Donghyun Kim

Ph.D. Student in Computer Science

Yonsei University, 50, Yonsei-ro, Seodaemun-gu, Seoul, Republic of Korea

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EDUCATION

Yonsei University <div align="right">Seoul, Republic of Korea</div>
Ph.D. Student in Computer Science <div align="right">Sep. 2019 – Present</div>
· Advisor: Prof. Kyong-Ho Lee

Pusan National University <div align="right">Busan, Republic of Korea</div>
B.S. in Computer Science and Engineering <div align="right">Mar. 2013 – Feb. 2017</div>

EXPERIENCE

Republic of Korea Army <div align="right">Republic of Korea</div>
Army Officer, Discharged as a First Lieutenant <div align="right">Mar. 2017 – Jun. 2019</div>
· Served as a signal platoon leader
· Maintained the Army tactical voice, data, and information systems

PUBLICATIONS

International

[9] **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*.

[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), Accepted*.

[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), Accepted*.

[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
Automated Generation and Verification of CMMS-K

국방기술진흥연구소 (KRIT)
Nov. 2022 – Feb. 2026

· **Project Leader**

사용자 선호도 파악을 위한 지식그래프 기반 대화형 추천시스템
Refining User Preferences by Leveraging KGs for Conversational Recommender System

한국연구재단 (NRF)
Mar. 2022 – Feb. 2025

· Project Member

질의 의도 기반 지식그래프 정보 검색
Query Intent-based Information Retrieval from KGs

Samsung Research
Dec. 2023 – Nov. 2024

· Project Member

엔지니어링 의사결정 지원을 위한 자연어 처리/딥러닝 기반 시맨틱 웹 알고리즘 연구
NLP/DL-based Semantic Web Algorithm for Engineering Decision Support

Hyundai Motor Company
Jun. 2023 – Jul. 2024

· Project Member

온톨로지 기반 멀티타입 상호작용 모델링 기술
Ontology-based Multi-type Interaction Modeling

Samsung Research
Dec. 2022 – Nov. 2023

· Project Member

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

Hyundai Motor Company
Jul. 2022 – Aug. 2023

· **Project Leader**

지식그래프 기반 사용자 의도 및 커뮤니티 탐색 기술
Knowledge Graph based Intent-Community Detection

Samsung Research
Dec. 2021 – Nov. 2022

· Project Member

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