Taein Kwon

· Zürich, Switzerland · taein.kwon@inf.ethz.ch · http://www.taeinkwon.com

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 — Zürich, Switzerland
Ph.D., Computer Science - Supervisor: Prof. Marc Pollefeys — Present

University of California Los Angeles (UCLA) — CA, USA
M.S., Electrical and Computer Engineering — Jun. 2018

Yonsei University — Seoul, Korea
B.S., Electrical and Electronic Engineering — Aug. 2015

Research Experience

ETH Zürich - Computer Vision and Geomerty Lab — Zürich, Switzerland
Scientific Assistant — 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 — CA, USA
Graduate Student Researcher — 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. — Seoul, Korea
Undergraduate Student Researcher — 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 — Redmond, USA (remote)
Research intern — Jun. 2022 - Present

- Investigating multi-modal video understanding in AR.

Clova AI, Naver & Line Cooperation — Gyeonggi, Korea
Research intern — Jun. 2018 - Aug. 2018

- Estimated depth from monocular images for fast moving objects.

SOODAL — Seoul, Korea
CEO and Co-founder — 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 — Zürich, Switzerland
Teaching Assistant, Computer Vision, 3D Vision, Mixed Reality — Oct. 2018 - Present

UCLA — CA, USA
Teaching Assistant, Intermediate Programming, AI and new media — Jan. 2017 - Jun. 2018

Instituto Cristiano Interactivo — Ciudad Del Este, Paraguay
Volunteer Teacher, C Programming — 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, Kinnect

Awards

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

Talks

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

Reviwer: Siggraph
Organizer: KSAE Open Seminar @ ETH Zürich

Publication

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.