

# MYUNGSEO SONG

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## RESEARCH INTERESTS

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My research interests span computer vision and machine learning, with focus on learning generalizable and efficient representations under minimal supervision. I'm particularly interested in vision-language models and their extensions to 3D scene and video domains for richer perception and reasoning. Ultimately, I aim to build multimodal intelligence systems that can reason about the physical world and interact with humans, with real-world applications such as embodied AI.

## EDUCATION

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**Seoul National University**

Mar 2018 - Feb 2026 (Expected)

B.S. in Computer Science and Engineering (GPA: 3.75/4.30)

Seoul, Korea

\* Includes 34-month mandatory military service in South Korea.

## PUBLICATIONS

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(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

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**Lead Machine Learning Researcher**

Nov 2023 - May 2025

mAy-I, Inc.

Seoul, Korea

- Analyzed camera bias in person re-identification under domain shifts and risks of biased pseudo labels in unsupervised learning, suggesting bias mitigation methods; **ICLR 2025 (Spotlight)**.
- Improved person re-identification accuracy by +29.2% mAP on private benchmarks, directly enhancing CCTV analytics product.
- Built and curated large-scale weakly-labeled datasets (1M+ images) from 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 tracking, and gender/age estimation.
- Worked as part of mandatory military service.

**Machine Learning Researcher**  
CNAI, Inc.

Oct 2021 - Oct 2023  
*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**  
Computer Vision Lab in Seoul National University

Sep 2020 - Sep 2021  
*Seoul, Korea*

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

**Research Intern**  
NCSOFT, Inc.

Jul 2020 - Aug 2020  
*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**  
Intellisys, Inc.

Jan 2020 - Feb 2020  
*Seoul, Korea*

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

## OTHER PROJECTS

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**Undergraduate Research Opportunity Program (UROP)**  
Data Mining Lab in Seoul National University

Mar 2020 - Jun 2020  
*Seoul, Korea*

- Advisor: Prof. U Kang.
- Conducted research on neural collaborative filtering and multi-behavior recommender system for E-commerce.

## SCHOLARSHIPS

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**Youlchon AI Young Researcher**, Youlchon Foundation & SNU AI Institute  
**Jung-Hun Scholarship**, Jung-Hun Foundation

Aug 2025  
Apr 2019

## SKILLS

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**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

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**Reviewer**

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