

# Hsuan-Hau Liu

(205) 876-3234 | howardliu43@gmail.com | hsuanhau.liu.github.io | Los Angeles, CA

---

## EDUCATION

**University of Southern California** | Los Angeles, CA  
*M.S. Computer Science - Intelligent Robotics*  
Exp. Fall 2019

**Auburn University** | Auburn, AL  
*B.S. Computer Science*  
Major GPA: 3.65 | December 2017

## SKILLS

- **Programming Languages:** C++, Python, Java, C
- **Web Development:** HTML, CSS, JavaScript, Bootstrap, JSP, XML, MySQL
- **Tools:** VIM, Git, MS Visual Studio

## WORK EXPERIENCE

**Undergraduate Teaching Assistant** at Auburn University, USA Fall 2017  
*Personal Computer Applications Course*

- Prepared course material prior to each class and assisted lecturers to monitor exams.
- Guided students through finishing lab assignments and offered help for technical issues.

**Internship with DrayTek** at HuKou, Taiwan Summer 2015  
*Product Quality Control Department*

- Conducted product testing on internet routers, APs, modems and delivered detailed reports.
- Corresponded with a team of five engineers to provide technical support in solving problems for customers, and performed bug reproduction to identify causes.

## PROJECTS

**Machine-Improvised Music** | Python Fall 2017

- Developed an intelligent system that can learn from musical melodies and produce music.
- Conducted statistical analysis on input MIDI files, and applied Hill Climbing concept to devise algorithms to generate consistent and pleasant melodies.

**Chatroom System** | C, Java Fall 2017

- Produced client and server programs for peer-to-peer communication between computers.
- Leveraged UDP and TCP to implement one-way chat requests and reliable chat connection over network, and added features such as checksum and automatic pairing.

**Message System with Needham-Schroeder Protocol** | C, Java Fall 2017

- Devised a one-to-one message system with a shared-key authentication protocol.
- Utilized symmetric and asymmetric encryption techniques to implement XOR cipher and RSA algorithms for Needham-Schroeder protocol.

**Online Exam Web Application** | JSP, XML, CSS, MySQL Spring 2017

- Built a web application to administer online exams for students and test makers, including features such as account creation, login, name search, exam creation, and result review.
- Designed a user-friendly interface and organized visual structure for easy navigation.

**Bank Transaction System Simulation** | C++ Fall 2016

- Created a program allowing users to create various bank accounts and use bank services.
- Implemented derived classes and functions with inheritance and virtual functions techniques.

## RELEVANT COURSEWORK

- Data Structure • Algorithms • Discrete Structures • Software Construction
- Software Modeling and Design • Web Application Development • Artificial Intelligence

## HONOR & INVOLVEMENT

- **Honor:** Auburn University Dean's List (Spring & Fall 2017)
- **Member:** Association for the Advancement of Artificial Intelligence (2018), USC Association for Computing Machinery (2018), USC Autonomous Underwater Vehicle Design Team (2018)