

Chuhao Xu

Undergraduate in Computer Science

Email: barrin@sjtu.edu.cn
Tel: (+86) 153 9290 2105

EDUCATION

Shanghai Jiao Tong University

Shanghai, China

Honors Bachelor of Science (B.Sc. Hons) in Computer Science

Sept.2019 ~ June 2023 (Expected)

- Member of **ACM Honors Class**, which is an elite CS program for top 5% talented students
- TOEFL score: 101 (L: 28, S: 25, R: 24, W: 24)
- GPA ranking: 13 / 31

HONORS AND AWARDS

Huawei Scholarship (**Top 0.3%**, SJTU)

2021

Zhiyuan Honors Scholarship

2019, 2020, 2021

Excellence Scholarship of Shanghai Jiao Tong University

2019, 2020, 2021

The 12th Asia and Pacific Informatics Olympiad (APIO) Silver Medal

2018

The 32nd China's National Olympiad in Informatics (NOI) Silver Medal

2018

RESEARCH EXPERIENCE

Undergraduate Researcher

Shanghai, China

Shanghai Jiao Tong University, advised by Prof. Quan Chen

July 2021 ~ June 2023 (Expected)

- **Cloud computing, serverless**
 - ✧ Doing research on serverless circumstances like *cold startup latency, resource allocation, load burst, data transfer and load balance*, aiming to **solve real world problems in production environment**.
 - ✧ Currently focused on **workflow scenarios and lightweight VM solutions**. In this work, our group proposed a DAG based workflow optimization method, in order to maximize *in-memory data sharing* and enable *precise scheduling*, by dynamically analyzing the inter-function connection feature.

Oxford Tutorial Programme

(remote) Oxford, Oxfordshire, UK

Oxford University, advised by Ph.D. Student Odhran O'Donoghue

Feb. 2021 ~ May 2021

- **Artificial intelligence and machine learning**
 - ✧ Studied the most significant advancements in the recent history of machine learning.
 - ✧ **Brainstormed** on a paper of historic significance and compared the method it suggested to a more recent paper during each tutorial, via **presentations and discussions**.
 - ✧ Wrote an essay discussing the privacy issues in machine learning.

SELECTED PROJECTS

Mx* Compiler

■ Java

2021

Semantic Checking, Code Generation and Optimization, ANTLR

- Coursework of “Computer Systems Course Design”
- Developed a compiler that compiles C-and-Java-like language (Mx*) to RISC-V ASM.
- Implemented optimizations like function inline, loop invariant code motion and constant

propagation.

RISC-V CPU

■ Verilog 2020

Computer Architecture, FPGA Programming

- Coursework of “*Computer Systems (1)*”
- Designed a RISC-V CPU that supports RV32I Instruction set (2.1-2.6 in RISC-V user manual).
- Implemented a 5-stage pipelined structure with iCache, dCache, and branch prediction.
- Used Vivado to generate bitstream and program the Basys3 FPGA board.

AcmOS - a RISC-V teaching operating system

■ C 2021

Synchronization Primitive, Context Switch, Memory Management

- Coursework of “*Computer Systems (2)*”
- Designed a RISC-V operating system based on an existing teaching-specific framework.
- Implemented key features like synchronization primitive, memory management, context switch, processes and threads.

Chinese Poetry Generation Model

■ Python 2021

Machine Learning, Data Analysis

- Coursework of “*Machine Learning*”
- Designed a LSTM based Chinese poetry generation model with improved data processing, advanced prediction planning and premium result evaluation.
- Won **second** place in the poster session in class.

Web Ticket System

■ HTML, Python 2020

Frontend, Flask

- Coursework of “*Data Structure*”
- Designed a frontend of train ticket Management System, supporting multi-user queries, transactions and maintenance with privilege management.

TEACHING EXPERIENCE

| | |
|---|-----------|
| Teaching Assistant <i>Computer Systems Course Design</i> | Fall 2021 |
|---|-----------|

| | |
|--|-----------|
| Teaching Assistant <i>The Great Ideas in Computer Science</i> | Fall 2020 |
|--|-----------|

ACTIVITIES

| | |
|--------------------------------|------|
| League Branch Secretary | 2021 |
|--------------------------------|------|

| | |
|--|------|
| Shanghai College students public service advertising Competition bronze medal | 2020 |
|--|------|

| | |
|--|------|
| Volunteer of Shanghai Teenager Algorithm Competition, <i>organized by Shanghai Computer Society</i> | 2019 |
|--|------|

| | |
|--|------|
| Star of bass in the university chorus | 2019 |
|--|------|

SKILLS AND INTERESTS

Programming: C++ / Python / Java / Verilog / MATLAB / R

Technical experience:

- Web: Flask / Bootstrap
- System & Database: Mininet / Docker / Qemu / Redis
- Other: LaTeX / Markdown / PyTorch / Vivado

Interests: Photography, Travelling, Music, Flight Simulation