

# Donghyun Kim

Ph.D. Student in Computer Science

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## EDUCATION

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### Yonsei University

Ph.D. Student in Computer Science

· Advisor: Prof. Kyong-Ho Lee

Seoul, Republic of Korea

Sep. 2019 – Present

### Pusan National University

B.S. in Computer Science and Engineering

Busan, Republic of Korea

Mar. 2013 – Feb. 2017

## EXPERIENCE

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### Republic of Korea Army

Army Officer, Discharged as a First Lieutenant

- Served as a signal platoon leader
- Maintained the Army tactical voice, data, and information systems

Republic of Korea

Mar. 2017 – Jun. 2019

## PUBLICATIONS

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### International

[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**,” *IEEE Transactions on Affective Computing* (IF: 9.6), Under Review.

[11] Seungyeon Kim, **Donghyun Kim**, Seokju Hwang, and Kyong-Ho Lee, “**LLM-Assisted Ontology Restriction Verification with Clustering-based Description Generation**,” *IEEE Access* (IF: 3.4), Under Review.

[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* (IF: 3.4), Under Review.

[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* (IF: 8.9), Accepted.

[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* (IF: 7.5), Vol. 265, Mar. 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* (IF: 7.2), Vol. 308, Jan. 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* (IF: 7.5), Vol. 254, Nov. 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* (IF: 8.1), Vol. 645, Oct. 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 (KCI)*, Vol. 27, No. 11, Nov. 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 (KCI)*, Vol. 27, No. 7, Jul. 2024..

## PATENTS

- [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

- |   |  |
|---|--|
| 한국형 임무공간 개념모델 자동화 생성 및 검증 기술<br><i>Automated Generation and Verification of CMMS-K</i>  | 국방기술진흥연구소 (KRIT)<br>Nov. 2022 – Feb. 2026      |
| · <b>Project Leader</b>   |  |
| 사용자 선호도 파악을 위한 지식그래프 기반 대화형 추천시스템<br><i>Refining User Preferences by Leveraging KGs for Conversational Recommender System</i> | 한국연구재단 (NRF)<br>Mar. 2022 – Feb. 2025          |
| · Project Member  |  |
| 질의 의도 기반 지식그래프 정보 검색<br><i>Query Intent-based Information Retrieval from KGs</i>  | Samsung Research<br>Dec. 2023 – Nov. 2024      |
| · Project Member  |  |
| 엔지니어링 의사결정 지원을 위한 자연어 처리/딥러닝 기반 시맨틱 웹 알고리즘 연구<br><i>NLP/DL-based Semantic Web Algorithm for Engineering Decision Support</i>  | Hyundai Motor Company<br>Jun. 2023 – Jul. 2024 |
| · Project Member  |  |
| 온톨로지 기반 멀티타입 상호작용 모델링 기술<br><i>Ontology-based Multi-type Interaction Modeling</i>   | Samsung Research<br>Dec. 2022 – Nov. 2023      |
| · Project Member  |  |

서비스 로봇의 지능 고도화를 위한 동적 상황 추론기 개발  
*Dynamic Context Reasoning for Advanced Intelligent Service Robot*  
 · **Project Leader**

Hyundai Motor Company  
 Jul. 2022 – Aug. 2023

지식그래프 기반 사용자 의도 및 커뮤니티 탐색 기술  
*Knowledge Graph based Intent-Community Detection*  
 · Project Member

Samsung Research  
 Dec. 2021 – Nov. 2022

동적으로 진화하는 지식그래프의 정보 품질 개선을 위한 심층 표현학습  
*Deep Representation Learning for Improving the Information Quality of Dynamically Evolving KGs*  
 · Project Member

한국연구재단 (NRF)  
 Sep. 2019 – Feb. 2022

일관적 페르소나 확장 및 훈련 최적화를 통한 챗봇 대화 품질 향상  
*Improving Dialogue Quality via Consistent Persona Expansion and Training Optimization*  
 · **Project Leader**

NCSOFT  
 Jun. 2021 – Dec. 2021

지식그래프를 이용한 페르소나 확장 및 조합을 통한 챗봇 대화 품질 향상  
*Improving Dialogue Quality via Persona Expansion and Combination using KGs*  
 · **Project Leader**

NCSOFT  
 Nov. 2020 – May. 2021

액티브 러닝을 활용한 다항 관계 지식 추출 및 구조화 기술 연구  
*Active Learning based N-ary Relation Extraction and Strucuralization*  
 · Project Member

NCSOFT  
 Sep. 2019 – Apr. 2020

## HONORS & AWARDS

Yonsei Young Researcher Fellowship	2023
Brain Korea 21+ Academic Research Fellowship	2021-2, 2023-1
Brain Korea 21+ Academic Scholarship	2020-2, 2021-1