Hsuan-Hau Liu

hsuanhal@usc.edu | hsuanhauliu.github.io | Los Angeles, CA

EDUCATION

University of Southern California | Los Angeles, CA
M.S. Computer Science - Intelligent Robotics
GPA: 3.68 | Exp. December 2019

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

WORK EXPERIENCE

Developer Intern at University of Southern California, CA, USA — Aug 2018 – Nov 2018
Directed Research CarmaCam Project

- Developed a Python package containing an object detection model and a user report scoring module.
- Integrated a TensorFlow machine learning model for vehicle, stop sign, and traffic light detection.
- Collected and annotated over 400 image data for training machine learning models.

Undergraduate Teaching Assistant at Auburn University, AL, USA — Aug 2017 – Sep 2017
Personal Computer Applications Course

- Assisted lecturers with course materials preparation, lab assignments, and exam monitoring.
- Taught students basic Microsoft Office skills and resolved technical issues in computer lab.

Student Intern at DrayTek, HuKou, Taiwan — July 2015 – Aug 2015
Product Quality Control Department

- Conducted firmware testing on over 100 internet routers, APs, modems and delivered detailed reports.
- Corresponded with an engineering team to provide technical support for customers, performed bug reproduction to identify root causes, and tested new firmware features.

SKILLS

- **Programming Languages**: Proficient: Python, C++ / Familiar with: Java, C, C#
- **Web Development**: HTML, CSS, JavaScript, Bootstrap
- **Tools**: Git, VIM, Tensorflow, OpenCV, Jupyter Notebook, MS Visual Studio, Unity

PROJECTS

RuGo | C#, Unity, HTC Vive, ZED Mini — Sep 2018 – Nov 2018

- Leveraged technologies to create a Rube Goldberg machine experience in virtual and augmented reality.
- Structured overall game architecture, implemented sandbox tools, and set up version control system.
- Guided our group and managed tasks and documents throughout the development process.

Random Text Generator | Python — July 2018 – July 2018

- Created a sentence generating program which produces natural sounding sentences based on inputs.
- Implemented using statistical techniques including Naïve Bayes and Hidden Markov Model.

Machine-Improvised Music | Python — Oct 2017 – Dec 2017

- Developed an intelligent system which can learn musical melodies and produce music of its own.
- Conducted statistical analysis on input music files in combination with Hill Climbing algorithm to generate consistent and pleasant musical melodies.
- Constructed data structure to optimize statistical analysis speed and storage space.

Online Exam Web Application | JSP, XML, CSS, MySQL — March 2017 – May 2017

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

RELEVANT COURSEWORK

- Analysis of Algorithms • Data Structure • Machine Learning • Artificial Intelligence
- Advanced Computer Vision • Augmented, Virtual, and Mixed Reality • Web Application Development