Jason Ho

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EDUCATION

University of Houston   Houston, TX
B.S. Computer Science   May 2023
> Relevant Coursework: Algorithms and Data Structures, Introduction to Programming in C++, Computer Graphics, Linear Algebra, Calculus I, Calculus II, etc.

WORK EXPERIENCE

UNIVERSITY OF HOUSTON   Houston, TX
Teacher's Assistant   Aug 2021 – Dec 2021
- Assisted professor in evaluating and grading various student assignments, provided fair and concise feedback to help students..
- Assisted and guided first-year students in understanding new programming concepts
- Engaged in brief tutoring sessions with students, reinforcing key concepts and improving their ability to apply learned material.

UNIVERSITY PROJECTS

ROOMS - *Typescript, React, Next.js*
- Rooms is a chat service that uses WebRTC and WebSockets to establish a peer-to-peer connection
- Leveraged Typescript to eliminate potential type bugs that could hinder development speed
- ReactJS was used as the UI library for organization of client-side logic and maintenance of stateful logic

SCREENPEW - *C, X11/Linux*
- Screenshot software developed specifically for X11 users
- Uses libraries such as libpng, and XCB (X11 C Bindings), it is capable of capturing screen images efficiently

TETRIS - *C++, SDL2*
- Native C++ desktop Tetris game that uses OpenGL/GLSL to render tetris shapes on the screen
- It used the cross-platform development libraries SDL2 and GLEW

ANDREW - *Zig/Discord API*
- Zig Discord bot developed from scratch that acts as an HTTP web server
- This bot creates a secure and efficient system for handling requests from Discord servers
- It is built against OpenSSL for TLS support to communicate with Discord's API

RCC - *Rust C Compiler*
- Attempting to write a C17 compiler in Rust by reading the C17 spec
- The preprocessor is functional and performs decently well relative to the GNU C preprocessor
- Things that could be improved are error messages and diagnostics.

Math expression REPL - Rust
- Wrote a Token parser and lexer to take in mathematical symbols such as numbers and operators.
- Built an AST out of the tokens
- Evaluated the AST in order to produce a valid numerical answer

Time-based One Time Password - Zig
- Implemented the OTP algorithm which powers 2-Factor Authentication similar to Google Auth/similar apps

Master Turtle - Python/Dijkstras
- Implemented the Dijkstra's Algorithm using Python's builtin GUI library
- Allows an abstract entity to find the shortest path from its current location to the desired location

Real Time Messaging Protocol - C/MP4/HLS/Streaming
- Implemented the RTMP protocol invented by Adobe for delivering real time streams to users.
- Written in C using unix sockets, TCP. Also generates MP4 segments that can be delivered over HLS.

ADDITIONAL

Programming Languages: C, C++, Rust, Zig, Python, Javascript, Typescript, Node.js, GLSL
Technical Skills: Git, Linux, Windows, Docker, HTML, CSS, MySQL, Postgres, DynamoDB, AWS, CMake, OpenGL, Makefile, Web APIs
Open Source Contributions: Zig, OCaml