Melody Chen

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Education

University of California, Los Angeles, Los Angeles, CA — Expected June 2022

Bachelor of Science in Computer Science; GPA: 3.85/4.00

Relevant Coursework: Data Structures and Algorithms, Logic Design of Digital Systems, Computer Organization, Introduction to Engineering Design: Internet of Things

Honors: HKN(Electrical/Computer Engineering Honor Society), Dean's List(Fall 2018, Winter 2018, Spring 2019)

Skills

Technical Skills: C/C++, JavaScript, React.js, Java, Python, Flask, MySQL, Verilog, Arduino, Raspberry Pi

Languages: English(fluent), Mandarin Chinese (fluent), Taiwanese(fluent), Japanese (JLPT N2), Spanish(4 years)

Experiences

Human Computer Interaction Research Group, UCLA

NSF REU Research Intern — 6/2019 ~ Present

- Working under Professor Xiang Chen with PhD Candidate Yao Xie on the **XAI**(Explainable AI) project CheXplain
- Co-Author of the paper, "CheXplain: Enabling Physicians to Explore and Understand Data-Driven, AI-Enabled Medical Imaging Analysis", recently submitted to **ACM CHI Conference 2020**
- Designed and implemented the high-fidelity prototype for CheXplain with **React.js** and **Firebase** used to present to medical professionals during co-design and user study sessions, and in the conference submission video
- Analyzed **TensorFlow** CheXpert model to implement saliency map to obtain annotations on Chest X-ray Images

Undergraduate Researcher — 3/2019 ~ 5/2019

- Sorted over 60,000 patients' Chest X-ray records for data analysis with **bash** and **Python**
- Conducted paired-survey on over 100 referring physicians and radiologists in order to aid design of an XAI system that builds upon and enhances existing workflow

Eta Kappa Nu(Electrical & Computer Engineering Honor Society), UCLA — 4/2019 ~ Present

Webmaster

- Maintain and update the official member website for the Electrical and Computer Engineering Honor Society of UCLA
- Working on re-building the website with **React.js**, Go, and PostgreSQL for the 2020 school year
- Reconstructing test bank database that holds over 1000 of old tests in the form of pdf files with Go and PostgreSQL

Bruin Racing: Super Mileage Vehicle Team, UCLA — 9/2018 ~ Present

Data Acquisition Engineer

- Assisted in the development of a Joulmeter system using Arduino, voltage divider, current shunt, and amplifier
- Integrated hall effect and temperature sensors into the electric vehicle for data analysis
- Designed and implemented program for **data collection** for hall effect and temperature sensors in **C**

Engineering Projects

Resistor Reader, *LA Hacks* — 3/22 ~ 3/24/2019

- Implemented and designed **computer vision** application able to identify color bands of resistors to calculate the resistance of the resistor given a clear image
- Utilized numpy, scipy, and matplotlib in **Python** to process resistor images and integrated Clarifai API into algorithm to improve differentiation of color bands and resistor background

Web Blogger, *Personal Project* — *7/2019*

- Implemented **full-stack web blogger** application with login and access control, display/edit dashboard and articles
- Developed **backend API** with **Flask** to query **MySQL** database to feed frontend blogger with user information and users' personal articles

Smart Lock, *IdeaHacks* — *1/18 ~ 1/20/2019*

- Built a SmartLock with features such as **facial recognition** and **motion detection**, through the use of components such as the **Raspberry Pi**, gyroscope, and solenoid lock
- Integrated Microsoft Azure Facial Recognition API and developed **Python** code to control the gyroscope to detect motion of the lock which signals the Twilio API to alert lock owner, all with the Raspberry Pi