full stack web development (Nov 2020)

Carnegie Mellon University - *Ph.D. - Cognitive Neuroscience* (May 2019)

Reed College - *BA - Psychology* (May 2013)

RELEVANT EXPERIENCE

Online Instructional Assistant

App Academy, November 2020 - Present

- Taught full stack development with React/Redux, Python/Flask, deployment on Docker.
- Guided 50+ students through group and solo projects, encompassing the planning, documentation, and end-to-end development of a novel full-stack web application.
- Developed learning materials, demos, lectures on a variety of topics: using ORMs, database schema design, boto3 library for AWS, SocketIO, Docker, with hundreds of viewers.

PROJECTS

Poemlapse | (*React/Redux, Flask, SQLAlchemy*)

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

Interactive notebook to experience poetry chronologically, from the first keystroke to the final draft

- Dynamically reconstructed each timepoint in a poem's history by reducing over a stored array of changes, allowing users to "replay" a poem's creation one change at a time, in a custom React component.
- Developed an algorithm to track every change in an evolving text with minimal storage requirements by saving only the new information upon each change and preserving the change history rather than the text itself.
- Built a minimalist text editor that automatically saves live changes to the back-end postgres database without interrupting user experience, as well as switches seamlessly between edit and replay mode so users can view the poem's history as they create it.

SimpleDecks | (*React/Redux, Node.js, Express, Sequelize*)

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

Web-based study app—create, share, and practice flashcards with Markdown support and a mobile-friendly UI

- Allowed users to create rich-text flashcards with formatting, links, lists, and blocks of code authored in Markdown and rendered using the markdown-to-jsx library.
- Created an intuitive flashcard practice interface by adapting Material-UI components to create a custom expandable carousel.
- Implemented a search bar feature that allowed users to find flashcard decks by name as well as to filter by category.

PyPractice | (*React/Redux, Flask, SQLAlchemy, Pyodide*)

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

Browser-based exercises for mastering Python, with integrated REPL

- Built an interface for users to write and save Python code, run tests, and see console output directly in the browser, integrating the React-Ace code editor with the Pyodide library for Python code execution.
- Structured Redux store logic for visually immediate indication of problem completion when user solution passes all tests.
- Used an agile workflow with a small team to implement the concept, documentation, and final product within a weeklong sprint using git for collaborative feature branches and code review.

Boba With Buddies | (*JavaScript, Node.js, Sequelize, Express*)

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

Social media application for organizing meetups—with bubble tea and good conversation

- Implemented RESTful API routes on an Express server along with AJAX calls to present the user with dynamically rendered content.
- Built a single-page user homepage and event page with content that updates without refresh using only vanilla JS.
- Styled from scratch to match an existing website, using CSS with media queries for an engaging user experience that is effective across screen sizes.

OTHER EXPERIENCE

Graduate Student Researcher

Carnegie Mellon University, August 2013 - May 2019

- Designed and carried out a series of theoretically-motivated novel experiments in the domain of human neuroscience to advance understanding of the neural underpinnings of complex object perception.
- Implemented experimental paradigms to collect chronological and spatial human brain data using Matlab, EEGLab/ERPLab, and Brainvoyager.
- Analyzed complex neuroscience datasets using R and Matlab, and represented data visually using ggplot2.
- Improved classification of image stimuli into human-determined shape-categories from 76% to 94% by updating an existing algorithm to better quantify the presence of specific shape-features.
- Provided mentorship and training to research assistants and junior graduate students.
- Gave lectures, designed course materials, supervised undergraduate teaching assistants, managed student behavior, and provided mentorship to students for various courses within psychology and neuroscience.

Research Assistant & Lab Manager

Reed College, September 2012 - August 2013

- Collected data, organized existing data archives, standardized procedures, and managed research projects.