Garrett Gu

(469) 314 4782 | gu@utexas.edu
garrettgu.com

EDUCATION

The University of Texas at Austin *2021*

B.S. in Computer Science (Honors)

GPA: **4.0**

– Member of **Turing Scholars** Computer Science Honors Program
– Coursework: Operating Systems, Architecture, Data Structures, Competitive Programming, Probability, Discrete Math
– Transferred Coursework: Systems Programming, Linear Algebra

SKILLS

Languages

– Fluent in JavaScript, C, Go, PostgreSQL, and Java
– Familiar with bash, Python, C++, PHP, and Octave

Frameworks

– React, React Native, Express, Meteor, React 360, Qt, Java Swing

Competitive Programming

– Won multiple UT-wide and regional programming and Capture-the-Flag competitions
– USA Computing Olympiad (**USACO**) Platinum Qualifier
– HackerRank Gold Problem Solving badge

EXPERIENCE

The BHW Group 2019 - Present

Web and Mobile Intern **JavaScript + Go**

– In a team of four, developed a cross-platform **React Native** app for a client in the medical industry
– In the same team, developed a large-scale school alerts system using **React Native**, **Go**, and **PostgreSQL**
– Both apps planned for release later this year

UT Information and Systems Security Society 2018 - Present

Engineering Officer

– Created Capture-the-Flag cybersecurity challenges for biweekly competitions for over **100** contestants on average
– Prepared and presented talks over security techniques and best practices, including CSRF, XSS, injection, and digital forensics
– Co-organized and authored several innovative challenges for **UTCTF**, an online cybersecurity competition with >**5,000** unique competitors from >**20** countries and a **24.83/25.0** public rating on ctftime.org

PROJECTS

OOPBoy 2019

Game Boy Color™ Emulator **Java** + **Z80 assembly**

– In a team of two, built a cycle-accurate Nintendo **Game Boy™** emulator
– Developed, tested, and debugged stereo sound chip, cartridge, timing module, MMU, CPU sections from scratch
– Created a Game Boy™ debugger with breakpoints, core dumps, instruction history, and memory access
– Emulator plays **Zelda**, **Mario**, **Wario**, *Tetris*, **Pokemon**, *Pac-Man* and *Kirby* with color, sound, save state, and rewind support
– Emulator surpasses Nintendo 3DS Virtual Console in accuracy benchmarks
– Full source code available on GitHub

TetrisBrain 2018

Tetris implementation and AI **Java**

– Built a custom **genetic algorithm** to generate a greedy algorithm which played Tetris with the goal of long term survival
– Able to clear hundreds of thousands of lines in one game

Forward Tutoring 2017 - 2018

501(c)3 non-profit for online tutoring **JavaScript**

– Built from scratch an online tutoring system using **Meteor** and **React**, leading to a >**140% increase** in user registrations
– Coordinated the algorithmic selection and scheduling of tutors, allowing a >**50% increase** in availability and a >**290% increase** in tutor engagement