Brandon Song

512-987-6084 | songbrandon7@gmail.com | www.linkedin.com/in/brandon-song-carl

EDUCATION

The University of Texas at Austin, Austin, TX *Bachelor of Science in Computer Science*
Expected Graduation: *May 2024*
Cumulative GPA: *3.74*
Relevant Coursework: IOS Mobile Computing, Object Oriented Programming, Operating Systems, Machine Learning, Data Structures

PROJECTS

Pizza Hut Clone App | *Xcode, Swift, Firebase* June 2023 - July 2023

- Utilized Firebase to enable Login/Sign-up for data persistency among users
- Built segues between unique view controllers for customers to differentiate pizza topping selection and adding new pizza orders
- Using the Core Data framework, added saving functionality to recall pizza order drafts

Technical Blog | *Django, Python, GraphQL, Vue.js, CSS* May 2023 - present

- Designed a full-stack CRUD blog web application in Python to document progress for developing additional features in the blog
- Implemented drafts, edits, and publishing through Django Administration
- Utilized GraphQL API to load in created and saved blog posts
- Styled using Vue.js components to display data from GraphQL with additional touchups in CSS

Memory Manager | *C* August 2022

- Designed a dynamic memory allocator in C using first-fit allocation, immediate coalescing, and splitting optimization techniques to average 85% memory utilization on stress tests
- Averaged over 2000 operations per millisecond on multiple stress tests

Compiler | *C, YACC/GNU Bison, Lex* January 2023 - May 2023

- Implemented a lexical analyzer in Lex to convert characters into tokens categorized by identifiers, keywords, numbers, and operators
- Wrote a context-free parser in YACC to analyze statements and output intermediate code trees
- Built a code generator using intermediate code as input to produce x86-64 assembly code
- Optimized the compiler using constant folding and reduction in strength to generate around 40% less assembly code

Huffman Encoder | *Java* April 2022

- Created a Java program based on the Huffman algorithm that parses through files, creating encoding schemes, and compressing files
- Built a decompressor program using Huffman trees as input
- Averaged a file size reduction of 20% from original files

EXPERIENCE

Private Tutor | Austin, TX *July 2020 - December 2021*

- Communicated thoroughly with students to ensure understanding on geometric and algebraic concepts
- Led students into solving a problem with needed support
- Organized lesson plans that were based on areas students struggled the most in

ADDITIONAL SKILLS AND INFORMATION

Programming Languages: Python, Swift, Java, C/C++, GraphQL, Assembly (AArch64, x86), HTML, CSS, JavaScript, React
Technical Skills: Linux, Git, Docker, Jupyter, Django, Firebase, Vue.js, QEMU, YACC/GNU Bison, Lex
Hobbies and Interests: Reading, Brewing coffee, Bouldering, Cinema, Photography, Advent of Code