

# MYUNGSEO SONG

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## RESEARCH INTERESTS

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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

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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 three-year 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**

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

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

#### 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

**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)