

## 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

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 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, 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](https://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