John Zhu

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Skills

Python | Java | Javascript | Typescript | HTML | CSS | Angular | SQL | MS SQL Server | MySQL | Git | Node | NPM | Express | MongoDB | BASH | Visual Studio Code | Jupyter Notebook | OOP | 5 years experience
AWS Certified Cloud Practitioner
Languages (fluent) English | Chinese

Education

University of North Carolina at Chapel Hill | Chapel Hill, NC | Graduated with Distinction 2022
Bachelors of Science | Major: Biology | Minor: Computer Science and Chemistry GPA: 3.51

Projects

Fridge | Laboratory Organization Application | Full Stack

- Javascript | HTML | CSS | Node.js | Express.js | MS SQL Server
- Fridge web application built to store and organize laboratory fridge data for over 3000 reagents.
- Account creation and user credential editing functionality created using JS and MS SQL server.
- User authentication functionality built using bcrypt library to salt and hash passwords.
- Search functionality based on reagent name and sequence built with SQL and javascript.
- Create/ Update/ Delete fridge, box, and reagent objects stored using SQL and javascript.

Portfolio | Personal Portfolio Website | Full Stack

- Angular | HTML | CSS | Typescript/Javascript | Node.js | Express | MongoDB
- Personal portfolio website designed to present my portfolio and provide contact information.
- Dynamic updating UI based on user inputs such as scrolling, clicking, dragging, etc.
- Contact email directly from the website interface.

Calculator | Web Application | Full Stack

- Angular | HTML | CSS | Typescript
- Single page application that provides the basic functionality of a calculator.
- Dynamic updating of UI based on user button presses and automatic updating of display.

Work History

Research Assistant | UNC | Chapel Hill, NC Oct. 2021 - Current

- Member of the Shiau Lab at UNC Chapel Hill, studying the immune system in health and development using zebrafish as a model organism.
- Developed a Fridge application, able to organize all accumulated lab reagents (over 3000) in the over 6 years that the lab has been at UNC.
- Led/presented weekly discussion/analysis on lab experiments and related scientific literature.
- Led collaborative experiments in groups of 2-4 researchers related to gene editing and fluorescent imaging. Also performed individual experiments generating CRISPR lines.

Bioalgorithms | UNC | Chapel Hill, NC Spring 2022

- Coursework for COMP 555 Bioalgorithms, all code was written in python.
- Implemented Burrows Wheeler transformation for use in sequence alignment and genomic database compression functions.
- Resolved peptide sequencing problems from practical and theoretical mass spec data.
- Used hidden Markov models to determine potential gene locations based on CG island presence.
- Executed a graphical approach to achieve multiple and pairwise sequence alignment and implemented divide and conquer strategies to align large genomic datasets in realistic time/memory.