

# JUNHO KIM

N1 Room 418, KAIST, 291 Daehak-ro, Yuseong-gu, Daejeon, South Korea

Phone: +82 10 2021 6481 ◊ e-mail: arkimjh@kaist.ac.kr

## EDUCATION

---

**KAIST**, Daejeon, South Korea

*Sep. 2019 - Feb. 2025 (Expected)*

-Ph.D. in Electrical Engineering

-Advisor: Prof. Yong Man Ro

**Dongguk University**, Seoul, South Korea

*Feb. 2012 - Feb. 2019*

-B.S. in Electrical and Electronic Engineering

## RESEARCH INTERESTS

---

### Machine Learning

- Reasoning & Generalization
- Causal Inference
- Interpretability & Explainability
- Model Robustness

### Deep Learning

- Multi-modal Learning
- Vision-Language Models
- Large Language Models

## PUBLICATION

---

### International Journal

1. Robust Perturbation for Visual Explanation: Cross-Checking Mask Optimization to Avoid Class Distortion

**Junho Kim**, Seongyeop Kim, Seong Tae Kim, and Yong Man Ro,  
IEEE Transactions on Image Processing (**TIP**), 2021, IF: 10.856.

### International Conference

1. Causal Unsupervised Semantic Segmentation  
**Junho Kim\***, Byung-Kwan Lee\*, and Yong Man Ro, (\*: equally contributed)  
Under review, 2023.
2. Mitigating Adversarial Vulnerability through Causal Parameter Estimation by Adversarial Double Machine Learning  
Byung-Kwan Lee\*, **Junho Kim\***, and Yong Man Ro, (\*: equally contributed)  
IEEE/CVF International Conference on Computer Vision (**ICCV**), 2023.
3. Mitigating Dataset Bias in Image Captioning through CLIP Confounder-free Captioning Network  
YeonJu Kim, **Junho Kim**, Byung-Kwan Lee, Sebin Shin, and Yong Man Ro  
IEEE International Conference on Image Processing (**ICIP**), 2023.
4. Demystifying Causal Features on Adversarial Examples and Causal Inoculation for Robust Network by Adversarial Instrumental Variable Regression  
**Junho Kim\***, Byung-Kwan Lee\*, and Yong Man Ro, (\*: equally contributed)  
IEEE / CVF Computer Vision and Pattern Recognition Conference (**CVPR**), 2023.
5. Masking Adversarial Damage: Finding Adversarial Saliency for Robust and Sparse Network  
Byung-Kwan Lee\*, **Junho Kim\***, and Yong Man Ro, (\*: equally contributed)  
IEEE / CVF Computer Vision and Pattern Recognition Conference (**CVPR**), 2022.

6. Distilling Robust and Non-Robust Features in Adversarial Examples by Information Bottleneck  
**Junho Kim\***, Byung-Kwan Lee\*, and Yong Man Ro, (\*: equally contributed)  
Advances in Neural Information Processing Systems (**NeurIPS**), 2021.
7. Interpretation of Lesional Detection via Counterfactual Generation  
**Junho Kim**, Minsu Kim, and Yong Man Ro,  
IEEE International Conference on Image Processing (**ICIP**), 2021.
8. Unsupervised Disentangling of Viewpoint and Residues Variations by Substituting Representations for Robust Face Recognition  
Minsu Kim, Joanna Hong, **Junho Kim**, Hong Joo Lee, and Yong Man Ro,  
International Conference on Pattern Recognition (**ICPR**), 2020.
9. Learning Style Correlation for Elaborate Few-Shot Classification  
**Junho Kim**, Minsu Kim, Jung Uk Kim, Hong Joo Lee, Sangmin Lee, Joanna Hong, and Yong Man Ro,  
IEEE International Conference on Image Processing (**ICIP**), 2020.

## RESEARCH EXPERIENCE

---

### Research Engineer in Hyundai MOBIS

- Research Engineer
- Safety Electronic System Group *Jan. 2019 - Aug. 2019*
- Developing an algorithm of airbags inflation estimating the magnitude and the type collision of an accident

### Research Internship in Samsung Electronics

- Research Intern
- Image Quality Development Group *Jun. 2018 - Aug. 2018*
- Developing a super-resolution algorithm for flagship models

### Research Internship in Hyundai MOBIS

- Research Intern
- Driving Assistant System Group *Jan. 2018 - Feb. 2018*
- Developing Lane Keeping Aid System (LKAS) algorithm

## REVIEWER ACTIVITIES

---

### International Journal

- IEEE Transactions on Circuits and Systems for Video Technology (TCSVT)
- IEEE Transactions on Audio, Speech, and Language Processing (TASLP)

### International Conference

- Computer Vision and Pattern Recognition (CVPR)
- International Conference on Computer Vision (ICCV)

## PROGRAMMING SKILLS

---

### Languages

- C/C++, Python, and MATLAB

### Deep Learning Libraries

- Pytorch, Tensorflow, and Keras

## AWARDS & HONORS

---

**KAIST Fellowship**

*2019 - Present*

**The World Embedded software Contest**

*2017*

- Finalist with AI six-legged robot 'Homecoming'