Donghyun Kim

AI/ML Researcher · Ph.D. Candidate in Computer Science
Yonsei University, 50, Yonsei-ro, Seodaemun-gu, Seoul, South Korea

Github | Linkedin | Scholar | dhkim92@yonsei.ac.kr

RESEARCH INTERESTS

NLP & Knowledge Graphs
Knowledge Extraction / Reasoning / Validation

Conversational AI
Knowledge-Enhanced Personalized Dialogue Generation

EDUCATION

Yonsei University   South Korea
Ph.D. in Computer Science (Advisor: Prof. Kyong-Ho Lee)   Sep. 2019 – Present

Pusan National University   South Korea
B.S. in Computer Science and Engineering   Mar. 2013 – Feb. 2017

EXPERIENCE

Republic of Korea Army   South Korea
Commissioned Officer (First Lieutenant)   Mar. 2017 – Jun. 2019
· Served as a Signal Platoon Leader
· Operated and maintained tactical communication systems (voice, data, and information)

PUBLICATIONS

International

[15] 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*.

[14] **Donghyun Kim**, Hyeongjun Yang, Chanhee Lee, Seokju Hwang, and Kyong-Ho Lee, "**R4KGV: Retrieval-Augmented Knowledge Graph Validation with Large Language Models**," *Under Review*.

[13] 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*.

[12] 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*.

[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

[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)*

RESEARCH PROJECTS

Automated Generation and Verification of CMMS-K
w/ 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 KGs for Conversational Recommender System

w/ National Research Foundation of Korea (NRF)   Mar. 2022 – Feb. 2025

· Project Member: Development, Verification

Dynamic Context Reasoning for Advanced Intelligent Service Robot

w/ Hyundai Motor Company   Jul. 2022 – Aug. 2023

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

Improving Dialogue Quality via Consistent Persona Expansion and Training Optimization

w/ NCSOFT Corporation   Jun. 2021 – Dec. 2021

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

Improving Dialogue Quality via Persona Expansion and Combination using KGs

w/ NCSOFT Corporation   Nov. 2020 – May. 2021

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

Active Learning based N-ary Relation Extraction and Structuralization

w/ 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