SOPHIA TSAU

SOFTWARE ENGINEER

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TECHNICAL SKILLS

Languages & Databases: JavaScript (ES6), Python, HTML5, CSS3, SQL, SQLite3, PostgreSQL
Key Skills: Pair Programming, Test-Driven Development (TDD), Object Oriented Programming (OOP), Data Structures and Algorithms, Scrum Methodologies
Frameworks & Tools: React, Redux, Node.js, Express.js, Flask, Git, Amazon Web Services (AWS), Docker
Cross-Disciplinary Skills: Collaboration, documentation, attention to detail, precision, problem-solving, effective communication

PROJECTS

CRITTR | AWS | Python | Flask | JavaScript | React | PostgreSQL **Live | GitHub**
Browse, buy, and sell animals from shops around you on a GrubHub-inspired web application.

- Incorporated consistent upload and deletion of users' image files by hosting images in an AWS S3 bucket, enabling persistent and secure storage of image files
- Presented store and animal information on a responsive and elegant single-page application utilizing React components and routers and a normalized Redux store, providing a smooth user experience with efficient data lookup without page refreshes
- Deployed secure and user-friendly authentication and registration process by integrating the Google OAuth 2.0 protocol with specified scopes, enabling users to authorize controlled access to their data through a button click without exposing credentials

SPOTIFROG | AWS | Python | Flask | SQLAlchemy | JavaScript | React | PostgreSQL **Live | GitHub**
Listen to music, upload albums, and build personal playlists on a frog-themed Spotify lookalike.

- Utilized RESTful API principles to facilitate seamless communication between Python backend and JavaScript frontend
- Created an intuitive user UI with dropdown menus and like/unlike toggle buttons by selecting and styling React components with CSS, using CSS variables to create a smooth, consistent, and dynamic user experience
- Collaborated effectively with a team of two other engineers, engaging in pair programming, task delegation, daily standups, and employing Git workflow to resolve code conflicts efficiently

INFESTATION | JavaScript | Express | Sequelize | React | PostgreSQL **Live | GitHub**
A Meetup clone for cockroaches to establish social groups and create events.

- Implemented create, read, update, and delete (CRUD) functionalities on the backend to manage relational data in a database
- Developed custom body validation middlewares using vanilla JavaScript and express-validator package to verify data and relay validation errors to the frontend
- Employed JSON Web Tokens (JWT) for user authorization and authentication to ensure legitimacy of requests and request bodies received

WORK EXPERIENCE

MOLECULAR BIOLOGY LABORATORY TECHNICIAN | University of California, Riverside **Jul 2020 – Jun 2022**

- Collaborated with a multidisciplinary team of doctors, professors, and laboratory professionals to develop a high-volume COVID-19 testing protocol using RT-PCR, producing manuscript, "Laboratory-Developed Test for SARS-CoV-2 Using Saliva Samples at the University of California, Riverside" available on medRxiv.org
- Authored comprehensive documentation for inventory, preventative maintenance, quality control, standard operating procedures, and sample records using Microsoft Word, Microsoft Excel, Google Sheets, and Google Docs
- Configured and programmed an Opentrons OT2 liquid handling robot using Python for performing customized protocols, raising sample process volume from 400-600 samples a day to upwards of 1400 samples a day

UNDERGRADUATE RESEARCHER | EvoLab – University of California, Berkeley **Jun 2017 – Oct 2018**

- Co-authored manuscript, "*Are you what you eat? A highly transient and prey-influenced gut microbiome in the grey house spider Badumna longinqua*", published by Molecular Ecology
- Demonstrated that spiders possess unstable, prey-influenced microbiomes rather than stable gut microbiomes by comparing bacterial OTUs in the spider gut microbiome and prey microbiome using the 16s bacterial marker
- Presented "Gut microbial community in spiders is transient and prey derived" at Endless Forms (UC Berkeley, June 29, 2018)

EDUCATION

Full-Stack Software Development Course — App Academy – 2023
Bachelor of Science | Chemical Biology — University of California, Berkeley – 2018