

Education

University of Minnesota Twin Cities

PH.D. IN COMPUTER SCIENCE

- Advisor: Dongyeop Kang

Minneapolis, MN

Sept. 2022 - Present

KAIST (Korea Advanced Institute of Science and Technology)

M.S. IN COMPUTER SCIENCE

- Advisor: Ho-Jin Choi
- Thesis: "Classifying Travel-Related Intents in Textual Data Using Recurrent Neural Networks"

Daejeon, S.Korea

Sept. 2014 - Aug. 2016

Imperial College London

B.ENG. IN COMPUTER SCIENCE

- Group Project: "Intention Recognition in Ambient Homes"
- Individual Project: "Computing Fictitious Plays in Graph-Based Games"

London, UK

Oct. 2008 - Aug. 2011

Work Experience

Grammarly

PHD INTERN

- Researching on iterative text revision models incorporating discourse structures.

Remote Work

Mar. - June 2022

NAVER LABS Europe

RESEARCHER

- Researched on discovering language specific representation of multilingual NMT models.
- Researched on cross-lingual discourse analysis and its application to document-level NMT.

Meylan, France

Oct. 2020 - Feb. 2022

Papago, NAVER Corp.

RESEARCHER

- Developed machine translation (MT) service for Thai-Korean and German-Korean language pairs.
- Developed utility programs for MT, such as sentence segmenter, corpus preprocessor, corpus aligner/crawler, etc.
- Developed website translation service based on NMT models, utilizing encoder-decoder attentions and heuristics.
- Participated in Quality Estimation shared task at WMT20; came 4th for sentence-level, 1st for document-level tasks.

Seongnam, S.Korea

Mar. 2017 - Sept. 2020

Knowledge Engineering and Artificial Intelligence Lab, KAIST

RESEARCHER

- Developed an adaptive vocabulary learning application that incorporates a learner's linguistic proficiency and topical interests.
- Developed a health-care application that suggests *Pokémon Go* events when a user's activeness is predicted to be low.

Daejeon, S.Korea

Dec. 2016 - Feb. 2017

NAVER LABS Corp.

RESEARCH INTERN

- Researched on conducting extended named entity recognition on Korean texts that recognizes hierarchical categories of an entity.

Seongnam, S.Korea

Sept. - Nov. 2016

Samsung-KAIST Academic Initiatives

RESEARCH ASSISTANT

- [1st Yr.] Investigated intent classification in textual data in the context of providing well-suited services in travel and tourism domain.
- [2nd Yr.] Researched on long-term human activeness modeling and prediction for wellness services using recurrent neural networks.

Daejeon, S.Korea

Apr. 2014 - Jul. 2016

Knowledge Engineering and Artificial Intelligence Lab, KAIST

RESEARCHER

- Surveyed on plan and intention recognition.
- Researched on temporal information extraction task on both English and Korean texts.

Daejeon, S.Korea

Dec. 2013 - Sept. 2014

International Peace Supporting Standby Force, Special Warfare Command, ROK Army

ARMY INTERPRETER & AVIATION IMAGE ANALYST

- Served as an army interpreter & translator during ROK-US combined training exercises.
- Acted as a 3D aviation image analyst and a squad leader.

Incheon, S.Korea

Jan. 2012 - Oct. 2013

Department of Mechatronics, Chungnam National University

RESEARCH INTERN

- Designed and implemented a stair-walking robot using LEGO Mindstorms.
- Helped out with hosting Robotics Camp for primary school students.

Daejeon, S.Korea

Jul. - Aug. 2008

Teaching Experience

Advanced Language Processing Winter School (ALPS) 2022

TEACHING ASSISTANT

Virtual

Jan. 2022

- Participated in writing programming exercises on controllable NMT for Prof. Graham Neubig's lab. session.
- Helped out with the students' technical questions about the exercises.

Academic-Industrial Collaboration Project, Chungbuk National University

GROUP MENTOR

Virtual

Oct. 2021 - Nov. 2021

- Mentored three groups of undergraduate students on their group projects.
- The project topics included making use of public APIs, pre-trained language models, and training models for store sign classification.

Advanced Language Processing Winter School (ALPS) 2021

TEACHING ASSISTANT

Virtual

Dec. 2020 - Jan. 2021

- Participated in writing programming exercises on multilingual NMT for Prof. Kyunghyun Cho's lab. session.
- Helped out with the students' technical questions about the exercises.

Elice AI & Data Science Course, Daejeon Creative Economy Innovation Center

TEACHING ASSISTANT

Daejeon, S.Korea

Oct. 2016 - Apr. 2017

- Wrote five programming exercises every week for the government-funded data science course.
- [Dec. 26-27, 2016] Participated as a T/A in the data science workshop & challenge—our team came second in the challenge.

Introduction to A.I.(CS470), School of Computing, KAIST

TEACHING ASSISTANT & GUEST SPEAKER

Daejeon, S.Korea

Sept. - Dec. 2015

- Held office hours, designed and graded homeworks and programming assignments.
- [Sept. 2, 2015] As a guest speaker, presented my research work on extraction of travel-related intents from textual review data.

Machine Learning Summer Camp 2015 (Online), School of Computing, KAIST

TEACHING ASSISTANT

Daejeon, S.Korea

Aug. 3 - 28, 2015

- Managed three discussion groups, helping out with the weekly tasks.

Programming Practice(CS109), School of Computing, KAIST

TEACHING ASSISTANT

Daejeon, S.Korea

Mar. - Jun. 2015

- Helped out freshers with programming practical sessions taught in Scala language.

Talks

Colloquium talk at Graduate School of Software, KAIST

SPEAKER

Virtual

Dec. 2, 2021

- Talked about the thesis topic on "Cross-Lingual Discourse Analysis and Its Application".

Invited lectures at a start-up company, Rye & Catchers

SPEAKER

Seoul, S.Korea

Aug. - Sept. 2021

- Gave a series of three seminars on recent trends on NLP and a few selected topics of the company's interests.
- Designed and provided three lab. sessions on practical NLP techniques.

DEVVIEW 2018: "Papago Internals: Model Analysis and Development with Applied Technology"

SPEAKER

Seoul, S.Korea

Oct. 12, 2018

- Talked about developing a website translation service at Papago, highlighting research issues and technical difficulties.

Invited talk at a start-up company, Rye & Catchers

GUEST SPEAKER

Seoul, S.Korea

Nov. 11, 2016

- Talked about how textual data can be processed and utilized by *Bibly*, the company's book recommendation service.

Two invited lectures at the Dept. of Humanities, Chonbuk National University

GUEST LECTURER

Jeonju, S.Korea

May 27 and Jun. 3, 2016

- Talked about IT and its role in the performing arts in East Asia for BA students at the Department of Humanities.

Publications

CONFERENCE PAPERS

Understanding Iterative Revision from Human-Written Text

WANYU DU, VIPUL RAHEJA, DHRUV KUMAR, ZAE MYUNG KIM, MELISSA LOPEZ, DONGYEOP KANG

May 2022

ACL 2022

Visualizing Cross-Lingual Discourse Relations in Multilingual TED Corpora

ZAE MYUNG KIM, VASSILINA NIKOULINA, DONGYEOP KANG, DIDIER SCHWAB AND LAURENT BESACIER

Nov. 2021

CODI 2021 at EMNLP 2021

Do Multilingual Neural Machine Translation Models Contain Language Pair Specific Attention Heads?

ZAE MYUNG KIM, LAURENT BESACIER, VASSILINA NIKOULINA, DIDIER SCHWAB

Aug. 2021

Findings of ACL 2021

A Multilingual Neural Machine Translation Model for Biomedical Data

ALEXANDRE BÉRARD, ZAE MYUNG KIM, VASSILINA NIKOULINA, EUNJEONG PARK, MATTHIAS GALLÉ

Dec. 2020

NLP-COVID19 at EMNLP 2020

PATQUEST: Papago Translation Quality Estimation

YUJIN BAEK*, ZAE MYUNG KIM*, JIHYUNG MOON, HYUNJOONG KIM, EUNJEONG PARK

Nov. 2020

WMT 2020

An adaptive vocabulary learning application through modeling learner's linguistic proficiency and interests

ZAE MYUNG KIM, SUIN KIM, ALICE OH, HO-JIN CHOI

Feb. 2017

Int'l Conf. on Big Data and Smart Computing

TIMEX3 and Event Extraction Using Recurrent Neural Networks

ZAE MYUNG KIM, YOUNG-SEOB JEONG, AND HO-JIN CHOI

Jan. 2016

Int'l Conf. on Big Data and Smart Computing

Temporal Information Extraction from Korean Texts

YOUNG-SEOB JEONG, ZAE MYUNG KIM, HYUN-WOO DO, CHAE-GYUN LIM, AND HO-JIN CHOI

Jul. 2015

CoNLL 2015

JOURNAL PAPERS

Modeling Long-Term Human Activeness Using Recurrent Neural Networks for Biometric Data

ZAE MYUNG KIM, HYUNGRAI OH, HAN-GYU KIM, CHAE-GYUN LIM, KYO-JOONG OH, AND HO-JIN CHOI

May 2017

BMC Med Inform Decis Mak [SCIE, IF:2.042]

Investigating the Impact of Possession-Way of a Smartphone on Action Recognition

ZAE MYUNG KIM*, YOUNG-SEOB JEONG*, KYO-JOONG OH, HYUNG-RAI OH, YOUSSEF IRAQI, AND HO-JIN CHOI

Jun. 2016

Sensors, 16(6) [SCIE, IF:2.437]

Academic Services

Jan. 2022 **Program Committee**, The 5th International Workshop on Dialog Systems

Virtual

Jan. 2021 **Program Committee**, The 4th International Workshop on Dialog Systems

Virtual

Dec. 2020 **Reviewer**, NLP-COVID19 at EMNLP

Virtual

Mar. 2020 **Reviewer**, IEEE Access

Virtual

Feb. 2019 **Program Committee**, The 2nd International Workshop on Dialog Systems

Kyoto, Japan

Awards & Accomplishments

2022 **Awarded**, 3M Science and Technology Fellowships

Minneapolis, MN

2016 **Awarded**, Outstanding Teaching Assistant Award, 2016 Data Science Workshop & Challenge at Elice

Geumsan, S.Korea

2016 **Awarded**, Outstanding Graduate Teaching Assistant Award, School of Computing, KAIST

Daejeon, S.Korea

2012 **Runner-Up**, Republic of Korea Army Oratorical Contest, ROK Army

Incheon, S.Korea

2011 **Winning Team**, Robotics Localization Challenge, Imperial College London

London, UK

2009 **Winning Team**, The Deutsche Bank Prize for Topics in A.I. Group Project, Imperial College London

London, UK

2008 **Participation**, Northwestern European Regional Programming Contest, ACM-ICPC

Utrecht, NL

2008 **Bronze Medal**, Royal College of Science Union Science Challenge (a literary contest)

London, UK

Skills

Programming Python, Java, JavaScript, C++14

ML TensorFlow, PyTorch, ONNX, Kubeflow

Web Vue, React, HTML5, Flask, Streamlit, REST API

DevOps SQLite, MongoDB, AWS, Docker, Kubernetes, Jenkins

Languages Korean (Native), English (Proficient), French (Novice)