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

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

PUBLICATIONS

Z. Zhou, **Y. Yao**, S. Huang, S. Su, C. Meng and W. Qian, "DALS: Delay-driven Approximate Logic Synthesis" in *2018 International Conference on Computer Aided Design*, 2018. To appear.

Y. Yao, S. Huang, C. Wang, Y. Wu and W. Qian, "Approximate Disjoint Bi-decomposition and Its Application to Approximate Logic Synthesis" in *2017 IEEE 35th International Conference on Computer Design*, 2017.

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 with *Maximal Disjoint Bi-Decomposable (MDBD) functions*. Hence designed efficient algorithms to obtain such approximation.
- Obtained a 30 times speed up by incorporating a pre-computing technique.
- Designed an *approximate logical synthesis* flow based on MDBD approximations. It performs 70% better in known difficult circuit than existing algorithm (MCNC benchmarks).
- Published a first-authored full length paper at ICCD'17, Boston Area, Massachusetts, USA.
- Poster session presenter in *Student Research Competition* session at *36th International Conference on Computer Aided Design 2017* (3 undergraduates globally), Irvine, California, 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

- Applied *Hough transformation* to locate edges of a credit inside an image.
- Trained a *Convolutional Neural Network* that recognizes digits with 95% accuracy. Achieved an 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-grading 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.
SU 2016	HONORS PHYSICS II	Led recitation classes and grade exams.
FA 2017	PROGRAMMING & ELEM. DATA STRUCTURES	Developed a secure autograder.
SU 2017	INTRO. TO OPERATING SYSTEMS	Supervised servers, rewrote course projects.

MAY 2017 — Awarded **Annual Outstanding Teaching Assistant** from UM-SJTU JI.

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%)

LANGUAGES, STANDARDIZED TESTS & SKILLS

LANGUAGES	Chinese: Mother tongue; English: Fluent, TOEFL iBT 111 (Speaking 28)
GRE	327 + 3.5 (Verbal 157, Quantitative 170, Academic writing 3.5)
COMPUTER SKILLS	Languages: C/C++, Python, Verilog HDL, PHP, SQL, Scheme, shell script, Haskell, LaTeX, Technology: Unix, version control with git, CI/CD with Jenkins, Docker