Andy Kong

andykong.org
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RESEARCH FOCUS

My interests include intuitive interactions, biosensing interfaces, perceptual augmentation, and enhancing the speed of human-computer communications.

EDUCATION

Carnegie Mellon University | Pittsburgh, PA

August 2018 - May 2022 | **B.S. Computer Science**, minor in Human-Computer Interaction

GPA: **3.6/4.0**

PROFESSIONAL EXPERIENCE

Hewlett-Packard | Consultant | April - May 2021

- ➤ Prototyped a hand gesture navigation system for laptops
- ➤ Trained a real-time gesture recognition model using hand pose from a Leap Motion

Future Interfaces Group @ CMU | Research Assistant | February 2020 ➥ now

- ➤ Wrote Java applet for processing 6 audio channels from a microphone array simultaneously
- ➤ Created a novel, multimodal interaction technique on smartphones harnessing one-shot eye tracking and IMU gesture recognition
- ➤ Initiated 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
- ➤ 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 with 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). Accepted, not yet released.

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.
2. A Kong, K Ahuja, M Goel, and C Harrison. EyeMU Interactions: Gaze + IMU Gestures on Mobile Devices. Filed November, 2021.

REFERENCES

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

The inquisitive sort, aren't you?

HOBBIES

Folding dumplings, playing Tetris, doing science.

The inquisitive sort, aren't you?