

# Jason Ho

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## EDUCATION

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University of Houston

B.S. Computer Science

Houston, TX

May 2023

WORK EXPERIENCE (Would love to get more 😊)

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## UNIVERSITY OF HOUSTON

Teacher's Assistant

Houston, TX

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.

## PROJECTS

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### 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

### Fuzzy Finder - C, Unix

- Wrote a fuzzy finder (like [fzf](#)) in C using unix posix syscalls and the boyer moore string search algorithm
- Manipulated the standard file descriptors (STDIN, STDOUT, STDERR) and ANSI escape codes to get user input and display a Terminal User Interface to the user

### Conway's Game of Life - Typescript, HTML5 Canvas

- Implemented Conway's Game of Life using Typescript and HTML5 canvas
- Conway's Game of Life is a zero player game that plays itself by applying certain rules. It is cellular automata

### sha3 - Zig

- Looked at the sha3 spec implementation and converted that implementation to Zig

#### [Traffic Collision Avoidance System - Typescript, WebRTC, WebSockets](#)

- Peer to peer application that displays to each peer if they are in close proximity to each other; This is just a simulation with one method to reduce traffic collisions

#### [Weather - Svelte, Weather API](#)

- Messed around with the Svelte frontend framework and used the National Weather Service's API to get weather information based on Geolocation Web API

#### [WutQuestionMark - PHP, HTML/CSS, JS](#)

- Used PHP to build a Quora clone using Postgres as the database

#### **ADDITIONAL**

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**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