

EDUCATION	School of Computer Science, Nanjing University <i>Bachelor of Science in Computer Science and Technology</i>	Nanjing, China Sept.2021– Jun.2025(<i>expected</i>)
ADVANCED COMPUTER SCIENCE COURSES	Elements of Cryptography <i>90/100 instructor: Prof. Yuan Zhang</i> Combinatorics <i>86/100 instructor: Prof. Yitong Yin</i> Computational Complexity <i>91/100 instructor: Prof. Penghui yao</i>	fall 2023 spring 2024 spring 2024
	<ul style="list-style-type: none"> The final assessment for this course is a essay about a frontier paper. My essay can be found on my homepage 	
PROJECTS EXPERIENCES	C language implementation of a full system simulator for CISC <i>Introduction to Computer Systems, Independent project</i>	fall 2022
	<ul style="list-style-type: none"> Implementing the various modules of a CISC system in C, including the ALU, i386 instruction set, cache, and I/O. Develop generic instruction decoding and addressing functions to handle a large number of instructions efficiently. By leveraging these generic functions, I implement the decoding and addressing of a vast array of instructions through function calls, ensuring consistency and reducing redundancy in the code. Utilizing inline functions and parameters to create the execution module. 	
	Implementing an operating system in C <i>Operating Systems, Independent project</i>	fall 2023
	<ul style="list-style-type: none"> Implementing part of an operating system in C, including modules for BIOS, process switching, and process synchronization. Create P and V operations for semaphores, using these operations to control access to critical sections. Addressed the dining philosophers problem, ensuring coordination and synchronization among multiple processes. 	
	Implementing components in a network using Python <i>Foundations of Computer Networks, Independent project</i>	fall 2023
	<ul style="list-style-type: none"> Implemente learning switch, IPv4 router, and reliable transmission. Incorporated two timeout mechanisms in learning switch: Least Recently Used (LRU) and Least Traffic. sending and storage of ARP packets,packet forwarding with a timeout mechanism. ICMP packet handling simulated packet loss by generating random numbers and established sliding windows on both the sender and receiver sides to manage the transmission process. 	
	Big data processing:music visualization system <i>Big data processing, 4-person team</i>	fall 2023
	<ul style="list-style-type: none"> implement front-end and back-end interaction using Spring Boot: file downloads on a webpage,calls a backend program, ... Coordinating front-end and back-end content and progress 	

RESEARCH EXPERIENCES	Research on Strong Subadditivity of Quantum Information <i>supervisor: Prof. Penghui Yao</i>	fall 2023- (<i>in progress</i>)
	<ul style="list-style-type: none"> Analyze Lieb's proof and Lin et al.[1]'s proof of quantum strong subadditivity. Compare the similarities and differences between these proof approaches. Explore the properties of the quantum Markov state obtained when equality holds in the new inequality given by Lin et al. Give characteristic of the quantum state when equality holds in the new inequality given by Lin et al. A research defense held by the NJU theory group 	
INTERNSHIPS	CITIC Group Beijing, China	summer 2024
	<ul style="list-style-type: none"> Learn and understand the functions and work of different departments. Give reports and presentations about AI's impact on financial markets 	
SKILLS	Languages: Chinese, English. Programming: Python, C++ (STL: vector, string, map, queue,list, ...)	

REFERENCES

- [1] Lin, TC., Kim, I.H. & Hsieh, MH. A new operator extension of strong subadditivity of quantum entropy. Lett Math Phys 113, 68 (2023). <https://doi.org/10.1007/s11005-023-01688-6>