Jiyoung Lee

Ph.D. Candidate · Yonsei University

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Interests

2-D/3-D Computer vision, Video understanding, Affective computing, and Deep learning.

Education

Yonsei University — *Seoul, S.Korea*

Ph.D. Candidate in School of Electrical and Electronic Engineering — *Mar. 2016 - Present*

- Working with Prof. Kwanghoon Sohn.

Yonsei University — *Seoul, S.Korea*

B.S. in School of Electrical and Electronic Engineering — *Mar. 2012 - Feb. 2016*

Experience

Microsoft Research AI — *Redmond, USA*

Research Intern — *April. 2020 - Present*

- HUE: Human Understanding and Empathy Group.
- Working with Dr. Daniel McDuff and Dr. Yale Song.
- Artificial Social Intelligence.

Publication

"Multi-modal Recurrent Attention Networks for Facial Expression Recognition"

Jiyoung Lee, Sunok Kim, Seungryong Kim, and Kwanghoon Sohn — *May. 2020*

- IEEE Transaction on Image Processing (TIP), **(Accept)**

"Video Summarization by Learning Relationships between Action and Scene"

Jungin Park, **Jiyoung Lee**, Sangryul Jeon, and Kwanghoon Sohn — *Oct. 2019*

- International Conference on Computer Vision Workshop (ICCV Workshop-CoVieW)

"Context-Aware Emotion Recognition Networks"

Jiyoung Lee, Seungryong Kim, Sunok Kim, Jungin Park, and Kwanghoon Sohn — *Oct. 2019*

- International Conference on Computer Vision (ICCV)

"Graph Regularization Network With Semantic Affinity for Weakly-supervised Temporal Action Localization"

Jungin Park, **Jiyoung Lee**, Sangryul Jeon, Seungryong Kim, and Kwanghoon Sohn — *Sep. 2019*

- IEEE International Conference on Image Processing (ICIP)

"Audio-Visual Attention Networks for Emotion Recognition"

Jiyoung Lee, Sunok Kim, Seungryong Kim, and Kwanghoon Sohn — *Oct. 2018*

- ACM Multimedia Workshop- Workshop on Audio-Visual Scene Understanding for Immersive Multimedia (MMW)

"Learning to Detect, Associate, and Recognize Human Actions and Surrounding Scenes in Untrimmed Videos"

Jungin Park, Sangryul Jeon, Seungryong Kim, **Jiyoung Lee**, Sunok Kim, and Kwanghoon Sohn — *Oct. 2018*

- ACM Multimedia Workshop- The 1st Workshop and Challenge on Comprehensive Vidoe Understanding in the Wild (MMW)

"Spatiotemporal Attention Based Deep Neural Networks for Emotion Recognition"

Jiyoung Lee, Sunok Kim, Seungryong Kim, and Kwanghoon Sohn — *Apr. 2018*

- IEEE International Conference on Acoustics, Speech and Signal Processing (ICASSP)

"Automatic 2D-to-3D Conversion using Multi-scale Deep Neural Network"

Jiyoung Lee, Hyungjoo Jung, Youngjung Kim, and Kwanghoon Sohn — *Sep. 2017*

- IEEE International Conference on Image Processing (ICIP)

Patent

"Audio-Video Matching Area Detection Apparatus and Method"

Jiyoung Lee, and Kwanghoon Sohn — *Jul. 2019*

- Korea patent, 10-2019-0090937

"Apparatus and Method for Recognizing Activity and Detecting Activity Area in Video"

Jiyoung Lee, and Kwanghoon Sohn — *Mar. 2019*

- Korea patent, 10-2019-0034501

"Emotion Recognition Apparatus and Method Based on Spatiotemporal Attention"

Jiyoung Lee, and Kwanghoon Sohn — *May. 2018*

- Korea patent, 10-2018-0053306

Research Experiences

Deep Identification and Tracking of Missing Person in Heterogeneous CCTV — *S.Korea*

Funded by Ministry of Science, National Research Foundation — *Sep. 2018 – Present*

- Developed an algorithm for pedestrian detection.

Intelligent Virtual Reality: Deep Audio-Visual Representation Learning for Multimedia Perception and Reproduction — *S.Korea*

Funded by Institute of Information & Communication Technology. — *Sep. 2017 – Present*

- Developed an algorithm using audio-visual data.

Fundamental Study of Vision Algorithms for Comprehensive and Through Understanding of Videos — *S.Korea*

Funded by Ministry of Science, ICT and Future Planning. — *Sep. 2017 - Present*

- Developed an algorithm for understanding untrimmed videos.

Development of the High-Precision AR & VR Contents Based on Smart-Car Sensors — *S.Korea*

Funded by Institute of Information & Communication Technology — *Jan. 2017 – Present*

- Developed an algorithm for dense stereo matching in outdoor environments.

Emotional Intelligence Technology to Infer Human Emotion and Carry on Dialogue Accordingly — *S.Korea*

Funded by Institute of Information & Communication Technology. — *Sep. 2017 - Jun. 2018*

- Developed an algorithm for inferring human emotion from multi-spectral images.

High Quality 2D-to-Multiview Contents Generation from Large-Scale RGB+D Database — *S.Korea*

Funded by Institute of Information & Communication Technology. — *Mar. 2016 – Aug. 2017*

- Developed an algorithm for inferring high-quality depth from a single 2-D image.

Yonsei University, Dept. of Electrical and Electronic Engineering — *S.Korea*

Teaching Assistant. — *Mar. 2016 – Feb. 2017*

- Digital signal processing, Electrical and electronic engineering experiments: fundamentals.

Professional Activities

Reviewers

IEEE Access

Media Coverage

"A deep learning technique for context-aware emotion recognition."

TechXplore — *Aug. 2019*

Honors & Awards

2019	**3rd Award**, CoVieW 2019 (ICCV Challenge)	*CoVieW'19*
2018	**Silver Prize**, Ulsan KBS UCC Contest	*KBS*
2016	**Finalist & Award**, University Startup 300	*Ministry of Education, S.Korea*
2016	**2nd Award**, Sungshin Startup 4th Idea Contest	*Sungshin University*
2015	**Silver Prize**, Yonsei Creative Design Challenge	*Yonsei University*
2015	**Award**, Campus Reboot Startup Camp	*Ministry of Education, S.Korea*

Skills

Programming	Python, C/C++, JAVA, Ruby, Lua, MATLAB, OpenCV, LaTeX, Linux
Deep learning	PyTorch, Tensorflow, Caffe, Torch
Web	Django, Ruby on Rails, HTML5, CSS, Javascript
Languages	Korean, English