

JUNIK BAE

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EDUCATION

Bachelor of Computer Science and Engineering, **Seoul National University**

2019 - Current

GPA: 4.08 / 4.30 (Overall), 4.09 / 4.30 (Major)

Leave of absence for military service: Feb 2021 - Nov 2022

PUBLICATIONS

- [TLDR: Unsupervised Goal-Conditioned RL via Temporal Distance-Aware Representations](#)
Junik Bae, Kwanyoung Park, Youngwoon Lee
Conference on Robot Learning (CoRL), 2024
- [Exploiting Semantic Reconstruction to Mitigate Hallucinations in Vision-Language Models](#)
Minchan Kim*, Minyeong Kim*, **Junik Bae***, Suhwan Choi, Sungkyung Kim, Buru Chang
European Conference on Computer Vision (ECCV), 2024

RESEARCH INTEREST

My research goal is to enable autonomous learning of complex and emergent behaviors with minimal human supervision. Particularly, my interests include **Unsupervised reinforcement learning**, **Unsupervised skill discovery**, and **Goal-conditioned reinforcement learning**.

AWARDS AND HONORS

- **1st Place, 2022 Military AI Competition** Nov 2022 - Dec 2022
Awarded by Korean Minister of Science and Technology (과학기술부장관상), ₩20,000,000 (≈ \$15,000)
Preliminary Task: Change detection on buildings in aerial image data
Final Task: Image denoising for all-weather operations
- **2nd Place, 2022 Korean AI Competition** Aug 2022 - Sep 2022
Awarded by Korean Minister of Science and Technology (과학기술부장관상), ₩10,000,000 (≈ \$7,500)
Task: Speech recognition on free, dialect Korean speech datasets
- **2nd Prize, Product Recognition Challenge on Self-service Stand** Sep 2021 - Oct 2021
Awarded by Chairman of Electrical and Computer Engineering Department at SNU
Task: High-precision-and-speed object detection on self-service stand images
- **Semiconductor Track Scholarship** March 2024 - Current
Scholarship from Seoul National University Semiconductor Specialization School
- **Samhwa Jibong Scholarship** March 2023 - Feb 2024
Scholarship from Samhwa Jibong Scholarship Foundation
Full Tuition

EXPERIENCE

Research Intern

Jan 2024 - Current

Yonsei Robot Learning Lab (Advisor: Prof. Youngwoon Lee)

- Worked on our novel Unsupervised Goal-conditioned RL method, TLDR, which outperforms previous unsupervised RL methods in complex environments including AntMaze.
- Working on a follow-up project of TLDR.

Research Intern

July 2023 - Nov 2023

SNU Vision and Learning Lab (Advisor: Prof. Gunhee Kim)

- Created a demo 3D meshed face animation using face generation models. Developed scene boundary classification and scene summary generation pipeline using visual video scene segmentation model and ChatGPT used in [MBC broadcast show](#).
- Ideated and developed a lifelong evaluation pipeline for Retrieval-Augmented Generation models with frequently updating text data stream.

Research Intern

Jan 2023 - Feb 2023

Naver Cloud (Formerly Naver Clova) Speech Synthesis & Voice Conversion Team

- Presented a 5-week seminar series titled “[Denoising Diffusion Generative Models and its applications to TTS](#)” to the research team members.
- Implemented a [SOTA TTS model](#) and adapted it for use with proprietary Korean speech data.

Specialty in Software Development

Feb 2021 - Nov 2022

Republic of Korea Air Force

- Focused on developing vision-based detection and segmentation models.

PROJECTS

- **TTS Model Implementation. (450+ stars)** Implemented Microsoft’s [NaturalSpeech: End-to-End Text to Speech Synthesis with Human-Level Quality](#), which is a SOTA model in the LJ Speech Dataset. This is the first and the only public implementation to the best of my knowledge. ([github](#))
- **Open source contribution.** Contributed to [huggingface/transformers](#) by fixing errors in the weights conversion script: [PR #19508](#).