YUE YAO

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EDUCATION

Carnegie Mellon University (CMU), PA, US SEP. 2018 - DEC. 2019
M.S. in Computer Science, *School of Computer Science*, GPA: First Semester
Courses: Distributed Systems, Compiler Design, Programming Language Theory

Shanghai Jiao Tong University (SJTU), Shanghai, China SEP. 2014 - AUG. 2018
University of Michigan - Shanghai Jiao Tong University Joint Institute (UM-SJTU JI)
B.S. in Electrical and Computer Engineering, Overall GPA: 3.70 / 4.0, Rank: 8 / 97

Case Western Reserve University (CWRU), Cleveland, USA SPRING 2017
Exchange student in EECS department, Semester GPA: 4.0 / 4.0
Courses: Database, Programming Language Concepts, Theoretical C.S., Software Engineering

PROFESSIONAL EXPERIENCES

June 2018 / DEC 2017 **Hardware Test Engineering Intern, APPLE INC.**
Develop low-level factory diagnostic and testing framework for Apple Watch in C

- Wrote **embedded C** code running in *Extensible Firmware Interface* (EFI) environment. Code is highly reliable software that goes directly into mass production in factory after code review.
- Redesigned and implemented new USB stack featuring flexibility and extensibility. New stack allows the device to select interfaces that are enumerated at runtime.

RESEARCH EXPERIENCES

Current / MAY 2016 Research Assistant, EMERGING COMPUTING TECHNOLOGY LABORATORY, SJTU
Research on disjoint bi-decomposition based approximate logic synthesis algorithms

- Proposed to approximate Boolean functions by *Maximal Disjoint Bi-Decomposable functions*.
- Designed and implemented efficient algorithms to obtain such approximation using **C++**.
- Built an high performance logical circuit simulator by translating target circuit into **C++** code, compiling it, and dynamically linked into application. Simulator achieved over 5,000 times speed-up compared to naive implementations, capable of completing 500 simulations on circuits of thousands of gates.
- Published a first-authored full length paper at ICCD'17, Boston Area, Massachusetts, USA.

JUL 2017 / SEP 2016 Research on image processing and recognition, INNOVATIVE PRACTICE PROGRAM, SJTU
Built a web-app to extract digits from a credit card photo in **Python**

- Applied *Hough transformation* to locate edges in images of credit cards.Trained a *Convolutional Neural Network* that recognizes digits with 95% accuracy. Overall success rate of 90% in daily context.
- Deployed *Django (Python)* based back-end to *Amazon Elastic Beanstalk*.

RELATED PROJECTS

SPR 2017 Object-oriented language interpreter in Scheme (Programming language concepts), CWRU
- Supported object oriented features including classes, inheritance, polymorphism. Supported first-class functions, closures, and overloads. Language is strongly typed.
- Utilized continuations to manage control flow (`break`, `continue` and exceptions).

SU 2017 Online **C/C++ auto-grader** web application for computer science courses, UM-SJTU JI
- Coded in **Python** with Django. Built secure process container through `cgroup` and `seccomp`.
- Fulfilled continuous integration and delivery through `git`, Jenkins and Docker.
- System served over a hundred students till now without any failure or breach.

SERVICES

Undergraduate Teaching Assistant since 2016 Fall, served over 500 students in UM-SJTU JI

FA 2016	INTRO. TO COMPUTERS & PROGRAMMING	Assisted instructor in designing exams and projects.
FA 2017	PROGRAMMING & ELEM. DATA STRUCTURES	Developed a secure autograder.
SU 2017	INTRO. TO OPERATING SYSTEMS	Supervised servers, rewrote course projects.

HONORS & AWARDS

MAY. 2018 Shanghai Jiao Tong University outstanding graduate award
NOV. 2017 John Wu & Jane Sun Merit Scholarship ($2800, 5 students in the institute)
NOV. 2017 Shanghai Jiao Tong university academic excellence scholarship (Top 1%)

PROGRAMMING LANGUAGES & SKILLS

LANGUAGES Proficient: C/C++, Python, Scheme; Intermediate: PHP, SQL, OCaml; Basic: Shell, Haskell, Verilog
TECHNOLOGY Unix, version control with git, CI/CD with Jenkins, Docker,