Junsik Jung

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RESEARCH INTEREST

My research interests lie in computational photography and machine learning, including but not limited to:

- Neuromorphic Sensor-based Vision
- Robust & Efficient Machine Learning
- Scalable Representation Learning

EDUCATION

Korea Advanced Institute of Science and Technology (KAIST) Mar. 2020 – Aug. 2026 (expected)
Ph.D. Candidate in Computer Science Daejeon, KOR

- Advisor: Sung-Eui Yoon

Yonsei University Mar. 2018 – Feb. 2020
Master in Electrical & Electronic Engineering Seoul, KOR

- Advisor: Kar-Ann Toh

University of Seoul Mar. 2012 – Feb. 2018
Bachelor in Electrical & Computer Engineering Seoul, KOR

PUBLICATIONS

Event-guided Blur Synthesis for Domain Adaptation in Motion Deblurring
***Junsik Jung**, Seokryun Choi, Yoonki Cho, Woo Jae Kim, Andrew Jeong, Sung-Eui Yoon*

- Under review, Submitted to IEEE Transactions on Multimedia (TMM)

Learning Event-guided Exposure-agnostic Video Frame Interpolation via Adaptive Feature Blending
***Junsik Jung**, Yoonki Cho, Woo Jae Kim, Lin Wang, Sung-Eui Yoon*

- British Machine Vision Conference (BMVC), 2025

AegisRF:Adversarial Perturbations Guided with Sensitivity for Protecting Intellectual Property of Neural Radiance Fields
*Woo Jae Kim, Kyu Beom Han, Yoonki Cho, Youngju Na, **Junsik Jung**, Sooel Son, Sung-eui Yoon*

- British Machine Vision Conference (BMVC), 2025

Synergistic enhancement of long-term plasticity in solid-state electrolyte-gated synaptic transistors realized by introducing an ion-capturing layer
*Dong Hyun Choi, Jong Bin An, Jusung Chung, Kyungho Park, Hyunsik Lee, **Junsik Jung**, Byung Ha Kang, Hyun Jae Kim*

- Nano Today, 2025

Generalizable person re-identification via balancing alignment and uniformity
*Yoonki Cho, Jaeyoon Kim, Woo J Kim, **Junsik Jung**, Sung-Eui Yoon*

- Advances in Neural Information Processing Systems (NeurIPS), 2024

Feature separation and recalibration for adversarial robustness
*Woo Jae Kim, Yoonki Cho, **Junsik Jung**, Sung-Eui Yoon*

- IEEE/CVF conference on Computer Vision and Pattern Recognition (CVPR), 2023, **Highlight**

Deep video inpainting guided by audio-visual self-supervision
*Kyuyeon Kim, **Junsik Jung***, Woo Jae Kim*, Sung-Eui Yoon (*: equal contribution)*

- IEEE International Conference on Acoustics, Speech and Signal Processing (ICASSP), 2022

Wi-Fi based user identification using in-air handwritten signature
***Junsik Jung**, Han-Cheol Moon, Jooyoung Kim, Donghyun Kim, Kar-Ann Toh*

- IEEE Access, 2021

Transfer learning of Wi-Fi handwritten signature signals for identity verification based on the kernel and the range space projection
***Junsik Jung**, Jooyoung Kim, Kar-Ann Toh*

- IEEE International Conference on Image Processing (ICIP), 2019

HONORS & AWARDS

Excellence Teaching Assistant Award July 2020
KAIST School of Computing

- Recognized for instructional support and contribution to course operations.

Haedong Scholarship July 2018 – Feb. 2020
Haedong Science & Cultural Foundation

- Awarded a full-tuition scholarship based on academic merit and research potential.

Academic Excellence Award Oct. 2016
University of Seoul

- Recognized for scholastic achievement within the department.

PATENTS

METHOD AND APPARATUS FOR SYNTHESIZING TRAINING DATA FOR FINE-TUNING A DEBLURRING MODEL USING EVENT DATA AND MOTION CHARACTERISTIC TRANSFER
***Junsik Jung**, Sung-Eui Yoon, Yowon Jeong*

- Filed Korea Patent, Pending

OPERATING METHOD FOR FRAME INTERPOLATION SYSTEM AND IMAGE PROCESSING DEVICE INCLUDING THEREOF
***Junsik Jung**, Sung-Eui Yoon, Yowon Jeong*

- Filed May. 2024, Korea Patent, No. 10-2024-0067262
- Filed US Patent, Pending

METHOD FOR INTERPOLATION MODEL AND DEVICE FOR LEARNING INTERPOLATION FRAME GENERATION MODULE
***Junsik Jung**, Sung-Eui Yoon, Yowon Jeong*

- Filed Dec. 2022, Korea Patent, No. 10-2022-0178683
- Filed Dec. 2023, US Patent, No. 18/543,506

PROJECTS

Deep Learning Framework for Video Frame Rate Up-Conversion *Samsung System LSI*
PROJECT LEAD & MAIN DEVELOPER *Sep. 2020 – Aug. 2025*

- Developed deep learning-based frame interpolation frameworks and training schemes to restore videos

Deep Generative Model for Texture Atlas Generation and Restoration *Naver Labs*
PROJECT LEAD & MAIN DEVELOPER *Apr. 2022 – Jun. 2023*

- Developed a reconstruction pipeline for digital twin by integrating differentiable rendering with image-to-image translation

TEACHING EXPERIENCE

TEACHING ASSISTANT

- Global Institute For Talented Education (GIFTED) C/C++ Programming, KAIST, Fall 2024
- Korea Science Academy (KSA) R&E Program, KSA, Summer 2022
- Theory of Computation (CS422), KAIST, Fall 2021
- Large-Scale Image & Video Retrieval (CS688), KAIST, Spring 2021
- Data Structure (CS206), KAIST, Spring – Fall 2020