

E-Mail: jackroper18@gmail.com Site: jackroper.info • Phone: 720.635.4618
UT Austin "Turing" Honors Computer Science + Math (Class of 2022, 3.80 GPA)

COURSEWORK

Honors Data Structures

Probability and Statistics

Honors Systems and Architecture

Honors Linear Algebra

Honors Operating Systems

Honors Algorithms and Complexity

PERSONAL PROJECTS AND EXPERIENCE

UT Graph Convolutional Neural Network Group (Python)

2019-2020

- Working on graph convolutional networks to develop novel algorithms for knowledge graphs in drug discovery. Neural networks made for addressing semantics of heterogeneous graphs and their vector representations/embeddings.
- Learned to conduct research with professors and PhD students, to make new and novel algorithms, and to learn state-of-the-art techniques and ideas from academic papers.

UT Austin AI Lab Website Manager (PHP/JS/MySQL)

2019-2020

- Fixed and refactored 20-year-old legacy code on Apache 2.4 Webserver. Website had been non-functioning for multiple months after being hacked. Brought website back online and fixed most security holes within 2 days of being given job. Run ongoing maintenance and updates
- Learned to work with massive/old codebases, and how to fix buggy and insecure PHP code that's older than me.

AsBestOS: Custom Operating System (C/C++/x86)

2019

- Made complete operating system as individual project which boots into QEMU on a custom boot loader. Then lead a team of 6 people to develop VGA/SVGA/VESA drivers, graphics libraries, and other user programs for said OS.
- Learned how an operating system works from bottom to top, how graphical drivers and window managers work, and also how to manage a team of software developers to work together.

Web Crawler and Search Engine (Java)

2018

- Crawled websites and indexed important data about sites in order to implement a custom search and similarity search engine using cosine similarity and some approximate similarity methods.
- Learned to manage very large amounts of data, and to optimize large programs.

AWARDS AND CERTIFICATIONS

BPuzzled Bloomberg Puzzle Competition

2019

- Won Texas regional puzzle solving competition for computer science students on 4 person team. Team won 7th in global competition in New York.

AWS Certified Developer Associate:

February 2019

- Certified as proficient developer of AWS services and technologies
- Validate at aws.amazon.com/verification with validation code GHEJCW22L2Q4QGK3

Best Student Created Project: Rose-Hulman Institute of Technology's "Operation Catapult"

2017

- "Best Project" award out of 40+ projects with 4-man teams after a 3-week engineering competition. Programmed microcontrollers for project.

SKILLS

Proficient In: Java, Kotlin, C++, JS, C

Familiar With: x86, AWS, Docker, Git, TTD, PHP, Python

Exposure To: Swift, Bash, MySQL

Interests: Fantasy and Sci-Fi Books and Comics, Baking, Dungeons and Dragons