MYUNGSEO SONG

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RESEARCH INTERESTS

Machine learning and computer vision, focusing on learning generalizable and robust representations under distribution shifts and minimal human supervision. I am especially interested in vision-language models and multimodal learning for visual reasoning. My ultimate goal is to build reliable multimodal intelligence systems that can reason about the physical world and interact with humans.

EDUCATION

Seoul National University Mar 2018 - Feb 2026 (Expected)
B.S. in Computer Science and Engineering (GPA: 3.75/4.30) *Seoul, Korea*
* Includes three-year mandatory military service in South Korea.

PUBLICATIONS

(*Equal contribution is denoted by "*".*)

[1] **Myungseo Song**, Jin-Woo Park, Jong-Seok Lee, "Exploring the Camera Bias of Person Re-identification," *International Conference on Learning Representations (ICLR)*, 2025. (Spotlight paper, Accept. rate $< 5\%$)

[2] **Myungseo Song**, Jinyoung Choi, Bohyung Han, "A Training-Free Defense Framework for Robust Learned Image Compression," *arXiv Preprint*, 2024.

[3] *Seongyeon Park, ***Myungseo Song**, Bohyung Kim, Tae-Hyun Oh, "Unsupervised Pre-training for Data-Efficient Text-to-Speech on Low Resource Languages," *IEEE International Conference on Acoustics, Speech, and Signal Processing (ICASSP)*, 2023.

[4] ***Myungseo Song**, *Seongyeon Park, Bohyung Kim, Tae-Hyun Oh, "Speech De-warping: Unsupervised Pre-training for Data-Efficient Text-to-Speech on Low Resource Languages," *International Conference on Machine Learning (ICML) Workshop on Machine Learning for Audio Synthesis*, 2022. (Oral presentation)

[5] **Myungseo Song**, Jinyoung Choi, Bohyung Han, "Variable-Rate Deep Image Compression through Spatially-Adaptive Feature Transform," *IEEE/CVF International Conference on Computer Vision (ICCV)*, 2021.

WORK EXPERIENCE

Lead Machine Learning Researcher Nov 2023 - May 2025
mAy-I, Inc. *Seoul, Korea*

- Analyzed camera bias in person re-identification under domain shifts and unsupervised learning, revealing why feature normalization mitigates spurious correlations; **ICLR 2025 (Spotlight)**.
- Improved person re-identification performance by 29.2% mAP on private benchmarks, directly enhancing CCTV-based visitor analytics product.
- Built and curated large-scale weakly-labeled datasets (1M+ images over 10K identities) from diverse real-world CCTV environments, enabling extensive model training and evaluation.
- Promoted within one year to lead research team of five members, directing projects on object detection, multi-camera people tracking, and gender/age estimation.
- Worked as part of mandatory military service.

Machine Learning Researcher Oct 2021 - Oct 2023
CNAI, Inc. *Seoul, Korea*

- Conducted research on label-efficient text-to-speech (TTS), proposing unsupervised pre-training and data augmentation approaches; **ICML 2022 Workshop (Oral) and ICASSP 2023**.
- Developed few-shot audio-driven talking face generation models and constructed large-scale, high-resolution audio-visual datasets of human speech through in-house studio and crowdsourcing.
- Constructed large-scale 3D food detection dataset using RGB-D sensor (Azure Kinect) and developed monocular 3D object detection model.
- Worked as part of mandatory military service.

Research Intern Sep 2020 - Sep 2021
Computer Vision Lab at Seoul National University *Seoul, Korea*

- Advisor: Prof. Bohyung Han.
- Designed neural image compression framework conditioned on quality map, enabling task-aware compression without task-specific training; **ICCV 2021**.
- Analyzed robustness of neural image compression against adversarial attacks and proposed training-free defense method leveraging self-supervised nature of compression; arXiv preprint.

Research Intern Jul 2020 - Aug 2020
NCSOFT, Inc. *Seongnam, Korea*

- Conducted research on few-shot, unsupervised image-to-image translation models based on GANs.
- Constructed large-scale image datasets for model training and evaluation using web crawling.

Software Engineering Intern Jan 2020 - Feb 2020
Intellisys, Inc. *Seoul, Korea*

- Developed web crawling-based data collection pipeline and data management system.

OTHER PROJECTS

Undergraduate Research Opportunity Program (UROP) Mar 2020 - Jun 2020
Data Mining Lab at Seoul National University *Seoul, Korea*

- Advisor: Prof. U Kang.
- Conducted research on RNN-based sequential recommender system for E-commerce.

SCHOLARSHIPS

Youlchon AI Young Researcher, Youlchon Foundation & SNU AI Institute Aug 2025
Jung-Hun Scholarship, Jung-Hun Foundation Apr 2019

SKILLS

Programming Languages: Python, Java, C/C++
Deep Learning Frameworks: PyTorch, TensorFlow
Libraries & Tools: Numpy, Pandas, OpenCV, Git, Docker
Languages: English (Fluent), Korean (Native)

ACADEMIC SERVICE

Reviewer

- Journal: TIP (2023)
- Conference: ICLR (2025), NeurIPS (2024-2025), WACV (2023)