

# REN LIU

Phone: (213)477-0104 | Email: [renliu@andrew.cmu.edu](mailto:renliu@andrew.cmu.edu) | GitHub: <https://github.com/An0nym6>

## EDUCATION

- Carnegie Mellon University (CMU), USA** January 2019 — May 2020
- Master of Science in Software Engineering
- University of Southern California (USC), USA** August 2018 — December 2018
- Master of Science in Computer Science, GPA: 4.0/4.0
- Sun Yat-sen University (SYSU), China** August 2014 — June 2018
- Bachelor of Engineering in Software Engineering, GPA: 3.8/4.0
  - Obtained the Second-Class Scholarship of SYSU

## EXPERIENCE

- Researcher, Cyberspace Lab, SYSU / Network Analysis, Machine Learning** March 2017 — June 2018
- Captured more than 50 GB of HTTP(S) traces using tcpdump and collected corresponding user-browser interactions with a self-designed Chrome extension
  - Conducted both supervised and unsupervised learning on HTTP(S) datasets with machine learning techniques, e.g., GBDT, Neural Network and Anomaly Detection
  - Reconstructed users' clickstreams to optimize network traffic and ensured network security without violations of user privacy. F1 score for identifying user clicks on synthetic HTTPS can be 50% higher than any published solutions
- Developer, Modern Web Lab, SYSU / Front-End, Node.js** February 2016 — July 2016
- Designed and developed the Melting Diagnosis & Treat System via Jade, Sass and LiveScript
  - White-box tested the General Form Creator (GFC), a local npm package capable of generating Material Design forms with validations from simple input string
  - Wrote technical documentation about architecture of GFC and fixed deployment bugs during its installation process from a npm server

## PROJECTS

- Group Leader, Software Engineering Training / Full-Stack, Software Engineering** April 2017 — July 2017
- Designed and fulfilled front-end, back-end and database of the Online Check-in and Quiz System using Angular 4, Koa and MongoDB
  - Carried out whole project with agile methodologies, e.g., iterative & incremental development and weekly meetings & reports
  - Deployed server side on a Tencent Cloud server with SSL and an ICP filing; scanned server with Zenmap to avoid possible vulnerabilities
- Team Leader, PwC Cup Hackathon / Game Development, AR** April 2017
- Came up with an idea of combining Canton elements with Pokémon Go style game
  - Completed a demo Angular 2 AR game in 2 days; implemented map-based game scene using AMap API, Rock-paper-scissors level using Leap Motion API and the Cantonese food crafting table
  - Programmed 2556 lines of code within 20 hours, ranking No.1 in group
- Group Work, Course Project / Android, Software Engineering** March 2017 — June 2017
- Designed and developed front-end of an Android ticketing app using Ionic 3
  - Extracted movie information from Douban.com and created a mock data provider

## SKILLS

- Programming languages: C/C++, Python, HTML/Pug, CSS/SCSS/Sass, JavaScript/TypeScript, MATLAB, C#, Java
- Technologies: Angular, Express/Koa, MongoDB, Node.js, Machine learning, Network Analysis, Software Engineering, Ionic, UWP, Cocos2d-x