

# TAEIN KWON

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## RESEARCH INTERESTS

Action Recognition, Video Analysis, Egocentric Vision, Augmented Reality (AR), Virtual Reality (VR), 3D Vision, Robot-learning, Multimodal Human-AI Interaction, and Computer Vision

## EDUCATION

### ETH Zürich

Ph.D., Computer Science - Supervisor: Prof. Marc Pollefeys

Zürich, Switzerland

Present

### University of California Los Angeles (UCLA)

M.S., Electrical and Computer Engineering

CA, USA

Jun. 2018

### Yonsei University

B.S., Electrical and Electronic Engineering

Seoul, Korea

Aug. 2015

## RESEARCH EXPERIENCE

### ETH Zürich - Computer Vision and Geometry Lab

*Scientific Assistant*

Zürich, Switzerland

Nov. 2018 - Present

- Developing a framework to obtain fine-grained human action labels using self-supervised learning to guide users in AR.
- Collecting a dataset that contains precise 3D hand poses and interacted object poses using synchronized Kinect cameras to understand first-person interaction recognition.

### UCLA - Center for Vision, Cognition, Learning, and Autonomy and Joo Lab

*Graduate Student Researcher*

CA, USA

Oct. 2016 - Jun. 2018

- Designed a reinforcement learning-based framework for an AI agent to navigate a specific target room in house models using human feedback in VR.
- Constructed a hand gesture recognition system and its model based on Long Short-Term Memory (LSTM) algorithm in VR.

### Yonsei University - Machine Intelligence Lab.

*Undergraduate Student Researcher*

Seoul, Korea

Feb. 2014 - Aug. 2015

- Proposed a novel biometric that verifies people based on their unique weight balance and pressure distribution on the “Wii Balance Board” using a self-collected database of 80 subjects.

## PROFESSIONAL EXPERIENCE

### Microsoft Research

*Research Intern*

Redmond, USA (remote)

Jun. 2022 - Present

- Investigating multi-modal video understanding in MR.

### Clova AI, Naver & Line Cooperation

*Research Intern*

Gyeonggi, Korea

Jun. 2018 - Aug. 2018

- Estimated depth from monocular images for fast moving objects.

### SOODAL

*CEO and Co-founder*

Seoul, Korea

Aug. 2014 - Dec. 2015

- Devised a machine learning scheduler application that suggests events to people based on personal data patterns using collaborative filtering.

## TEACHING EXPERIENCE

### ETH Zürich

*Teaching Assistant*, Computer Vision, 3D Vision, Mixed Reality

Zürich, Switzerland

Oct. 2018 - Present

### UCLA

*Teaching Assistant*, Intermediate Programming, AI and new media

CA, USA

Jan. 2017 - Jun. 2018

### Instituto Cristiano Interactivo

*Volunteer Teacher*, C Programming

Ciudad Del Este, Paraguay

Aug. 2014

## SKILLS

Languages: Python, C/C++, Matlab, R, SQL

Specialties: Action Recognition, 3D Vision, Reinforcement Learning, Computer Vision, VR/AR

Tools: Pytorch, Tensorflow, HoloLens, Unity, Unreal Engine, Kinect

## AWARDS

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<b>Scholarship</b> , Recipient of Korean Government Scholarship from NIIED	2018
<b>Scholarship</b> , Yonsei International Foundation	2016
<b>IBM Innovation Prize</b> , Startup Weekend, Technology Competition	2015
<b>Best Technology Prize</b> , Internet of Things (IoT) Hackathon by the government of Korea	2014
<b>Best Laboratory Intern</b> , Yonsei Institute of Information and Communication Technology	2014
<b>Scholarship</b> , Yonsei University Foundation	2014, 2010
<b>Creative Prize</b> , Startup Competition, Yonsei University	2014
<b>Scholarship</b> , Korean Telecom Group Foundation	2011

## TALKS

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Applied Machine Learning Days (AMLD) @ EPFL & Swiss JRC	Mar. 2022
ICCV 2021 Workshop on Egocentric Perception, Interaction and Computing (EPIC)	Oct. 2021
Swiss Joint Research Center (JRC) Workshop 2021	Apr. 2021

## ACADEMIC SERVICE

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Reviewer: Siggraph  
Organizer: KSAE Open Seminar @ ETH Zürich

## PUBLICATION

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**Taein Kwon**, Bugra Tekin, Siyu Tang, Marc Pollefeys, "Context-Aware Sequence Alignment using 4D Skeletal Augmentation", Conference on Computer Vision and Pattern Recognition (CVPR), 2022.  
**Taein Kwon**, Bugra Tekin, Jan Stuhmer, Federica Bogo, Marc Pollefeys, "H2O: Two Hands Manipulating Objects for First Person Interaction Recognition", International Conference on Computer Vision (ICCV), 2021.  
**Taein Kwon**, Eunjeong Park, Hyuk-jae Chang, "Smart Refrigerator for Healthcare Using Food Image Classification", ACM Conference on Bioinformatics, Computational Biology, and Health Informatics (ACM BCB), 2016.