

Andy Kong

andykong.org
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EDUCATION

ETH Zurich | Zürich, Switzerland

September 2022 - Now | M.S Computer Science, expected grad '24

Carnegie Mellon University | Pittsburgh, PA, USA

August 2018 - May 2022 | B.S. Computer Science, minor in Human-Computer Interaction | GPA: 3.6/4.0

EXPERIENCE

Google @ Seattle, WA | Student Researcher | June - September 2022

- Prototyped and evaluated augmented reality experiences on the Daydream team

Hewlett-Packard | Consultant | April - May 2021

- Built a real-time hand gesture detection model to help evaluate future interaction modalities on personal laptops

Future Interfaces Group @ CMU | Research Assistant | February 2020 ➡ June 2022

- Wrote Java applet to process 6 audio channels from a microphone array simultaneously
- Created a novel, multimodal interaction technique on smartphones harnessing custom trained single-shot eye tracking and IMU gesture recognition
- Led biosensing project using live detection of brainwaves to trigger interactions with binary beacons placed around a home environment

Human Computer Integration Lab @ UChicago | Visiting Researcher |

June ➡ August 2021

- Designed custom analog circuits to selectively activate mechanoreceptors in the hand
- Performed exploratory studies for eliciting pressure sensations in the fingertips
- Designed study to explore the effects of waveform, intensity, and polarity on electrically-induced phantom touch sensation

Kura AR | R&D Intern | May ➡ August 2020

- Constructed high-resolution AR demos in Unity to showcase custom AR headset's capabilities
- Tested lasers and motors against specification using custom analog driver circuits

MIT Lincoln Laboratory | Bioengineering Intern | May ➤ August 2019

- Taught data analytics at the BeaverWorks Summer Institute, introducing Python, statistics, and machine learning to 20+ high school students through a medical lens
- Analyzed genetic and biological data from the NHANES dataset to predict hereditary and population-level diseases

Cylab | Research Assistant | January ➤ May 2019

- Integrated smartphone sensors with a particle filter and ground-truth landmarks to accurately track user location in GPS-restricted indoor environments

PUBLICATIONS

1. Karan Ahuja, **Andy Kong**, Mayank Goel and Chris Harrison. 2020. Direction-of-Voice (DoV) Estimation for Intuitive Speech Interaction with Smart Devices Ecosystems. In Proceedings of the 33rd Annual ACM Symposium on User Interface Software and Technology (UIST '20). Association for Computing Machinery, New York, NY, USA. DOI: <https://dl.acm.org/doi/10.1145/3379337.3415588>
2. **Andy Kong**, Karan Ahuja, Mayank Goel, and Chris Harrison. 2021. EyeMU Interactions: Gaze + IMU Gestures on Mobile Devices. In Proceedings of the 2021 International Conference on Multimodal Interaction (ICMI '21). Association for Computing Machinery, New York, NY, USA, 577–585. DOI: <https://doi.org/10.1145/3462244.3479938>
3. Karan Ahuja, Cathy Fang, Vivian Shen, Nathan Riopelle, **Andy Kong**, Chris Harrison. ControllerPose: Inside-Out Body Capture with VR Controller Cameras. Proceedings of the 2021 CHI Conference on Human Factors in Computing Systems (CHI '22). DOI: <https://doi.org/10.1145/3491102.3502105>

PATENTS

1. K Ahuja, A Kong, M Goel, and C Harrison. Direction-of-Voice (DoV) Estimation for Intuitive Speech Interaction with Smart Devices Ecosystems. Filed June 10, 2020.

PRESS

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| CNN These researchers came up with a solution for one of VR's biggest issues: tracking your legs | 2022 |
| VR Times Researchers Demonstrate Body Tracking via Modded VR Controllers in Meta Quest 2 | 2022 |
| ACM TechNews A Solution for One of VR's Biggest Issues: Tracking Your Legs | 2022 |
| TechCrunch Controlling your phone with your eyes | 2022 |
| TechXplore Your eyes can control your smartphone via new gaze-tracking tool | 2022 |

ACM CACM The Eyes Have It	2022
HotHardware Researchers Develop EyeMU Tech That Lets You Control Your Phone With Your Eyes	2022
Engadget AI could tell smart speakers what direction your voice is coming from	2020
Hackaday Robots can finally answer, are you talking to me?	2020

REFERENCES

Chris Harrison	Future Interfaces Group Director, Associate Professor at Carnegie Mellon University
Mark Stehlik	School of Computer Science, Teaching Professor at Carnegie Mellon University

HOBBIES

Folding dumplings, playing Tetris, doing projects.