Woojin Ko

Personal Information

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Education

AUG '22 — PRESENT	**Cornell Tech / Cornell University**
	M.S. / Ph.D in Computer Science - GPA: 3.74 / 4.0
	VR / AR & Human Computer Interaction, PACT Co-President
TEACHING	Human Computer Interaction and Design, Building Startup Systems
RELEVANT	3D User Interfaces, Virtual and Augmented Reality, Computer Vision, Algorithmic Fairness
AUG '17 — MAY '21	**University of California, Berkeley**
	B.S. in Electrical Engineering and Computer Sciences - GPA: 3.71 / 4.0
	EECS Honors Program: Research Thesis - Human Computer Interaction (HCI)
TECHNICAL	Artificial Intelligence, Machine Learning, Algorithms, Security, Data Structures, Data Science
INTERACTION	Human Computer Interaction EECS Honors Thesis, Virtual Reality, Computer Graphics, Tech Firm Leadership

Research Experience

JUN '23 — PRESENT	**Autism / ADHD + Social VR Accessibility Project Co-Lead, ADHD Video Accessibility Project Co-Lead, PhD Researcher**
	Enhancing Ability Lab - Cornell Tech - Shiri Azenkot
	Designed and conducted user interviews to better understand, when socializing in multi-user VR environments, the accessibility needs and challenges of Autistic / ADHD people who face frequent challenges with social interactions.
	Designed and conducted user interviews to better understand, when watching videos on current platforms, the accessibility needs and challenges of people with ADHD.
AUG '22 — JAN '24	**XRCare Project Co-Lead, PhD Researcher**
	XR Collaboratory - Cornell Tech + MSK Cancer Center - Deborah Estrin, Harald Haraldsson
	Leveraged AR / CV to assist informal, at-home caregivers and work with remote expert clinicians.
	Developed Hololens 2 and iPhone applications for wound care, drainage, and physical rehab, using various capabilities like photo capture, semantic segmentation, annotation, pose tracking, and networked live streaming.
JUN '19 — MAR '21	**Spacefind Project Co-Lead, Undergraduate Student Researcher**
	XR Lab - College of Environmental Design - Luisa Caldas, Mohammad Keshavarzi
	Devised integrated modules for processing 3D indoor scenes, calculating the optimal mutual interaction space, and recommending feasible furniture movements to expand the interaction boundaries.
	Developed a Hololens application in Unity for multiple users to visualize the space layout projections in AR.
	Designed a full-scale Hololens visualization experience with an intuitive UI, visual instructions for moving furniture, more aesthetic and user-friendly designs, and improved hologram stability.
APR '19 — JAN '21	**OpenARK Team Lead, Undergraduate Student Researcher**
	FHL Vive Center for Enhanced Reality - Allen Yang, Shankar Sastry
	Managed Berkeley's open-source AR SDK - maintaining industry-level performance and resolving issues relating to core assets such as hand tracking, 3D reconstruction, and SLAM.
	Created installers and CMake scripts for building dependencies and running OpenARK on Windows/Linux.
JAN '21 — MAY '21	**AR-Video Query Project Co-Lead, Honors Research Thesis Author**
	Jacobs Institute for Design Innovation - Bjoern Hartmann, James Smith
	Conducted thesis to help build a system that enables users to query iPhone videos temporally and spatially.
	Designed the spatial query interaction of painting points in a region, the temporal query interaction of scrubbing to specific time frames in multiple videos, and the results panel of visualizing query results.
	Extended our system's utility for crowdsourcing social activism and optimizing CV training data collection.

Publications and Presentations

CHI '25	**2025 CHI - Conference on Human Factors in Computing Systems (Yokohama, Japan)**
	L Jiang, **W Ko**, S Yuan, T Shende, S Azenkot
	"Shifting the Focus: Exploring Video Accessibility Strategies and Challenges for People with ADHD"
ASSETS '24	**2024 ASSETS - SIGACCESS Conference on Computers and Accessibility (St. John's, Canada)**

J Collins, **W Ko**, T Shende, S Y Lin, L Jiang, A Stevenson Won, S Azenkot
"Exploring the Accessibility of Social Virtual Reality for People with ADHD and Autism: Preliminary Insights"

JMIR '24 | **2024 JMIR - Journal of Medical Internet Research (New York, New York)**
L Albright, **W Ko**, M Buvanesh, H Haraldsson, F Polubriaginof, G J Kuperman, M Levy, M R Sterling, N Dell, D Estrin
"Opportunities and Challenges for Augmented Reality in Family Caregiving: Qualitative Video Elicitation Study"

CORNELL TECH OPEN STUDIO '23 | **2023 Cornell Tech Open Studio Showcase (New York, New York)**
W Ko, L Albright, H Haraldsson, D Estrin
XRCare Demo

EECS HONORS THESIS '21 | **2021 UC Berkeley Electrical Engineering and Computer Sciences Honors Research Thesis (Berkeley, California)**
AR-Video Query

IEEE VR '20 | **2020 IEEE VR - Conference on Virtual Reality and 3D User Interfaces (Atlanta, Georgia)**
M Keshavarzi, A Yang, **W Ko**, L Caldas.
"Optimization and Manipulation of Contextual Mutual Spaces for Multi-User Virtual and Augmented Reality Interaction"

ISMAR '19 | **2019 ISMAR - International Symposium on Mixed and Augmented Reality (Beijing, China)**
J Menke, **W Ko**, A Yang
"Tutorial: OpenARK - Tackling Augmented Reality Challenges via an Open-Source SDK."

INDUSTRY EXPERIENCE

AUG '21 — DEC '21 | **Technical Exhibit Designer Intern**
National Museum of Math
Designed and redesigned several exhibits, aiming to make math more fun and interactive for visitors.
Created a digital harmonograph creation web application as the demo for the 2021 MoMath Gala Fundraiser.

AUG '20 — MAY '21 | **Project Manager**
Neurofit (startup)
Led collaboration with Neurofit startup to create an iOS app that utilizes ARKit gaze detection to gather and analyze oculometric data, to then predict neurological conditions such as Alzheimer's and traumatic brain injury.

MAY '20 — AUG '20 | **Software Development Engineer Intern**
Amazon, Inc.
Designed and implemented a Java backend API for calculating the cancellation date for Purchase Orders.
Created a UI displaying the successful results of API calls on thousands of POs covering complex policies and cases.
Established the groundwork for significant improvements to internal tool predictions and vendor UX clarity.

RELEVANT EXPERIENCE

AUG '19 — DEC '19 | **Electrical Muscle Stimulation VR - Capstone Project Tech Lead**
CS294-137 Virtual Reality and Immersive Computing
Devised an electrical muscle stimulation haptic feedback system to immerse users further in VR.
Constructed a three-part system - hacked EMS device circuits, built an Arduino Unity-EMS bridge, and designed Oculus VR experiences (drums, tennis, shooting range) with the appropriate muscle group stimulation

JAN '20 — MAY '21 | **Software Division Lead**
Neurotech @ Berkeley
Directed the software division and overseeing EEG data projects including a self-care/health educational tool, music creation module, and human visual system reconstruction.

FEB '19 — JAN '21 | **AR for VIPs Team Lead, Officer**
Extended Reality @ Berkeley
Developed a Hololens app providing audio assistance for visually impaired users to navigate surroundings.
Mapped voice commands and hand gestures to our assistive audio functions for reading text aloud from street signs and sonifying nearby surroundings with attached audio beacons

AUG '20 — DEC '20 | **Piano Palette AR Technical Lead**
Jacobs Institute Innovation Catalysts Spark Grant Winner
Designed a real-time piano AR visualization experience to elicit deeper connections with classical music.

Service

Jan '24 - Present	**Teaching Assistant** | *Cornell Tech* Human Computer Interaction and Design, Building Startup Systems
Jun '24	**Volunteer Chair** | *XR Access Symposium 2024*
Jan '24 - Present	**Co-President** | *PhDs at Cornell Tech (PACT)*
Oct '23	**Student Volunteer** | *ACM SIGACCESS Conference on Computers and Accessibility (ASSETS 2023)*
May '23 - Present	**Organizer** | *Cornell Graduate Student Union*
May '23	**PhD Mentor** | *Cornell REU*
Jun '23	**Student Volunteer** | *XR Access Symposium 2023*
May '21	**Volunteer** | *Berkeley Mutual Aid*
Oct '20	**Hackathon Mentor** | *Berkeley Hack Month*
Oct '19	**Hackathon Mentor** | *CalHacks*
Dec '19	**Academic Intern** | *(CS61B) Data Structures, (CS61A) Interpretation of Computer Programs*

Other Interests and Activities

Tottenham fan, pickup soccer, pickup basketball, writing, travel, food, photography, skateboarding, books, movies, concerts