SOPHIA TSAU

FULL-STACK SOFTWARE ENGINEER

(949) 331-2653 | sophia.tsau@gmail.com | Riverside, CA | LinkedIn | GitHub | Portfolio

TECHNICAL SKILLS

Languages: JavaScript (ES6), Python, HTML5, CSS3, SQL

Frameworks/Tools: React, Redux, Node.js, Express.js, Flask, SQLite3, PostgresSQL, Git, Amazon Web Services (AWS), Docker

Key Skills: Pair Programming, Test-Driven Development (TDD), Object Oriented Programming (OOP), Data Structures and Algorithms

PROJECTS

CRITTR **Live | GitHub**

Buy and sell animals on a GrubHub-inspired web application.

- Incorporated an AWS S3 bucket to ensure the persistent and secure storage of image files, enabling safe upload and deletion processes.
- Improved the performance of the Redux store performance by normalizing store structure, enhancing the efficiency of data management and retrieval

SPOTIFROG **Live | GitHub**

Listen to music on a frog-themed Spotify lookalike.

- Devised a Python backend using Flask, SQLAlchemy, and PostgresSQL RESTful API principles to facilitate seamless communication with the frontend
- Fabricated an intuitive user UI with dropdown menus and like/unlike toggle buttons by selecting and styling React components with CSS, creating a smooth and dynamic user experience
- Collaborated with a team of two other engineers, engaging in pair programming, task delegation, daily standups, and employing Git workflow to efficiently resolve code conflicts

INFESTATION **Live | GitHub**

A Meetup clone for cockroaches to plan and attend gatherings.

- Built a JavaScript backend using Express and PostgresSQL libraries with create, read, update, and delete (CRUD) functionality to manage relational data in SQL database
- Developed custom body validation middlewares using vanilla JavaScript and express-validators middleware to ensure data validity and clearly communicate validation errors to the frontend
- Implemented JSON Web Tokens (JWT) for user authorization and authentication to ensure legitimacy of requests and request bodies received

WORK EXPERIENCE

MOLECULAR BIOLOGY LABORATORY TECHNICIAN **Jul 2020 – Jun 2022**

University of California, Riverside

- Collaborated with a team of doctors, professors, and laboratory professionals to develop a high volume COVID-19 testing protocol to process upwards of 1400 samples a day 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 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 to upwards of 1400 samples a day

GENETICS LABORATORY TECHNICIAN **Dec 2018 – Mar 2020**

Pathnostics, Irvine

- Performed high volume urine specimen processing and testing of up to 100 patient samples a day in a dynamic, fast paced environment in order to identify pathogens and antibacterial sensitivity
- Compiled test results and informed laboratory professionals and doctors of diagnostic results by utilizing a laboratory information system in compliance with HIPAA requirements

UNDERGRADUATE RESEARCHER **Jun 2017 – Oct 2018**

EvoLab – University of California, Berkeley
- 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
- Assessed correlation and similarities between bacterial OTUs in the spider gut microbiome and prey microbiome using the 16s bacterial marker
- Demonstrated that spiders possess unstable, prey-influenced microbiomes rather than stable gut microbiomes
- Presented findings at Endless Forms (UC Berkeley, June 29, 2018); "Gut microbial community in spiders is transient and prey derived"

UNDERGRADUATE RESEARCH ASSISTANT **Sep 2016 – Sep 2018**

EvoLab – University of California, Berkeley

Project: Evolution and Diet of Hawaiian Tetragnatha Spiders
- Assisted in designing and optimizing PCR primers for detection of prey in spider guts, using MEGA, BLAST databases
- Performed test PCRs in order to correlate prey eaten by spiders with spider species and prey capture method

Project: Dimensions in Biodiveristy
- Prepared samples for assembly of Hawaiian arthropod DNA barcode reference library through PCR to obtain overarching picture of biodiversity in Hawaiian arthropod communities
- Imaged hundreds of diverse Hawaiian arthropods under dissecting microscope and maintained detailed, organized, and accurate laboratory records regarding arthropod size and appearance

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EDUCATION

Full-Stack Software Development Course — App Academy – 2023

Bachelor of Science | Chemical Biology — University of California, Berkeley – 2018