

Donghyun Kim

AI Research Scientist · Ph.D. in Computer Science

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RESEARCH INTERESTS

Knowledge-Integrated AI Systems - Knowledge Acquisition and Representation; Retrieval-Augmented Generation; Multimodal Information Retrieval; Knowledge-Enhanced Agents

Trustworthy and Explainable AI - Knowledge Refinement; Factuality Verification; Evidence-Grounded Reasoning

Data-Efficient AI - Active Learning; Data Selection; Adaptive Supervision

EDUCATION

Yonsei University

Ph.D. in Computer Science

Seoul, South Korea

Sep. 2019 – Aug. 2026 (Expected)

- Dissertation: Towards Bridging the Gap between Knowledge Graphs and Real-World Facts
- Advisor: Prof. Kyong-Ho Lee

Pusan National University

B.S. in Computer Science and Engineering

Busan, South Korea

Mar. 2013 – Feb. 2017

EXPERIENCE

NC AI

Research Intern

Seongnam, South Korea

Apr. 2026 – Present

- Investigated and developed knowledge-integrated agentic AI systems

Republic of Korea Army

Commissioned Officer

South Korea

Mar. 2017 – Jun. 2019

- Led a signal platoon and managed tactical communication systems (voice, data, and information)

PUBLICATIONS

International

[17] **Donghyun Kim***, Hyeongjun Yang, Seokju Hwang, Kyong-Ho Lee, and Chanhee Lee, “**Aligning Retrievers with Evidence-Grounded Reasoning for Retrieval-Augmented Knowledge Graph Validation**,” *Under Review*.

[16] Hyeongjun Yang, **Donghyun Kim**, Kyuhwan Yeom, Kyong-Ho Lee, Byungkook Oh, and Xiongnan Jin, “**Reliable Distillation of Recommendation Rationales from Large Language Models for Conversational Recommendation**,” *Under Review*.

[15] Seokju Hwang, Midan Shim, Yeseul Gong, **Donghyun Kim**, and Kyong-Ho Lee, “**FineESC: Fine-Grained Emotional Support Conversation with Turn-level Importance Modeling via Subquestion Reasoning**,” *Under Review*.

[14] Heeyeon Koo, **Donghyun Kim**, Hyojun Choi, and Kyong-Ho Lee, “**FLOW: Complex Fact-Checking through Linking Implicit and Explicit Claims with Large Language Model Reasoning**,” *Under Review*.

[13] **Donghyun Kim***, Hyeongjun Yang, Seokju Hwang, Kyong-Ho Lee, and Chanhee Lee, “**LLMs as Knowledge Graph Refiners: Mitigating Factual Inconsistencies in Generative Knowledge Extraction**,” *ACL 2026 (Main Conference)*, *Accepted*.

[12] Hyeongjun Yang, **Donghyun Kim**, Seokju Hwang, Midan Shim, Kyuhwan Yeom, Kaehyun Um, and Kyong-Ho Lee, “**Data-Efficient Adaptation to Contextual Shifts in LLM-based Conversational Recommendation**,” *ACL 2026 (Findings)*, *Accepted*.

- [11] Seungyeon Kim, **Donghyun Kim**, Seokju Hwang, Kyong-Ho Lee, and Kyunghwa Lee, “**LLM-Assisted Ontology Restriction Verification with Clustering-based Description Generation**,” *IEEE Access*, Vol. 13, 2025.
- [10] **Donghyun Kim***, Hyeongjun Yang, Seokju Hwang, Kyuhwan Yeom, Midan Shim, and Kyong-Ho Lee, “**Active Learning Framework for Improving Knowledge Graph Accuracy**,” *IEEE Access*, Vol. 13, 2025.
- [9] Hyeongjun Yang, **Donghyun Kim**, Gayeon Park, Kyuhwan Yeom, and Kyong-Ho Lee, “**CoreSense: Social Commonsense Knowledge-Aware Context Refinement for Conversational Recommender System**,” *IEEE Transactions on Knowledge and Data Engineering*, Vol. 37, No. 4, 2025.
- [8] Chanhee Lee, **Donghyun Kim**, Wongyu Kim, Kyungchan Lee, Youbin Ahn, Kyong-Ho Lee, Donghoon Shin, and Yeonsoo Lee, “**Optimizing Training Data for Persona-Grounded Dialogue via Synthetic Label Augmentation**,” *Expert Systems With Applications*, Vol. 265, 2025.
- [7] Yeseul Gong, Heeseon Kim, Seokju Hwang, **Donghyun Kim**, and Kyong-Ho Lee, “**Multi-Domain Dialogue State Tracking via Dual Dynamic Graph with Hierarchical Slot Selector**,” *Knowledge-Based Systems*, Vol. 308, 2025.
- [6] Kyungchan Lee, Chanhee Lee, **Donghyun Kim**, and Kyong-Ho Lee, “**Dialogue Act-based Partner Persona Extraction for Consistent Personalized Response Generation**,” *Expert Systems With Applications*, Vol. 254, 2024.
- [5] Seungmin Seo, Byungkook Oh, Jeongbeom Jeoung, **Donghyun Kim**, Kyong-Ho Lee, Donghoon Shin, and Yeonsoo Lee, “**Active Learning for Cross-sentence N-ary Relation Extraction**,” *Information Sciences*, Vol. 645, 2023.
- [4] **Donghyun Kim***, Youbin Ahn, Wongyu Kim, Chanhee Lee, Kyungchan Lee, Kyong-Ho Lee, Jeonguk Kim, Donghoon Shin, and Yeonsoo Lee, “**Persona Expansion with Commonsense Knowledge for Diverse and Consistent Response Generation**,” In *Proceedings of the EACL 2023*.
- [3] **Donghyun Kim***, Youbin Ahn, Chanhee Lee, Wongyu Kim, Kyong-Ho Lee, Donghoon Shin, and Yeonsoo Lee, “**Concept-based Persona Expansion for Improving Diversity of Persona-Grounded Dialogue**,” In *Proceedings of the EACL 2023*.
- [2] Wongyu Kim, Youbin Ahn, **Donghyun Kim**, and Kyong-Ho Lee, “**Emp-RFT: Empathetic Response Generation via Recognizing Feature Transitions between Utterances**,” In *Proceedings of the NAACL-HLT 2022*.
- [1] Seungmin Seo, **Donghyun Kim**, Youbin Ahn, and Kyong-Ho Lee, “**Active Learning on Pre-trained Language Model with Task-Independent Triplet Loss**,” In *Proceedings of the AAAI 2022*.

Domestic

- [2] Seokju Hwang, **Donghyun Kim**, Kyong-Ho Lee, and Kyunghwa Lee, “**Ontology-based Fact Checking for Verification of Defense Domain Sentences**,” *Journal of Korea Multimedia Society*, Vol. 27, No. 11, 2024.
- [1] Kyuhwan Yeom, **Donghyun Kim**, Seungyeon Kim, Yongsu Bae, Kyong-Ho Lee, and Kyunghwa Lee, “**Building a Korean Dataset for Knowledge Extraction in the Military Domain: Focusing on Navy Force and Weapon Systems**,” *Journal of Korea Multimedia Society*, Vol. 27, No. 7, 2024.

PATENTS

- [6] Kyong-Ho Lee, Seungyeon Kim, and **Donghyun Kim**, “**Ontology Restriction Verification System and the Method thereof**,” *KR Patent*, filed Nov. 14, 2025 (No. 10-2025-0172318).
- [5] Kyong-Ho Lee, and **Donghyun Kim**, “**Method and Apparatus for Retrieval-Augmented Knowledge Graph Validation using Large Language Model**,” *KR Patent*, filed Jul. 7, 2025 (No. 10-2025-0090580).
- [4] Kyong-Ho Lee, **Donghyun Kim**, Seokju Hwang, and Kyunghwa Lee, “**Active Learning Method and Apparatus for Improving Knowledge Graph Accuracy**,” *KR Patent*, filed Oct. 29, 2024 (No. 10-2024-0149277).
- [3] Kyong-Ho Lee, Kyuhwan Yeom, Seokju Hwang, **Donghyun Kim**, and Kyunghwa Lee, “**Fact Verification Method based on Domain Ontology and Apparatus thereof**,” *KR Patent*, filed Oct. 29, 2024 (No. 10-2024-0149276).

[2] Kyong-Ho Lee, Wongyu Kim, Youbin Ahn, and Donghyun Kim, “Method and Apparatus for Generating Empathetic Responses via Recognizing Emotion and Keyword Transitions between Utterances,” *KR Patent, filed Mar. 15, 2023 (No. 10-2023-0034098)*.

[1] Kyong-Ho Lee, Donghyun Kim, Youbin Ahn, Wongyu Kim, and Chanhee Lee, “Method and Apparatus for Generating Extended Persona Sentences,” *KR Patent, filed Dec. 31, 2021 (No. 10-2021-0194377); registered Sep. 11, 2025 (No. 10-2860494)*.

RESEARCH PROJECTS

Automated Generation and Verification of CMMS-K

Korea Research Institute for Defense Technology Planning and Advancement (KRIT)

Nov. 2022 – Feb. 2026

- **Project Leader:** Proposal, Planning, Development, Verification

Refining User Preferences by Leveraging Knowledge Graphs for Conversational Recommender System

National Research Foundation of Korea (NRF)

Mar. 2022 – Feb. 2025

- Project Member: Development, Verification

Dynamic Context Reasoning for Advanced Intelligent Service Robot

Hyundai Motor Company

Jul. 2022 – Aug. 2023

- **Project Leader:** Proposal, Planning, Management

Knowledge Graph based Intent-Community Detection

Samsung Electronics

Dec. 2021 – Nov. 2022

- Project Member: Proposal, Planning

Improving Dialogue Quality via Consistent Persona Expansion and Training Optimization

NCSOFT Corporation

Jun. 2021 – Dec. 2021

- **Project Leader:** Proposal, Planning, Development, Verification

Improving Dialogue Quality via Persona Expansion and Combination using Knowledge Graphs

NCSOFT Corporation

Nov. 2020 – May. 2021

- **Project Leader:** Proposal, Planning, Development, Verification

Active Learning based N-ary Relation Extraction and Structuralization

NCSOFT Corporation

Sep. 2019 – Apr. 2020

- Project Member: Development, Verification

HONORS & AWARDS

Yonsei Young Researcher Fellowship

2023

Brain Korea 21+ Academic Research Fellowship

2021-2, 2023-1