

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

- USA Computing Olympiad (USACO) Platinum Qualifier
- Won >6 UT-wide and regional programming and Capture-the-Flag competitions
- HackerRank Gold Problem Solving badge

EXPERIENCE

The BHW Group

2019

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**

UT Information and Systems Security Society

2018 - Present

Engineering Officer

- Created Capture-the-Flag cybersecurity challenges for biweekly competitions for >**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, and CPU sections from scratch
- Created a Game Boy™ debugger with breakpoints, core dumps, instruction history, and memory access
- Emulator plays dozens of games, including *Zelda, Mario, Tetris, Pokemon, Pac-Man* and *Kirby* with color, save state, and rewind support
- Emulator surpasses Nintendo 3DS Virtual Console in accuracy benchmarks
- Full source code available on GitHub: github.com/429ers/OOPBoy

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