DONGHYEON SHIN

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Personal Statement
Research professional specializing in Natural Language Processing and Reinforcement Learning. Currently contributing to the World Best LLM project at LG AI Research. Research interests include LLM reasoning, value alignment, and safety, with a focus on advancing towards Artificial General Intelligence through enhanced reasoning capabilities and robust alignment mechanisms.

EDUCATION & PROFESSIONAL EXPERIENCE

LG AI Research *March 2026 - Present*
Research Intern

· Participating in the World Best LLM project

Gwangju Institute of Science and Technology(GIST) *March 2024 - February 2026*
Master of Science (M.S.) in Artificial Intelligence / AI Researcher

· Overall GPA: 4.08/4.50
· Conducting research on reasoning in LLMs, with a focus on reinforcement learning-based enhancement and test-time reasoning strategies.
· Researched the emergence of gambling addiction symptoms in LLMs, drawing parallels with human psychology - **Under Review (2025)**
· Researched the reasoning ability of LLMs using the ARC benchmark - **ACM TIST (2025)**
· Proposed a new benchmark called MC-LARC - **EMNLP Findings (2024)**

Gwangju Institute of Science and Technology(GIST) *March 2023 - February 2024*
Undergraduate Internship

· Tried to solve Abstraction and Reasoning Corpus benchmark using Skill-based Reinforcement Learning

Gwangju Institute of Science and Technology(GIST) *March 2018 - February 2024*
Bachelor's Degree

· Major in Electrical Engineering and Computer Science
· Minor in Mathematics
· Overall GPA: 3.71/4.50

UC Berkeley *June 2019 - August 2019*
Berkeley Summer Session Program

· Overall GPA: 4.00/4.00

ACADEMIC ACTIVITIES

Publications

· Marha Midhatiey Rusli, **Donghyeon Shin**, Sejin Kim, and Sundong Kim, *Tracing and Correcting Programs: Critic-Guided Synthesis for Visual Reasoning*, **AAAI-26 Bridge Program: Logical and Symbolic Reasoning in Language Models** (2026)

· Seungpil Lee, **Donghyeon Shin**, Yunjeon Lee, and Sundong Kim, *Can Large Language Models Develop Gambling Addiction?*, **arXiv:2509.22818** (2025)

· Seungpil Lee*, Woochang Sim*, **Donghyeon Shin***, Sanha Hwang, Wongyu Seo, Jiwon Park, Seokki Lee, Sejin Kim, and Sundong Kim, *Reasoning Abilities of Large Language Models: In-Depth Analysis on the Abstraction and Reasoning Corpus*, **ACM TIST** (2025)

· **Donghyeon Shin***, Seungpil Lee*, Klea Lena Kovačec, and Sundong Kim, *From Generation to Selection: Findings of converting Analogical Problem-Solving into Multiple-Choice Questions*, **EMNLP Findings** (2024)

· **Donghyeon Shin**, Seungpil Lee, Klea Lena Kovačec, and Sundong Kim, *Regulation Using Large Language Models to Generate Synthetic Data for Evaluating Analogical Ability*, **IJCAI Workshop** (2024)

· **Donghyeon Shin**, Sanha Hwang, Seokki Lee, Yunho Kim, Seungpil Lee, and Sundong Kim, *MC-LARC Benchmark to Measure LLM Reasoning Capability*, **Korea Software Congress** (2023)

· Jaehyun Park, Jagyun Im, Youngdo Lee, **Donghyeon Shin**, Sejin Kim, and Sundong Kim, *Abstraction and Reasoning Challenge with Decision Transformer*, **Korea Computer Congress** (2023)

· Jinseong Son, **Donghyeon Shin**, and Chi-Ok Hwang, *Walk-on-Hemispheres First-Passage Algorithm*, **Scientific Reports** (2023)

SKILLS

Computer Languages	C++, Python
Software & Tools & Framework	LaTeX, Figma, PyTorch, MCP
Language	Korean(Native Language), English(Intermediate)

FUNDING & SCHOLARSHIP

National Research Foundation of Korea Funding, NRF *July 2024 - June 2025*

· Awarded research funding of ₩12,000,000 as a master's student through the National Research Foundation of Korea (NRF)

Korean Government Scholarships, GIST College *March 2024 - February 2026*

· Scholarship awarded to graduate students studying at GIST

Korean Government Scholarships, GIST College *March 2018 - February 2024*

· Scholarship awarded to undergraduate students studying at GIST

Scholarship for Summer Session Abroad *June 2019 - August 2019*

· Scholarship awarded to students studying abroad during a summer session

TEACHING EXPERIENCE

TA for Computer Networking Course
Teaching Assistant *Spring Semesters 2023, 2024, 2025*

· Hosted Q&A sessions to provide academic support.
· Graded homework assignments and exams.

- Contributed to the development of new course assignments.
- Proctored mid-term and final examinations.
- Planned and recorded supplementary lab video sessions.

TA for Signals and Systems
Teaching Assistant *Fall Semesters 2024*

- Hosted Q&A sessions to provide academic support.
- Graded homework assignments.
- Proctored mid-term and final examinations.

EXTRA-CURRICULAR

Machine Learning & Deep Learning Study Group *Summer 2023*
Leader

- Studied *An Introduction to Statistical Learning* (Gareth James et al.)

PyTorch Study Group *Fall 2023*
Leader

- Focused on hands-on implementation and model training using PyTorch.

Reinforcement Learning Study Group *Fall–Winter 2023*
Leader

- Studied *Reinforcement Learning: An Introduction* (Richard S. Sutton and Andrew G. Barto)

Academic Writing Study Group *Summer 2024*
Leader

- Studied academic writing through research paper reading and practice.

Convex Optimization Study Group *Summer–Fall 2024*
Leader

- Studied *Convex Optimization* (Stephen Boyd and Lieven Vandenberghe)

Linear Algebra Study Group *Winter 2024*
Leader

- Studied *Linear Algebra* (Stephen H. Friedberg, Arnold J. Insel, and Lawrence E. Spence)

Math for Machine Learning Study Group *Summer 2025*
Leader

- Studied *Mathematics for Machine Learning* (Marc Peter Deisenroth, A. Aldo Faisal, and Cheng Soon Ong)