Chuhao Xu

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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
- GPA ranking: 12 / 31
- TOEFL score: 101

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 35th 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 ~ Present

- **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 assay 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 *Computer Systems Course Design* Fall 2021

Teaching Assistant *The Great Ideas in Computer Science* Fall 2020

ACTIVITIES

League Branch Secretary 2021

Shanghai College students **public service advertising** Competition bronze medal 2020

Volunteer of Shanghai Teenager Algorithm Competition, *organized by Shanghai Computer Society* 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: PyTorch / Vivado