Xander Koo

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EDUCATION

2017–2021 **Pomona College**, *B.A. Computer Science (Asian Studies minor),* Claremont, CA, GPA: 3.983

- *Relevant Coursework:* **Machine Learning, Algorithms**, Computer Systems, Applied Algorithms, Data Structures/Advanced Programming, Fund. of CS, Discrete Math, Linear Algebra, Intro to Stats
- *Honors:* Member of **Phi Beta Kappa,** Pomona Scholar Award (Fall '17, Spring/Fall '18, Spring/Fall '19)

EXPERIENCE

Aug 2020 to present **Research Assistant**, *Brown HCI @ Brown University,* Providence, RI (remote).

- Continue research on Brown HCI's WebGazer, currently working on a robust error testing suite for gaze predictions
- Work w/ Jing Qian on Portal-ble, a mobile AR environment. Integrate Google MediaPipe to replace Leap Motion Tracker

May 2020 to Aug 2020 **Research Assistant**, *Pomona College Department of Computer Science,* Claremont, CA (remote).

- Conduct HCI/computer vision research on webcam gaze prediction under Prof Alexandra Papoutsaki, funded by NSF REU
- Contribute to Brown HCI's WebGazer and develop new JavaScript-based approach for webcam eye-tracking by incorporating TensorFlow.js Facemesh and current/new online and offline approaches to gaze prediction, aiming for CHI & UIST 2021

Sep 2018 to Dec 2019 **Teaching Assistant**, *Pomona College Department of Computer Science,* Claremont, CA.

- TA for Data Structures/Advanced Programming (Spring/Fall 2019); for Intro CS (Fall 2018)
- Supervise weekly lab, grade projects, hold mentor sessions for 30+ students (approx. 5–6 hr./week)

Jul 2019 to Aug 2019 **Summer Research Intern**, *National Taiwan University IoX Center,* Taipei, Taiwan.

- Worked on 2 new VR haptic accessories (FrictShoes, GuideBand), submitted to CHI & UIST 2020
- Designed VR test scenario for FrictShoes with varying floor frictions in Unity/C#
- Coded Arduino-based comparison prototype for vibrotactile arm guidance (Aggravi et al, 2016)
- Won 2nd place award in IoX Center Summer Research Program under Prof Ray Tsai & Prof Robin Chen

May 2019 to Jul 2019 **Undergraduate Research Intern**, *Kogakuin University*, Tokyo, Japan.

- Implemented live camera object detection with TensorFlow & Raspberry Pi that communicates with linked microcontrollers (GR-PEACH) via I2C protocol for a microcontroller-based path guidance robot

Jul 2018 to Sep 2018 **Research Assistant**, *Stanford University Asia-Pacific Research Center,* Stanford, CA.

- Researched Taiwan's Central Election Commission and indigenous land rights under Dr. Kharis Templeman

PROJECTS

Feb 2020 to Mar 2020 **LINE Bot for Reddit Posts**, *personal project*, Python.

- Created web-based app to get new Reddit text/image posts via LINE message by sending a message to a LINE bot
- Used LINE Messaging API, Python Reddit API Wrapper, webhook endpoint on Google Cloud Platform

Nov 2019 to Dec 2019 **Course Review Sentiment Analysis**, *CS158 Machine Learning final group project*, Java/Python.

- Scraped course reviews from school site; examined basic sentiment analysis w/ a naive Bayes model vs. NLTK-VADER

Feb 2019 **Image Seam-Carving Algorithm,** *CS143 Applied Algorithms*, Java.

- Implemented seam-carving (Avidan & Shamir 2007) to more intelligently resize images
- Coded horizontal/vertical seam carving based on energy-mapping dynamic programming algorithm

ACTIVITIES

Sep 2019 to Aug 2020 **Co-President,** *Taiwanese-American Student Association,* Claremont Colleges, CA.

- Create & plan events (4–5 per semester); manage membership & budget; expand club outreach

Jan 2018 to Aug 2020 **Officer,** *5C Freestylin' Collective,* Claremont Colleges, CA.

- Co-founded club; inclusive space for street/hip-hop dancers on-campus & in LA/Inland Empire area
- Plan events (e.g. dance workshops), community outreach, sponsoring on/off-campus dance events etc.

TECHNICAL SKILLS

Languages: Proficient in Java, Python, C#, JavaScript. Familiar with C/C++.

Other: Proficient in LaTeX, Bash, HTML, CSS, Git. Familiar with Linux, Raspberry Pi, Arduino.

LANGUAGES

Mandarin: Bilingual proficiency

Japanese: Professional fluency (JLPT N2)