

# 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*: **Phi Beta Kappa** inductee, **Tapia 2020 Conference Scholar**, Pomona Scholar Award (Fall 2019 + 4 more semesters)

## EXPERIENCE

- Sep 2020 to present **Research Assistant**, *Brown HCI @ Brown University*, Providence, RI (remote).
- Continue development of a robust error testing pipeline for gaze prediction accuracy on Brown HCI's [WebGazer](#)
  - Integrate Google MediaPipe for biometrics on Portal-ble, a mobile AR environment in Unity, working with Jing Qian
- May 2020 to Aug 2020 **Research Assistant**, *Pomona College Department of Computer Science*, Claremont, CA (remote).
- Conducted HCI/computer vision research on [WebGazer](#), a webcam gaze prediction app, under Prof Alexandra Papoutsaki
  - Integrated TensorFlow.js [Facemesh](#) face tracking; added IndexedDB browser cache; built prediction accuracy test suite in JS
  - Continue to maintain GitHub repo and fix misc. issues, with plans to submit to CHI & UIST 2021.
- Sep 2018 to Dec 2019 **Teaching Assistant**, *Pomona College Department of Computer Science*, Claremont, CA.
- Mentor for Data Structures/Advanced Programming (Spring/Fall 2019) in Java; for Intro CS in Java (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
  - Built Arduino comparison prototype for vibrotactile arm guidance (Aggravi et al, 2016) and VR test scenarios in Unity/C#
  - 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 in Python, on a 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

## SELECTED 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
  - Responsible for integrating DL model to detect trees from satellite maps (Weinstein et al. 2019) 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 & dynamic programming-based energy map alg (Avidan & Shamir 2007) to smartly resize images

## LEADERSHIP

- 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 committed to elevating local 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 Fluent in Java, JavaScript, Python, C#. Familiar with C/C++.
- Other Proficient in Git, Bash, HTML/CSS, LaTeX. Familiar with TensorFlow, OpenCV, Unity, Linux, Raspberry Pi, Arduino.

## LANGUAGES

- Mandarin Bilingual proficiency
- Japanese Professional fluency (JLPT N2)