

# Woojin Ko

## PERSONAL INFORMATION

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## EDUCATION

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AUG '22 – **Cornell Tech / Cornell University**  
- *Ph.D in Computer Science*  
Human Computer Interaction / Computer Graphics / Mixed Reality

AUG '17 – **University of California, Berkeley**  
MAY '21 *B.S. in Electrical Engineering and Computer Sciences*  
EECS Honors Program: Breadth - Human Computer Interaction

GPA: Technical: 3.77/4.00, Overall: 3.74/4.00

RELEVANT COURSES: Graduate: (CS 294-137) Virtual Reality and Immersive Computing,  
Upper Division: (CS H196A) Senior EECS Honors Thesis (HCI), (CS 184) Graphics and Imaging, (CS 189) Machine Learning, (CS188) Artificial Intelligence, (CS 170) Efficient Algorithms, (CS 161) Security, (CS C100) Data Science, (CS 198) Self-Driving Cars, (ARCH 199) Architecture Independent Study Research, (PSYCH C162) Human Happiness, (PUBPOL C103) Wealth and Poverty, (GLOBAL 198) Mental Health and Intergenerational Dialogue, (POLISCI 179) Political Colloquium, (SOCIO 198) Social Change and the Pandemic, (PSYCH 198) Happiness Advantage

## PUBLICATIONS

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2020 **Spacefind: Optimization and Manipulation of Contextual Mutual Spaces for Multi-User Virtual and Augmented Reality Interaction**  
By Mohammad Keshavarzi, Allen Yang, **Woojin Ko**, Luisa Caldas  
*2020 IEEE Conference on Virtual Reality and 3D User Interfaces (Atlanta)*  
M. Keshavarzi, A. Y. Yang, W. Ko and L. Caldas, "Optimization and Manipulation of Contextual Mutual Spaces for Multi-User Virtual and Augmented Reality Interaction," 2020 IEEE Conference on Virtual Reality and 3D User Interfaces (VR), Atlanta, GA, USA, 2020, pp. 353-362, doi: 10.1109/VR46266.2020.00055.

## PRESENTATIONS

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2019 **OpenARK Tutorial – Tackling AR Challenges via an Open-Source SDK**  
By Joseph Menke, **Woojin Ko**, Allen Yang  
*2019 International Symposium on Mixed and Augmented Reality (Beijing)*  
Joseph Menke, Woojin Ko, and Allen Y Yang. 2019. Tutorial: OpenARK – Tackling Augmented Reality Challenges via an Open-Source SDK. 2019 IEEE International Symposium on Mixed and Augmented Reality (ISMAR). Beijing, China.

## RESEARCH EXPERIENCE

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JUN '19 – **Spacefind Project Co-Lead, Student Researcher**  
MAR '21 *XR Lab - College of Environmental Design - Luisa Caldas, Mohammad Keshavarzi, Josh Mao*  
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 – **OpenARK Team Lead, Student Researcher**  
JAN '21 *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  
Leading spatial understanding and user interface project aiming to combine semantic segmentation and DeepSDF representation to allow users to delete, replace, or augment specific physical objects.

JAN '21 – **AR Video Query Project Co-Lead, Honors Research Thesis Author, Student Researcher**  
PRESENT *Jacobs Institute for Design Innovation - Bjoern Hartmann, James Smith*  
Conducting thesis to help build a system that enables users to query iPhone videos temporally and spatially.  
Co-designing 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.