

Yucheng Yin

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Education

University of Michigan

Bachelor of Computer Science and Engineering
GPA: 3.9/4.0

Ann Arbor, MI
September 2016 – present

Shanghai Jiao Tong University (SJTU)

Bachelor of Electrical and Computer Engineering
GPA: 3.8/4.0 Rank: 10/189

Shanghai, China
September 2014 - present

Research Experience

Security Analysis of CV-based Traffic Control System

Prof. Z. Morley Mao

Ann Arbor, MI
May 2017 – August 2017

- Realized automatic analysis of large results of the brute-force attack
- Implemented strategic attack by sending spoofed data of one vehicle
- Set up the whole experiment environment and simulated under real-world settings
- Reached great congestion effect on the traffic with only one spoofed vehicle
- **Related paper “Exposing Congestion Attack on Emerging Connected Vehicle based Traffic Signal Control”, accepted by NDSS 2018 (second-author)**

Multi-agent Trajectory Planning

Prof. Dimitra Panagou

Ann Arbor, MI
May 2017 – July 2017

- Developed a simulation environment for Multi-agent Trajectory Planning
- Setup the whole environment through ROS, gazebo, Matlab and C++
- Modified the algorithm of Obstacle Avoidance in Matlab
- Adaptive simulation environment for Unmanned Aerial Vehicle (uav), airplane, etc.

The 27th SJTU Participation in Research Program

Prof. Shane Johnson

Shanghai, China
March 2015 - March 2016

- Improved the design of adjustable stiffness spring
- Manufactured the prototype with 3-D printing and Bluetooth control
- Reached a broader range of stiffness with much lower price

Capstone Design Project

Speech-to-Text and Voice Differentiation Android App – IoVoice

Prof. Sugih Jamin

Ann Arbor, MI
September 2017 – December 2017

- Developed an Android app called “IoVoice” used for meeting recording
- Converted all speakers’ words to one electronic text report that can be edited and shared
- Tagged each speaker in the generated report
- **Published IoVoice to Google Play**

Course Project

Simplified Wikipedia Search Engine

Web Databases and Information Systems

Ann Arbor, MI
April 2017

- Used MapReduce to calculate inverted index for each document (Hadoop)
- Developed an index server to return documents by relevance
- Implemented a search interface with user-provided query and returned top 10 relevant documents

Network File Server

Introduction to Operating System

Ann Arbor, MI
April 2017

- Implemented a multi-threaded, secure network file server
- Implemented several types of client requests and corresponding server responses
- Encrypted all request and response message (secret-key based on the user’s password)

Working Experience

Michigan Engineering Transfer Support (METS), University of Michigan

Ann Arbor, MI

Transfer Student Leader

September 2017 – present

- Connect with the incoming transfer students
- Serve as a liaison between transfer students, METS, and departmental advisors
- Engage transfer students in events of the department, College and University

Academic Department, UM-SJTU Joint Institute

Shanghai, China

Assistant Class Advisor

September 2015 – August 2016

- Helped freshmen adapt to new college life
- Organized regular class meetings and activities
- Provided weekly advising for course selection, career planning, etc.

Academic Department, UM-SJTU Joint Institute

Shanghai, China

Teaching Assistant in Chemistry & Chemistry lab

September 2015 - April 2016

- Gave recitation class (2hrs/wk.), held office hours (2hrs/wk.)
- Graded students' homework and exam papers, participated in the lab as lab assistants
- Advised freshman students, helped with queries and homework assignments

Shanghai Jiao Tong University Teaching Corps in Yunnan

Yunnan, China

Volunteer Teacher

December 2015 – January 2016

- Taught Math in Yunnan Kuangchang Hope Primary School
- First Prize of Shanghai Jiao Tong University Joint Institute Voluntary Team

Publications

- Qi Alfred Chen, **Yucheng Yin**, Yiheng Feng, Z. Morley Mao, and Henry X. Liu, Exposing Congestion Attack on Emerging Connected Vehicle based Traffic Signal Control, To appear in the 25th Network and Distributed System Security Symposium (NDSS'18), San Diego, February 2018. (*acceptance rate* 21.5% = 71/331)
- Qi Alfred Chen, **Yucheng Yin**, Yiheng Feng, Z. Morley Mao, and Henry X. Liu, Exposing Falsified Data Attacks on CV-based Traffic Signal Control, Poster in 26th USENIX Security Symposium (USENIX Security'17), Vancouver, BC, Canada, August 2017

Honors and Awards

- 2018 CRA Outstanding Undergraduate Researcher Nominee
- UM-SJTU Joint Institute Dean's List (Fall 2014/Summer 2015/Fall 2015/Summer 2016)
- University of Michigan Dean's List, University Honors (Fall 2016)
- SJTU Outstanding Scholarship (B) (2015)
- Basic Teaching Assistant Certificate (UM-SJTU Joint Institute) (2015)
- Outstanding Assistant Class Advisor (UM-SJTU Joint Institute) (2015)
- National Chemistry Contest for High School Students, first prize, top 5% in Jiangsu Province (2013)

Language Level

- **TOEFL (October 2017)**
- Reading 29, Listening 28, Speaking 24, Writing 29. Total 110/120.
- **GRE (September 2017)**
- Verbal 159/170, Quantitative 169/170, Writing 4.0/6.0. Total 328+4.0.

Computer Skills

- **Environments:** Windows, Mac OS, Linux.
- **Languages/Applications:** Proficient in C, C++, Java, Python; Master HTML, JavaScript, CSS, SQL, MATLAB, Mathematica, Solid Works, Verilog HDL, Android Development.
- **Documentation:** Latex, MS Office