Hanyao Liu

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EDUCATION

University of California, Los Angeles

- M.S. in Computer Science — Sept. 2019 - May 2021(expected)

Shanghai Jiao Tong University

- B.S. in Micro-Electronic Science & Technology; — Sept. 2015 - June 2019
- Overall GPA: **87/100**; Rank: **9/66**

EXPERIENCE

Software Engineer Intern at YITU Tech, Shanghai, China — May 2019 - Aug. 2019

(Tech Stack: C++, Docker, SCons, GDB, MongoDB, RESTful API, RPC Service, Thrift)

What I independently completed at the Face Platform Group:

- Implemented automatic-cleaning feature of MongoDB passer-by data records to reduce storage and prevent the data searching efficiency from decreasing, loaded data at system start, and contributed data conversion code to common library of the company
- Containerized RPC services of face platform using Docker, dealing with network, storage, container communication, etc., mastered and improved the scheduling framework to run and monitor more than 30 services, and deployed the containerized face platform system on the website

Shock Graph-based Image Recognition

(Tech Stack: Python, C++, CMake, GDB, MATLAB)

Research Intern at Brown University Advisor: Prof. Benjamin Kimia — July 2018 - Oct. 2018

- Tested visual SLAM algorithms using indoor image datasets, and compared their performance
- Generated standard monocular dataset for 3D-reconstruction, validated the data accuracy
- Reduced the crash rate (the proportion of the input pictures that could successfully generate computation results) of the shock graph computation by 99%, contributed to an open-source repository VXL (C++ computer vision and image understanding library)

Deep Reinforcement Learning-based Rate Adaptation for Adaptive 360-degree Video Streaming

(Tech Stack: TensorFlow, Python)

Research Assistant at SJTU Advisor: Prof. Hongkai Xiong — May 2018 - Sept. 2018

- Reviewed papers of panoramic video network streaming technology and reinforcement learning algorithms, participated in designing a series of problem-oriented expressions including state, reward, objective function to optimize the experience in watching panoramic videos
- Implemented distributed PPO algorithm, tuned parameters, and compared the performance with A3C, DDPG methods

PROJECTS

Multi-cycle MIPS (Million Instructions Per Second) Processor (Tech Stack: Verilog) — Jan. 2018

- Independently implemented the MIPS processor with a cache system, which could execute MIPS instruction set including slt, slti, add, addi, etc. and solve the data hazard and control hazard, the project ranked 2/67 among classmates

Emotion Recognition-based Music Player (Tech Stack: C#) — July 2017 - Aug. 2017

- Developed a music player to adjust users' emotions by playing music according to their facial expressions, with the help of Microsoft emotion recognition API, the project ranked top 1% among students in the software engineering class

TECHNICAL SKILLS

- Version Control: **Git, GitHub**
- Machine Learning: **Python with NumPy&Pandas, Tensorflow**
- Programming Languages: **C++, Java, Python, MATLAB, JavaScript**