Sucheng Qian

UNDERGRADUATE IN COMPUTER SCIENCE

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EDUCATION

Sept. 2017 - June 2021 Shanghai Jiao Tong University, China
B.S. in Computer Science, member of ACM Honors Class
GPA **94.54 / 100,** Ranking **2 / 47**

RESEARCH INTEREST

Computer Vision, Reinforcement Learning.

RESEARCH EXPERIENCE

SJTU Machine Vision and Intelligence Group Oct. 2019 - Present

- 3D video temporal modeling.

Advised by Prof. Cewu Lu
Shanghai Jiao Tong University

APEX Data & Knowledge Management Lab July 2019 - Oct. 2019

- Multi-agent reinforcement learning and Game theory.

Advised by Prof. Weinan Zhang and Prof. Yong Yu
Shanghai Jiao Tong University

PUBLICATIONS

Efficient 3D Video Understanding Using Frame Redundancy Assumption Submitted to CVPR 2020
Gao Peng, Haotian Tang, ***Sucheng Qian****, Cewu Lu*

- Utilize point matching to capture 3D video frame-wise redundancy.
- Incrementally fuse visual changes to previously computed activation, to save unnecessary computation and maintain vision accuracy.

Ad Hoc Multi-Agent Reinforcement Learning using Meta Probabilistic Prior Submitted to AAAI 2020
Ying Wen, ***Sucheng Qian****, Weinan Zhang, Jun Wang*

- Derive the concept of quantal response equilibrium that minimizes the worst-case loss in ad hoc collaboration.
- Formulate maximum entropy reinforcement learning for two-player ad hoc collaboration.
- Utilize meta learning in agent's probabilistic prior to make the policy more adaptive to changing opponents.

HONORS AND AWARDS

National Scholarship of P.R. China (top 1%) Oct. 2019
Ministry of Education of P.R. China

Academic Excellent Scholarship — Nov. 2018, 2019
Shanghai Jiao Tong University

First place in Electronic Trading Challenge held by Jane Street — Nov. 2018

Teaching Experiences

Data Structure, CS158 — Spring 2019

- Give lectures on B+ tree and segment tree.
- Prepare programming assignments and course projects.

Selected Projects

MQ Compiler – A compiler for Mx* Language, MS208, **98/100** — June 2019
https://github.com/OolongQian/MQCompiler
- A compiler from a C-and-Java like Mx* source language to x-86 assembly, implemented in Java from scratch.
- Use single static assignment form as intermediate representation.
- Implement regular compiler optimizations such as value numbering, constant propagation, function inline, and dead code elimination.

Raft – Distributed Consensus Algorithm, MS106, **96/100** — July 2018
https://github.com/OolongQian/Raft
- A consensus algorithm implemented in C++ to maintain data integrity, a realization of paper 'In Search of an Understandable Consensus Algorithm'.

RISC-V CPU, MS108, 93/100 — Jan. 2019
https://github.com/OolongQian/Arch2018
- A RISC-V CPU with 5-stage pipeline implemented in Verilog HDL.

Railway Ticket Management System, CS147, **98/100** — May 2018
https://github.com/OolongQian/Ticket-Office-FSD
- A ticket management system with web frontend and external memory data structures.

Programming Skills

Programming Languages: Python, C/C++, Java, Matlab, Verilog
Deep Learning Toolkits: PyTorch, Tensorflow