# Shenyu Qin

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## Education

**Shanghai Jiao Tong University**                                                                      *Sept. 2022 – Present*
*Undergraduate in Computer Science*

- GPA: 3.7/4.3 (or 87.4/100)
- Member of **John Hopcroft Honors Class**, an elite CS program at Zhiyuan College 🔗 for the top 5% of students, with a focus on Theoretical Computer Science
- Relevant Coursework: Mathematical Analysis, Linear Algebra, Combinatorial Mathematics, Probability Theory, Optimization Methods, Mathematical Logic, Modern Algebra, Machine Learning, Computational Complexity, Online Algorithms, Introduction to Cryptography, Topics in Modern Algorithms

## Experience

**John Hopcroft Center, SJTU**                                                                          *Shanghai, China*
*Research Intern, advised by Dr.Yuhao Zhang 🔗*                                                *Jul. 2024 – Present*

- Do research on online load balancing problem in random arrival order model, aiming to close the gap between the lower bound of $\Omega(\sqrt{\log m})$ and the upper bound of $\Omega(\log m/\log\log m)$ by designing an $O(\sqrt{\log m})$-competitive algorithm
- Now consider the online graph balancing problem, which is a special case of the original problem, trying to analyze the competitive ratio of a newly-designed algorithm in this case
- participate in TCS Reading Group every week

## Projects

**Housing Price Prediction**                                                                              *Jul. 2024*
*Course Project in Data Mining*

- Developed a data mining model to analyze the relationship between housing prices and other variables using a partial dataset of Airbnb listings in New York City
- Predicted the price of a given listing and participated in a Kaggle competition

**Towards the chat among distinct LLM agents**                                              *May. 2024*
*Course Project in Natural Language Processing and Large Language Model*

- Investigated the collaborative potential of completely distinct LLM agents (GPT, Llama, and Wenxin Yiyan) through structured dialogues and wrote a paper about the results
- Discovered a new technique termed "Virtual Conversation", where an LLM internally simulates a multi-agent discussion

**Lexical and Syntax Analysis of a Programming Language with Array and String Types**                                                                                            *Nov. 2023*
*Course Project in Programming Languages Design and Implementation*

- Perform lexical and syntax analysis on the WHILE language with array and string types, and implement syntax tree output
- Tools Used: Bison, Flex

**Deque**                                                                                                          *Apr. 2023*
*Course Project in Program Design and Data Structure*

- Implement deque in my own way with arrays and a doubly linked list, meeting the complexity requirement

## Honors and Awards

Zhiyuan Honors Scholarship (Top 5%), SJTU                                                    *2022, 2023, 2024*

## Skills

**Programming Languages:** C++, C, Python, Rust

**Software:** LaTeX, MATLAB, Coq