Yuheun Kim

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Research Interests

Natural Language Processing, Artificial Intelligence, Computational Social Science

Education

Ph.D., Information Science and Technology, **Syracuse University**   Aug 2022 - Now
Advisor: Joshua Introne (C4 Lab)

M.S., Digital Analytics, **Yonsei University**   Mar 2020 - Feb 2022
Advisor: Min Song (Deep Text Lab)

B.A., Economics, Underwood International College, **Yonsei University**   Mar 2015 - Feb 2020

Exchange Student, Economics, **University of California, Irvine**   Sep 2017 - Jun 2018

Publications

* indicates equal contribution

Peer-reviewed Journal/Conference Papers

[C3] Qiaoyi Liu, **Yuheun Kim**, Jeff Hemsley. Scientists, but deny science? Climate Change Skeptics Network on YouTube Led by Scientists. *iConference 2025 Proceedings*, 2025.

[C2] **Yuheun Kim**, Lu Guo, Bei Yu, Yingya Li. Can ChatGPT Understand Causal Language in Science Claims? *Workshop on Computational Approaches to Subjectivity, Sentiment, & Social Media Analysis (WASSA) at the Association for Computational Linguistics (ACL)*, 2023.

[C1] Injin Paek, Nayoung Choi, Seongjin Ha, **Yuheun Kim**, Min Song. SQ2SV: Sequential Queries to Sequential Videos retrieval. *IEEE International Conference on Big Data*, 2022.

[J1] Gibong Hong*, **Yuheun Kim***, YeonJung Choi*, Min Song. BioPREP: Deep learning-based predicate classification with SemMedDB. *Journal of Biomedical Informatics*, 2021.

Abstract/Poster

[P1] Qiaoyi Liu, **Yuheun Kim**, Jeff Hemsley. Climate Change Skeptics and the Power of Negativity. *Annual Meeting of the Association for Information Science and Technology (ASIS&T)*. 2024.

[A1] **Yuheun Kim**, Joshua Introne. Cross-Cultural Belief Dynamics: A Case Study of K-pop Fans and the BLM Movement. *International Conference on Computational Social Science (IC2S2)*. 2024. [non-archival]

Research Experience

Computationally analyzing social beliefs

- Implemented a belief landscape framework to map out the beliefs of users from two distinct topics: K-pop and BLM.
- Analyzed the vector space of tweets embedded using different pre-trained models.
- Prompted gpt-4o model to summarize the predominant belief in a belief cluster.
- Formulated weighted vectors to represent each belief cluster.

Social media analysis

- Analyzed social media data for each by-election candidate.
  - Identified general sentiments for the candidate as well as co-occurring keywords.
- Analyzed YouTube comments for polarized climate change videos.
  - Fine-tuned a BERT model with climate change data specifically for sentiment analysis.

Prompt engineering

- Tested ChatGPT's ability in classifying causal language in science claims.
- Engineered prompts with instructional elements, such as Chain-of-Thought (CoT), context, and system messages.
- Analyzed ChatGPT's performance to fine-tuned BERT models.

Biomedical text classification

- Constructed a biomedical dataset for predicate classification, BioPREP.
- Configured code implementation for fine-tuning a BERT model.
- Compared neural network-based models performance in predicting biomedical text relation.

Log data analysis

- Identified key indicators from online class platform log data to understand user behavior.
- Analyzed times series data to identify correlation between key indicators and academic achievement.

Professional Activities

Conference Reviews (Reviewer)
The 31st International Conference on Computational Linguistics (COLING 2025)

Work Experience

Mar 2022-Jun 2022   AI research internship, BIGCARE services

Awards & Fellowships

2024-2025   Research Excellence Doctoral Funding (REDF) Fellowship, Syracuse University
Dec 2020   Digital Analytics Working Group Scholarship, Yonsei University
Nov 2020   AI Solution Competition, 3rd place, National IT Industry Promotion Agency (NIPA)
Oct 2020   Digital Analytics Major Competition, 1st place, Yonsei University

Teaching

2023-2024   IST256 (Applications Programming for Information Systems), Syracuse University
Fall 2022   IST736 (Text Mining), Syracuse University
Spring 2021   Python programming, Hanhwa Total Employee Training
Fall 2020   Data Analysis Project, Big Data Youth Campus, Korea Data Agency

Mentoring

Summer 2021   Student Mentor, Digital Analytics, Yonsei University