

Byeonghyun Pak

Location: Daejeon, South Korea | **Email:** byeonghyun.pak@gmail.com | **Website:** byeonghyunpak.github.io

Google Scholar: scholar.google.com/byeonghyunpak | **Github:** github.com/ByeongHyunPak

Education

Daegu Gyeongbuk Institute of Science and Technology (DGIST) <ul style="list-style-type: none">B.S. in Engineering (Interdisciplinary Program)Concentration in Computer Science & Engineering	Mar 2019 – Feb 2023 Daegu, South Korea
University of California, Berkeley (UCB) <ul style="list-style-type: none">Visiting Student (Freshman Global Leadership Program)	Jul 2019 – Aug 2019 Berkeley, CA, USA

Publications

*: Equal Contribution

[C3] **Tortoise and Hare Guidance: Accelerating Diffusion Model Inference with Multirate Integration**

Yunghye Lee, **Byeonghyun Pak**, Junwha Hong, Hoseong Kim

Neural Information Processing Systems (NeurIPS), 2025

[C2] **Textual Query-Driven Mask Transformer for Domain Generalized Segmentation**

Byeonghyun Pak*, Byeongju Woo*, Sunghwan Kim*, Dae-hwan Kim, Hoseong Kim

European Conference on Computer Vision (ECCV), 2024

[C1] **B-spline Texture Coefficients Estimator for Screen Content Image Super-Resolution**

Byeonghyun Pak*, Jaewon Lee*, Kyong Hwan Jin

Computer Vision and Pattern Recognition (CVPR), 2023 — **Highlight Paper, top 2.5%**

Work/Research Experience

Republic of Korea Army (ROKA) <i>First Lieutenant (active duty; attached to Agency for Defense Development)</i> <ul style="list-style-type: none">Selected as one of 20 research officers nationwide dedicated to STEM research for national defensePlanned and executed EO/IR field data collections enabling reliable IR detection evaluation	Mar 2023 – Present Daejeon, South Korea
--	--

Agency for Defense Development <i>Research Officer for National Defense (ROND)</i> <ul style="list-style-type: none">Project: Synthetic-to-Real Domain Generalization for Military Object Detection<ul style="list-style-type: none">Researched domain generalization for reliable infrared imagery object detection in data-scarce settingsImproved synthetic-to-real robustness by integrating pre-trained vision-language models (VLMs)1 Publication in ECCV 2024 [project page]Project: Synthetic Dataset Generation for Air Defense System<ul style="list-style-type: none">Constructed synthetic datasets for rare/low-visibility targets via image/video diffusion modelsAccelerated the generation pipeline by $\approx 30\%$ with a novel multi-rate integration method1 Publication in NeurIPS 2025	Mar 2023 – Present Daejeon, South Korea
--	--

Image Processing Laboratory @ DGIST <i>Undergraduate Research Intern (advisor: Prof. Kyong Hwan Jin)</i> <ul style="list-style-type: none">Researched implicit neural representations (INRs) for solving inverse problems (e.g., super-resolution)Project: Image Super-resolution for Screen-Content Images	Dec 2021 – Feb 2023 Daegu, South Korea
---	---

- Developed INR-based super-resolution with emphasis on screen-content characteristics and edge fidelity
- Built a **B-spline INR-based SR pipeline** specialized for screen content
- 1 Publication in CVPR 2023 (Selected as highlight paper) [[project page](#)]

Honor & Awards

Korea National Scholarship of Excellence in Science and Technology Mar 2021 – Feb 2022

- National selection: 1 of 20 Research Officers nationwide (1 of 4 in CSE) for defense science & technology R&D

Korea National Scholarship for Undergraduate Study Mar 2019 – Feb 2023

- Received national scholarship includes full tuition and stipend

Korea Military Academy Superintendent's Award Dec 2021

- Award for Excellence in National Defense Research Projects
- *Topic: A Study on the Application of Attention Module for Object Tracking Performance Improvement*

1st Place—FriendliAI LLM Hackathon May 2024

- *Topic: Knowledge Graph-based RAG (Retrieval-Augmented Generation) model*

Patents

B. Pak et al., System for B-Spline Texture Coefficient Estimation and Method for Generating High-Resolution Images Using the Same. **KR 10-2730236** (reg. 2024.11.11).

Academic Services

Conference Reviewer

- Neural Information Processing Systems (NeurIPS) 2025

Skills

Programming Languages: Python, C/C++, JavaScript, MATLAB

Frameworks & Tools: PyTorch, TensorFlow, NumPy, Docker, Git, OpenCV, OpenGL, Open3D, ManiSkill

References

Prof. Kyong Hwan Jin, Associate Professor at Korea Univ.

- Email: kyong_jin@korea.ac.kr

Dr. Eunjin Koh, Principal Researcher at ADD

- Email: eikoda@add.re.kr

Dr. Hoseong Kim, Senior Researcher at ADD

- Email: hoseongkim@add.re.kr