

# Daewon Chae

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🌐 <https://daewon88.github.io/>

## Research Interest

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My long-term research goal is to develop capable and robust AI agents. To achieve this, my current research focuses on advancing generative foundation models, such as large language models (LLMs) and text-to-image diffusion models. Specifically, I have focused on exploring the property of generative modeling (e.g., next-token prediction) and developing effective post-training methods (e.g., RL fine-tuning) for generative foundation models.

## Education

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**University of Michigan, Ann Arbor**

Sep. 2025 - Present

*Ph.D. in Electrical and Computer Engineering (Advisor: Prof. Hunseok Kim)*

**Korea University**

Mar. 2023 - Aug. 2025

*M.S. in Computer Science and Engineering (Advisor: Prof. Jinkyu Kim)*

**Korea University**

Mar. 2017 - Aug. 2022

*B.S. in Electrical Engineering*

## Publications

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\* : equal contributions

- **ENTP: Encoder-only Next Token Prediction**

Ethan Ewer\*, Daewon Chae\*, Thomas Zeng\*, Jinkyu Kim, Kangwook Lee

*Transactions on Machine Learning Research (TMLR)*, 2025

*NeurIPS Workshop on What Can('t) Transformers Do? (Spotlight Presentation)*, 2025

- **Hard-Negative Prototype-Based Regularization for Few-Shot Class-Incremental Learning**

Seongbeom Park, Hyunju Yun, Daewon Chae, Sungyoon Kim, Suhong Moon, Minwoo Kang, Seunghyun Park, Jinkyu Kim

*Transactions on Machine Learning Research (TMLR)*, 2025

- **A Training-Free Approach for Handling Loosely Aligned Visual Conditions in ControlNet**

Woosung Joung\*, Daewon Chae\*, Jinkyu Kim

*British Machine Vision Conference (BMVC)*, 2025

- **VersaPRM: Multi-Domain Process Reward Model via Synthetic Reasoning Data**

Thomas Zeng, Shuibai Zhang, Shutong Wu, Christian Classen, Daewon Chae, Ethan Ewer, Minjae Lee, Heeju Kim, Wonjun Kang, Jackson Kunde, Ying Fan, Jungtaek Kim, Hyung Il Koo, Kannan Ramchandran, Dimitris Papailiopoulos, Kangwook Lee

*International Conference on Machine Learning (ICML) (Oral Presentation)*, 2025

- **DiffExp: Efficient Exploration in Reward Fine-tuning for Text-to-Image Diffusion Models**

Daewon Chae\*, June Suk Choi\*, Jinkyu Kim, Kimin Lee

*AAAI Conference on Artificial Intelligence (AAAI) (Oral Presentation)*, 2025

- **Scene Graph-Guided Proactive Replanning for Failure-Resilient Embodied Agent**

Che Rin Yu, Daewon Chae, Dabin Seo, Sangwon Lee, Hyeonwoo Im, Jinkyu Kim

*RSS Workshop on Semantic Reasoning and Goal Understanding in Robotics (RSSW)*, 2024

- **InstructBooth: Instruction-following Personalized Text-to-Image Generation**

Daewon Chae, Nokyoung Park, Jinkyu Kim, Kimin Lee

*ICML Workshop on Foundation Models in the Wild (ICMLW)*, 2024

- **Clustering-based Image-Text Graph Matching for Domain Generalization**

Nokyung Park, Daewon Chae, Jeongyong Shim, Sangpil Kim, Eun-Sol Kim, Jinkyu Kim  
*International Conference on Pattern Recognition (ICPR), 2024*

- **Text-driven Prototype Learning for Few-Shot Class-Incremental Learning**

Seongbeom Park\*, Haeji Jung\*, Daewon Chae, Hyunju Yun, Sungyoon Kim, Suhong Moon, Seunghyun Park, Jinkyu Kim  
*International Conference on Pattern Recognition (ICPR), 2024*

- **Re-ID Technology for V2I based Cooperative Driving Protocol**

Junhyek Jang, Kitaeg Lim, Sanghun Yoon, Daewon Chae, Soohyun Jang  
*International Conference on Ubiquitous and Future Networks (ICUFN), 2023*

## Experience

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<b>University of Wisconsin-Madison, Lee Lab</b> Visiting Researcher (Advisor: Prof. Kangwook Lee)	Jul. 2024 - Sep. 2024
<b>Korea Electronics Technology Institute</b> Assistant Researcher (Mentor: Soohyun Jang)	Oct. 2022 - Feb. 2023
<b>NAVER Clova, High-quality DNN Text-to-Speech (HDTS) Team,</b> Research Intern (Mentor: Eunwoo Song)	Sep. 2021 - Feb. 2022
<b>Seoul National University, Music and Audio Research Group</b> Research Intern (Mentor: Juheon Lee)	Dec. 2020 - Feb. 2021

## Honors and Awards

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### Scholarship

<b>Hyundai On-dream Future Industrial Talent Scholarship</b> Hyundai Motor Chung Mong-Koo Foundation ◦ Full tuition and living expenses support for graduate studies	2023 - 2024
<b>Cheonman Scholarship</b> Cheonman Scholarship Foundation ◦ Full tuition and living expenses support for undergraduate studies	2017 - 2022

### Awards

<b>Image Sound matching AI Competition, 2nd place</b> (\$1500 as awards) National Information Society Agency (NIA)	2022
<b>Korean STT AI Competition, 5th place</b> (\$3000 as awards) National Information Society Agency (NIA) and Hyundai Motor	2022
<b>Multi-Camera Multi-Object Tracking Challenge, 3rd place</b> (\$500 as awards) Korean Conference on Computer Vision (KCCV) Workshop organized by 42dot	2022

## Teaching & Leadership Experience

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<b>Teaching Assistant:</b> Data Science (COSE471), Korea University	Spring 2023
<b>Club President:</b> EE programming club (One and Zero), Korea University	2020 - 2021

## Academic Services

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**Reviewer:** CoRL2025, ICML2025, NeurIPS 2025, AISTATS 2025,