Jeong-Hwan Lee

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RESEARCH INTERESTS

My long-term goal is to develop general-purpose robots using world-model-based prediction and action planning. In particular, I am interested in:

- World Models
- Action Planning
- Reinforcement Learning for Robotics

EDUCATION

Catholic university of Korea (Transfer) *2025 March – Present*

B.S. in Artificial Intelligence

Woosong University *2020 March – 2025 March*

B.S. in Computer and Information Security

Leave of absence of military service: 2023 Feb – 2024 July

Woosong Scholarship Program Recipient *2022 March – 2023 Feb*

Nominated as a high-leadership potential applicant and awarded for a global leadership development

RL PREPARATION

Berkeley CS285, Deep Reinforcement Learning *2025 December – Present*

- Completed 20 lectures and programming assignments up to HW3
- Actively working through the full lecture series and programming assignments, with structured summaries and implementations maintained in a public GitHub repository.

GitHub: https://github.com/go2gym365/RL_study/tree/main/berkeley_CS285

Paper reading

- Studied recent research papers on world models, reinforcement learning, and action planning, with structured summaries and conceptual breakdowns (e.g., DreamSmooth)

GitHub (Paper notes): https://github.com/go2gym365/RL_study/tree/main/paper

PUBLICATION

Don't Generate, Classify! Low-Latency Prompt Optimization with Structured Complementary Prompt
Hee-Soo Kim, Jun-Young Kim, **Jeong-Hwan Lee**, Seong-Jin Park, Kang-Min Kim
European Chapter of the Association for Computational Linguistics (EACL, Main Conference; Oral), 2026

PROJECTS

Korea Paralympic Committee, Government / Industry Project *2025 June – 2025 Dec*

- Contributing to two Korean patent applications (time-series performance prediction & 3D motion analysis with XAI)
- Conducted EDA and feature engineering on athlete time-series data, including missing-value handling via linear and spline interpolation, to support performance modeling
- Developed a multi-turn personalized counseling chatbot serving pipeline using vLLM with EXAONE-4.0-32B-AWQ,

PETOBIO, Industry–Academia Project *2025 July – 2025 Oct*

- Developed a RoBERTa-based named entity recognition (NER) pipeline for constructing veterinary knowledge graphs, achieving 91% Macro-F1

Agent-Based Disaster Detection LLM, Government / Industry Project *2025 Sept – 2025 Nov*

- Migrated the LLM stack from Qwen3 to vLLM with EXAONE, integrated KMA and disaster response
- APIs, and implemented reasoning-mode control for agent-based detection and decision support

BeaverWorks , Industry–Academia Project *2025 March – 2025 Apr*

- Implemented intent classification, slot filling for an AI phone ARS system using BERT and RoBERTa

EXPERIENCE

CUK NLPLAB Undergraduate researcher *2025 March – 2026 Jan*

Advisor: Prof. Kang-Min Kim

- Conducted research on prompt optimization and LLM alignment, including experiments with PLMs and black-box LLMs.
- Participated in multiple research and industry–academia projects utilizing PLMs and LLMs for real-world applications.
- Conducted 3 paper seminars on recent NLP and LLM research, including critical analysis and group discussion: [Materials]

Top ~3% of users Baekjoon Online Judge *2023 Jan – 2025 May*

- Achieved Platinum V rank with 690 algorithm problems solved, reflecting advanced algorithmic reasoning ability.

Technical Tech Blog Author & Maintainer *2023 June – 2025 March*

- Documented self-directed learning for 400+ consecutive days while serving as a Cyber Security Soldier.
- Achieved 26tnduk+ cumulative followers, covering algorithms, data structures, operating systems, and software development.
- Produced annotated explanations and guided other users in solving their technical problems.

Blog: https://go2gym365.tistory.com

Republic of Korea Army Cyber Security specialist *2023 Jan – 2024 July*

- Conducted network management and vulnerability analysis at the corps level
- Developed Python-based tools for log collection and security analysis
- Participated in civilian and military CTF competitions; received multiple commendations

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TECHNICAL SKILLS

Programming Languages
- Python, C, C++

Framework
- PyTorch (extensive),
- JAX (tutorial-level)

Core CS & Algorithms
- Data Structures, Algorithms
- Computational Thinking

Systems & Software
- Operating Systems, Software Development

NLP & Large Language Models
- Transformer Architectures (from-scratch implementation)
- Named Entity Recognition (NER)
- vLLM-based LLM Serving

Tools & Platforms
- Git, GitHub, Linux

LANGUAGES

English: Intermediate High (Proficient with technical discussions)

OPIc Examination Intermediate High (IH) Level Certified. *2026 January*

Korean: Native