# Zhuoqin (Jack) Wang

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## Education

**University of Chicago** — Chicago, IL
*Double Major: Bachelor in Computer Science and Bachelor in Economics* — *2024 – 2026*

**University of Texas, Austin** — Austin, TX
*Bachelor of Science in Computer Science, Turing Scholars Honors Program, GPA: 3.89* — *2023 – 2024*

**Mission San Jose High School** — Fremont, CA
*National Merit Scholarship Winner* — *2019 – 2023*

## Experience

**Game Development Intern** — May 2024 – September 2024
*Dreamworld(YCombinator W21)* — *Redwood City, CA*

- Working with a worldwide talented team on a massive-scale infinite survival MMO(massively multiplayer online game). Performed sprint development, created weekly package releases, and debugged the codebase per player feedback.
- Designed and implemented the lighting item progression system for underground exploration using a combination of C++ and Unreal Engine Blueprints, and ensured the implemented systems were forward-compatible and robust.

**Software Engineer for AI Training Data** — May 2024 – September 2024
*Scale AI* — *Remote/Contract Work*

- Performed verification and improvement of LLMs using reinforcement learning through human feedback.
- Worked on OpenAI's feather project to improve ChatGPT response to specific computer science-related questions by creating sample responses and ranking ChatGPT's generated responses.

**Research Intern** — January 2022 – Jan 2023
*Shanghai Jiaotong University* — *Remote*

- Worked on an ML project for detecting and drawing bounding boxes around cars in BEV(Bird-eyes view) images of city streets by leveraging openMMLab's MMdetection toolbox.
- Improved the EqMotion detection system by designing and implementing a matrix operation to preserve the spatial property of each matrix layer in the learning process to better capture the invariant relationship between agents.

## Projects

**Custom Language Compiler** | *C++*

- Developed a ARM64 compiler for a custom simple language that is Turing complete(support loops, conditional, and functions).
- Employed techniques such as building abstract syntax trees, constant folding, and tail call optimization.

**Web Crawler** | *Java*

- Created a web crawler that can crawl a section of the web based on inputted keywords and logic.
- Implemented features tokenizers to tokenize the input, a parser to parse the tokens through recursive descent, and a query that transforms the parsed tokens into a tree to allow for comparison with the words in a webpage.

**ARM Emulator** | *C++*

- Created an emulator that can emulate a given set of ARM commands and generate correct output.
- Learned how to interpret opcodes, simulate registers and memory, and gain a better understanding of the AArch64 architecture.

**Bullethell Game** | *C++*

- Developed a bullet hell game involving surviving incoming waves of bullets by navigating an avatar.
- Implemented features such as parametric and boomerang shots.

**Image/Text Encoder** | *Java*

- Developed an image encoder/decoder based on a matrix transformation algorithm.
- Improved upon this project by adding a text encoder/decoder based on RSA after user feedback.

## Technical Skills

**Programming Languages**: C++, Unreal Engine, Java, Python
**Languages**: English, Chinese