Gwanghan Lee

Website: https://lee-gwang.github.io
Email: icanlgh0016@gmail.com

EDUCATION

Sungkyunkwan University (SKKU) **Suwon, Korea**
MS in *Department of Artificial Intelligence* *03/2020 – 08/2023 (anticipated graduation)*

Konkuk University **Seoul, Korea**
BS/MS in *Organic and Nano System Engineering* *03/2021 – 02/2019*

PUBLICATIONS

International Conference

1. **"A-ColViT: Real-time Interactive Colorization by Adaptive Vision Transformer."**
   Gwanghan Lee*, Saebyeol Shin*, Donggeun Ko, and Simon S. Woo.
   International Workshop on Practical Deep Learning in the Wild at AAAI, 2023.
2. **"Accelerating CNN via Dynamic Pattern-based Pruning Network."**
   Gwanghan Lee, Saebyeol Shin, and Simon S. Woo.
   ACM International Conference on Information & Knowledge Management (CIKM), 2022.
3. **"EMGNet: Efficient Multi-Scale Feature Generation Adaptive Network."**
   Gwanghan Lee, Minha Kim, Minha Kim, and Simon S. Woo.
   International Conference on Information and Knowledge Management (CIKM), 2021.
4. **"Exploring Group Sparsity using Dynamic Sparse Training"**
   Geunhye Jo, Gwanghan Lee, and Dongkun Shin.
   IEEE International Conference on Consumer Electronics Asia (ICCE-Asia), 2020.

International Journal

1. **"Development of fashion recommendation system using collaborative deep learning"**
   Gwanghan Lee*, Sungmin Kim*, and Chang Kyu Park*.
   International Journal of Clothing Science and Technology (IF = 1.15), 2022.

Domestic Conference

1. **"Efficient Multi-Scale Feature Generation Network."**
   Gwanghan Lee, Saebyeol Shin, and Simon S. Woo.
   Korea Computer Congress (KCC), 2022.
2. **"Gradual Group-level Pruning with Dynamic Sparse Training"**
   Gwanghan Lee, and Dongkun Shin.
   Korea Computer Congress (KCC), 2020.

* Equal contributions

WORK EXPERIENCE

SK Telecom AI Fellowship **Pangyo, Korea**
Research Intern *06/2022 – 10/2022*

- Developed user-interactive, context/instance adaptive colorization model to colorize and restore grayscale images of historically significant events in Korea such as independence movements, Korean War, and democratization protests.
- Won an order for the 3rd year project to restore the old image from the Jeollanam-do Provincial Office supervised by the Ministry of Culture, Sports and Tourism.
- Published 1 conference paper and 1 patent during the project.

PROJECT EXPERIENCE

Restoring grayscale images of Korean War Veterans using AI Technology **MPVA**
Research on Image Colorization & Super Resolution (MOU project) *02/2023 – Current*
- Developing AI technology for restoring historical images.

Object Detection in Satellite Images **Hanwha System / ICT**
Industry-Academic Cooperation Researcher *05/2022 – 11/2022*
- Contributed to the development of a rotated object detection network on satellite datasets.

Solving Mathematical Problems using NLP Technology **IITP**
Research on model compression *07/2021 – 05/2022*
- Constructed efficient deep learning models to solve mathematical problems that understands the context of natural language with improved inference speed compared to existing deep learning models.

Software Framework for Intelligent IoT Devices **IITP**
Research on model compression *03/2020 – 01/2021*
- Contributed to the development of efficient network. (pruning, knowledge distillation, optimization)

AWARDS AND HONORS

International Awards
- **Gold medal (9th/828), Sound Classification,** BirdCLEF 2022 — Kaggle, *2022*
- **Silver medal (21st/1565), Image Segmentation,** UW-Madison GI Tract Image Segmentation — Kaggle, *2022*
- **Silver medal (41st/874), Image Captioning,** Bristol-Myers Squibb – Molecular Translation — Kaggle, *2021*
- **Bronze medal (137th/1636), Regression,** COVID-19 mRNA Vaccine Degradation Prediction — Kaggle, *2020*
- **Bronze medal (243th/2618), Classification,** University of Liverpool - Ion Switching — Kaggle, *2020*
- **Bronze medal (113th/1538), Object Detection,** Understanding Clouds from Satellite Images — Kaggle, *2019*

Domestic Awards
- **2nd Place, Image Colorization**, SKT AI Fellowship — SKT, *2022*
- **1st Place, Super Resolution,** Camera Image Quality Improvement AI Competition — LG AI Research, *2021*
- **1st Place, Object Detection,** SKT CCTV Security Video Image Object Detection — SKT, *2021*
- **1st Place, Video Classification,** 2021 Pangyo AI Challenge — AICONNECT, *2021*
- **1st Place, Topic Classification,** News topic classification using KLUE data — DACON, *2021*
- **2nd Place, Anomaly Detection,** Electrical energy quality classification AI Contest — NIPA, *2021*
- **2nd Place, Image Classification,** Ego-Vision Hand Gesture Recognition AI Competition — NIA/DACON, *2021*
- **Awards (KRW 273M in support),** 2021 AI Grand Challenge 5th — IITP, *2021*
- **3rd Place, Regression,** Collider detection AI contest using vibration data — KAERI/DACON, *2020*
- **2nd Place, Regression,** Bio-Optical Data Analysis AI Contest — AI i-CON/DACON, *2020*
- **3rd Place, Regression**, AI Challenge for temperature estimation using public data — KIMM/DACON, *2020*
- **2nd Place, Regression,** Jeju BigData Competition — JTP/DACON, *2019*
- **3rd Place (leaderboard 5th), Recommender System,** Kakao brunch article recommendation — KAKAO, *2019*

Scholarships
- SKKU Best Paper Scholarship — *2022*

- SKKU Academic Excellence Scholarship 2022
- SKKU Best Paper Scholarship *2021*
- SKKU Academic Excellence Scholarship 2021

TEACHING EXPERIENCE

Undergraduate Research Program **Seoul, Korea**

Deeplearning Project Mentort *03/2021 – 12/2021*

- Lecture on the entire pipeline from image pre-processing, modeling, and post-processing.
- A Guide to Deepfake Detection Research.
- A Guide to Efficient Deepfake Detection Research.

PROFICIENCY IN SKILLS

Programming/Framework: Python, Pytorch, LaTeX (all advanced)
Languages: Korean (native fluency)