

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

- Sep 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 (FricShoes, GuideBand), submitted to CHI & UIST 2020
 - 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

- Sep 2020 **Mildfire**, hackathon project for PennApps XXI, Python/JS.
- Created web-app to detect wildfire high-risk zones based on satellite imagery, for PennApps XXI virtual hackathon @ UPenn
 - Used Keras retinanet DL model to identify trees (Weinstein et al. 2019) from satellite maps collected from Google Maps API
- 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
- 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)