Heeseung Kwon

Position

Post-doctoral Researcher
THOTH research team
INRIA Grenoble-Rhône-Alpes

Contact Information

INRIA Grenoble-Rhône-Alpes, THOTH research team
655 avenue de l'Europe, 38330 Montbonnot, France
e-mail: heeseung.kwon@inria.fr

Citizenship

The Republic of Korea

Birthday

July 28th, 1989.

Research Interests

Computer vision and Machine learning,
especially, video understanding, and action recognition.

Education

Pohang University of Science and Technology (POSTECH), Pohang, Korea

Ph.D., (Unified master's and doctor's course) **Sep 2012 – Feb 2021**

- Thesis: Learning Temporal Dynamics for Video Action Recognition
- Advisor: Prof. Minsu Cho
- Co-Advisor: Prof. Suha Kwak

Pohang University of Science and Technology (POSTECH), Pohang, Korea

B.S., Department of Electronic Engineering **Mar 2008 – Jun 2012**

Research Experience

THOTH research team, INRIA Grenoble-Rhône-Alpes, France
Post-doctoral Researcher **Sep 2021 – Now**

- Under the supervision of Karteek Alahari.

Dep. of Computer Science and Engineering, POSTECH, Korea
Post-doctoral Researcher **Feb 2021 – Aug 2021**

- Research on video understanding and dynamic neural networks.
- Collaboration with students at Computer Vision Lab. (Manjin Kim, Dahyun Kang, Juhong Min).

International Publications

Manjin Kim*, **Heeseung Kwon***, Chunyu Wang, Suha Kwak and Minsu Cho, "Intervolution: Relational Transform for Video Understanding.", in **NeurIPS**, 2021 (*equal contribution), *under review.*

Dahyun Kang, **Heeseung Kwon**, Juhong Min and Minsu Cho, "Correlational Embedding for Few-Shot Classification.", in **ICCV**, 2021.

Heeseung Kwon*, Manjin Kim*, Suha Kwak and Minsu Cho, "Learning Self-Similarity in Space and Time as a Generalized Motion for Action Recognition.", in **ICCV**, 2021 (*equal contribution).

Gyeongsik Moon*, **Heeseung Kwon***, Kyoung Mu Lee and Minsu Cho, "IntegralAction: Pose-driven Feature Integration for Robust Human Action Recognition in Videos.", in the 2nd International Workshop on Large-scale Holistic Video Understanding, **CVPR Workshop**, 2021 (*equal contribution).

Heeseung Kwon, Manjin Kim, Suha Kwak, and Minsu Cho, "MotionSqueeze: Neural Motion Feature Learning for Video Understanding" in **ECCV**, 2020.

Heeseung Kwon, Woohyun Shim, and Minsu Cho, "Temporal U-Nets for Video Summarization with Scene and Action Recognition", in CoVieW'19 Proceedings of the 2nd Workshop and Challenge on Comprehensive Video Understanding in the Wild, **ICCV Workshop**, 2019 (Challenge winner as 2nd place).

Heeseung Kwon, Suha Kwak, and Minsu Cho, "Video Understanding via Convolutional Temporal Pooling Network and Multimodal Feature Fusion", CoVieW'18 Proceedings of the 1st Workshop and Challenge on Comprehensive Video Understanding in the Wild, ACM Multimedia conference (**MM Workshop**), 2018 (Challenge winner as 1st place).

Heeseung Kwon, Yeonho Kim, Jin S. Lee, and Minsu Cho, "First Person Action Recognition via Two-stream ConvNet with Long-term Fusion Pooling" in Pattern Recognition Letters (**PRL**), Vol. 68, no. 1, pp. 76-82, 2018.

Seungjae Oh, **Heeseung Kwon**, and Hyojeong So, "Hidden UI: projection-based augmented reality for map navigation on multi-touch tabletop", Proceedings of the 2nd ACM symposium on Spatial User Interaction (**SUI**), 2014.

Honours and Awards

The challenge winner at CoVieW'19 workshop and challenge, ICCV 2019

- 2nd place at the Challenge on Comprehensive Video Understanding in the Wild

The challenge winner at CoVieW'18 workshop and challenge, ACM MM 2018

- 1st place at the Challenge on Comprehensive Video Understanding in the Wild
- Awarded to the best algorithm on multi-task action and scene recognition

Academic Serivces

I served as a reviewer in ICPR and ACCV.

Projects

Development of advanced face recognition system integration
co-op with POSCO ICT — Mar 2020 – Dec 2020

Source technology research for context recognition and prediction via comprehensive video understanding
co-op with Hanyang University and KAIST — May 2018 – Dec 2020

Development of object detection and semantic segmentation system for intelligent vehicles
co-op with VADAS — Oct 2018 – Dec 2019

Development of the multi-view multi-channel broadcasting system for sports digital contents
funded by Ministry of Culture, Sports and Tourism — Jun 2016 – Jun 2018

Enhancing usability of 2D screen and projection based augmented reality system
funded by Department of Creative IT Engineering — Jan 2014 – Dec 2015

Patents

Yeongsuk Kim, **Heeseung Kwon**, "Method for temporal information encoding of the video segment frame-wise features for video recognition" (Korean domestic; 1019369470000)

Language Skills

Korean(native), English(advanced)

Programming

Python, C, C++, MATLAB, Pytorch, Keras, Tensorflow, LaTeX

Referees

Available on request.