# 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

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

## Projects

Project 2022
**Fridge |** Laboratory Organization Application | Full stack

- Javascript | HTML | CSS | Node.js | Express | MS SQL Server
- Fridge - web application built for organization of laboratory fridges, boxes and reagents.
- Search function for reagent, fridge and box items with a paginated display.
- Account creation and editing functionality created using javascript and MS SQL Server.
- User Authentication using bcrypt library for salting and hashing.
- SQL database management.
- Create/Update/Delete Fridge, Box and Reagent stored using MS SQL Server.

Spring Semester 2020 coursework
**Cookie Clicker |** Web Game | Backend

- Cookie clicker game created in a group of 5 over a period of 4 weeks.
- Built a user authentication system using javascript, HTML, and CSS.

## Work History

Spring 2022 Semester
**Bioalgorithms** | UNC | Chapel Hill | NC
Coursework from COMP 555 Bioalgorithms | Python

- Used Hamiltonian and Euler paths in De Bruijn graph to construct genomes by creating minimal superstrings.
- Used Burrow Wheeler transformation for use in sequence alignment and genomic database compression.
- Used a graphical approach in multiple and pairwise alignment and implemented divide and conquer strategies to allow for alignment of large sequences in realistic time and memory.
- Generated Peptide sequences from practical and theoretical mass spectrometry data.
- Used hidden markov models to determine potential gene locations in a genome, based on CG islands.

Oct. 2021 – Current
**Research Assistant** | UNC | Chapel Hill, NC
Member of the Shiau lab at UNC | studying macrophages and microglia in health and development.

- Developed a Fridge application, organizing over 10,000 reagents accumulated since lab conception.
- Led/presented weekly discussion/analysis on lab experiments and related scientific literature.
- Led collaborative experiments in groups of 2-4 researchers in gene editing and imaging.