

Jeongsoo Kim

Independent Researcher

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Education

Sogang University, Department of Computer Science and Engineering

Seoul, South Korea

M.S. in Computer Science and Engineering

Sep. 2022 - Aug. 2024

Thesis: A Vision Transformer with Multi-level Fusion of Local and Global Attention Information for Image Upscaling

Advisor: Jongho Nang

Sogang University, Department of Computer Science and Engineering

Sogang University, Department of Chinese Culture Seoul

Seoul, South Korea

B.S. in Computer Science and Engineering, Chinese Culture

Mar. 2015 - Aug. 2022

RESEARCH INTEREST

- **Efficient Deep Learning & Vision Backbones** : Focuses on identifying and alleviating architectural bottlenecks in modern vision models. Specialized in optimizing memory efficiency (e.g., VRAM reduction) and inference speed for resource-constrained environments. Currently conducting comparative error-analysis across CNNs, ViTs, and State Space Models (Mamba) to understand their distinctive inductive biases and behavioral characteristics.
- **Representation Editing & Parameter-Efficient Fine-Tuning (PEFT)** : Investigating efficient knowledge and behavior editing in large-scale vision foundation models (e.g., CLIP) without full-parameter retraining. Focused on leveraging modular architectures like adapters or prompt-tuning to perform representation unlearning. Specifically exploring orthogonal feature decomposition mechanisms within PEFT frameworks to isolate and eliminate domain bias, achieving domain-agnostic semantic alignment.

PUBLICATION

- **Jeongsoo Kim**. "CUST : Clustered Unit-level Similarity Transformer for Lightweight Image Super Resolution", *European Conference on Computer Vision (ECCV)*, 2026. [[arXiv](#)][[code](#)]
- **Jeongsoo Kim**, Jongho Nang, Junsuk Choe. "LMLT: Low-to-high Multi-Level Vision Transformer for Image Super-Resolution", *Workshop of International Conference on Computer Vision (ICCV WS)*, 2025. [[arXiv](#)][[code](#)]

- **Jeongsoo Kim**, Juntae Kim, Sungwon Woo, Jongho Nang. "Experiment with Channel-wise Self Attention for Image Classification", *Korea Computer Congress 2023*, Korean Institute of Information Scientists and Engineers, pp. 913-915, Dec 2023.
- Gysik Choi, **Jeongsoo Kim**, Jongho Nang. "Shop Signboard Matching by Image Feature Matching", *Korea Computer Congress 2023*, Korean Institute of Information Scientists and Engineers, pp. 967-969, Jun 2023.
- Wonil Lee, **Jeongsoo Kim**, Jongho Nang. "A Shop Signboard Instance Image Retrieval using Deep-Learning Feature Vector", *Korea Computer Congress 2023*, Korean Institute of Information Scientists and Engineers, pp. 959-961, Jun 2023.
- **Jeongsoo Kim**, Hyungyoun Na, Sungwon Woo, Jongho Nang. "A Design of Training Dataset Structure for Extracting Various Information from Shop Sign using Deep Learning and Its Experiments", *Korea Computer Congress 2022*, Korean Institute of Information Scientists and Engineers, pp. 743-745, Dec 2022.

Academic Services

- **Journal Reviewer** : TIP

LANGUAGE

- English (TOEFL 94 , OPIC IH)
- Japanese (JLPT N1)
- Korean (Native)
- Chinese (HSK 6-level)

SKILLS AND TECHNIQUES

- **Programming Language** : Python, C, C++, Java
- **Machine Learning Tools** : Pytorch, Numpy
- **Tools** : Github, Notion

TEACHING ASSISTANT

- Data Structure (Sep 2023)
- Machine Learning I (Mar 2023)
- Tensorflow Basic (Mar 2023)
- Software Engineering (Mar 2023)
- Software Architecture (Mar 2023)
- Window Forensics (Mar 2023)
- Introduction of Audio Signal Processing (Mar 2023)
- Data Structure (Sep 2022)