John Zhu

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Work History

Database Engineering Internship | Arch MI | Greensboro, NC   Summer 2023
- Design self-documenting databases to eliminate need for manual documentation.
- Develop stored procedure and powershell script to maintain database inventory information.
- Integration of ServiceNow CMDB to manage support information.
- Design systems to report, search, and display database documentation.

Research Assistant | UNC | Chapel Hill, NC   2021 - 2023
- Used genetic models to study the immune system in the zebrafish model.

Education and Certifications

North Carolina State University	Begin Fall 2023
Master of Science in Computer Science	GPA:N/A
University of North Carolina at Chapel Hill	*cum laude*	2022
*Bachelors of Science	Major: Biology	Minor: Computer Science and Chemistry*	GPA: 3.51
AWS Certified Developer - Associate (DVA-C01)	Feb. 2023
AWS Certified Cloud Practitioner (CLF-C01)	Nov. 2022
Global Clinical Research - The Process Start to Finish	University of Chicago	Apr. 2023

Projects

Fridge | Laboratory Inventory Application | Full Stack
- 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 for encryption.
- Search functionality based on reagent name and sequence built with SQL and javascript.
- CRUD operations for fridge, box, and reagent objects stored using SQL and javascript.
- Researcher centric and friendly UI built using HTML, CSS and JS.

Bioalgorithms | Bioinformatics using Python | UNC Chapel Hill
- Used Python to implement Burrows Wheeler transformations on DNA sequences for use in sequence alignment and genomic database compression functions.
- Resolved practical and theoretical peptide sequencing from mass spec data using Python.
- 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.

Portfolio | Personal Portfolio Website | johnszhu.com
- Personal portfolio website hosted on AWS S3 and routed using the Route 53 DNS.
- Built using Angular, including dynamic UI and component based structure.

Cookie Clicker Group Project | Web Application | Full Stack | Group Project
- Lead the construction of the application backend, including user authentication, data persistence, and game logic. Project completed in a 4 person group in 4 weeks time.

Skills

Python | Tensorflow | NumPy | Pandas | Matplotlib | Java | Javascript | Typescript | HTML | CSS | Angular | SQL | MS SQL Server | MySQL | Git | Github | Node | NPM | Express | MongoDB | BASH | AWS | Powershell | Object Oriented Programming | 5 years programming experience
Languages (fluent): English | Chinese