Yuheun Kim

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Research Interests

Natural Language Processing (NLP), Computational Social Science, Representation Alignment

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

Research Experience

Computationally analyzing social beliefs

- Adapted a belief landscape framework to map user beliefs from two discourse domains: K-pop and BLM.
- Embedded tweet corpora using multiple pre-trained models to analyze and visualize belief vector spaces.
- Applied GPT-4o for semantic content analysis and summarization of belief clusters.
- Validated cluster coherence through pairwise alignment coding using LLaMA.

Social media analysis

- Analyzed social media content related to by-election candidates, identifying public sentiment and extracting co-occurring keywords.
- Conducted comment analysis on polarized climate change YouTube videos.
    - Fine-tuned a BERT model on climate change data targeted for sentiment analysis.

Prompt engineering

- Evaluated ChatGPT's ability to classify causal language in scientific claims.
- Designed prompts incorporating instructional strategies such as Chain-of-Thought (CoT), context incorporation, and system messages.
- Compared ChatGPT's classification performance to that of 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.

Publications

* indicates equal contribution

Journal Articles

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

Peer-reviewed Conference Papers

[C6]   **Kim, Yuheun**, and Joshua Introne. Belief Alignment vs Opinion Leadership: Understanding Cross-linguistic Digital Activism in K-pop and BLM Communities *Proceedings of the International AAAI Conference on Web and Social Media,* 2026.

[C5]   **Kim, Yuheun**, Qiaoyi Liu, and Jeff Hemsley. LLM-Supported Content Analysis of Motivated Reasoning on Climate Change. *Proceedings of the Association for Information Science and Technology (ASIS&T),* 2025.

[C4]   Liu, Qiaoyi, **Yuheun Kim**, and Jeff Hemsley. Scientists, but deny science? Climate change sceptics networks on YouTube led by scientists. *Information Research an international electronic journal 30.iConf,* 2025.

[C3]   Liu, Qiaoyi, **Yuheun Kim**, and Jeff Hemsley. Climate Change Skeptics and the Power of Negativity. *Proceedings of the Association for Information Science and Technology 61.1 (ASIS&T),* 2024.

[C2]   **Kim, Yuheun**, Lu Guo, Bei Yu, and Yingya Li. Can ChatGPT Understand Causal Language in Science Claims? *Proceedings of the 13th Workshop on Computational Approaches to Subjectivity, Sentiment, & Social Media Analysis (WASSA)*, 2023.

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

Conference Presentations

[P1]   **Kim, Yuheun**, 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]

Professional Activities

Conference Reviews (Reviewer)
The 31st International Conference on Computational Linguistics (COLING 2025)
The 11th International Conference on Computational Social Science (IC2S2 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

2025-2026   IST256 (Applications Programming for Information Systems), Syracuse University
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