

JONG WOO KIM

Ph.D. Student

KAIST

gsds4885@kaist.ac.kr

<https://www.linkedin.com/in/jongwoo-kim-323406236/>

EDUCATION

Feb. 2016 ~ Aug. 2022	Seoul National University of Science and Technology Industrial Information Systems Engineering	Seoul, Korea
	Thesis: How to succeed in the market? Predicting startup success using a machine learning approach <i>Advisor: Youngjung Geum</i> <i>B.S student</i> <i>Summa Cum Laude</i>	
Sep. 2022 ~ Present	Korea Advanced Institute of Science and Technology Data science	Daejeon, Korea
	Thesis: MicroMIL: Spatially Enhanced Multiple Instance Learning for Advanced Cancer Diagnosis in Microscopy Imaging <i>Advisor: Mun Yong Yi</i> <i>Master Student</i>	
Aug. 2024 ~ Present	Korea Advanced Institute of Science and Technology Department of Industrial and Systems Engineering	Daejeon, Korea
	<i>Advisor: Mun Yong Yi</i> <i>Ph.D. Student</i>	

RESEARCH INTERESTS

- Multiple Instance Learning
- Vision Language Model / Large Language Model / Graph Language Model
- Heterogeneous Graph / Temporal Graph Neural Network

PUBLICATIONS (DOMESTIC)

1. Kim Jong Woo, Kim Hong il, Park Min Kyu, Geum Young Jung, "토픽 기반 RFM과 감성 분석을 통한 여행지 만족도 분석", 한국경영공학회지, (2021)
2. Park Min kyu, Jeon Beung Min, Kim jong Woo, Geum Young Jung, "용어 확장을 통한 핀테크 기술 적용가능 산업의 탐색: 네트워크 분석 및 토픽 모델링 접근", 한국전자거래학회지, (2021)
3. Hong Sung Rae, Kim Tae Mi, Lee Sol, Kim Jong Woo, Lee Mun Young, "MATE : 감성 분석을 위한 오디오-텍스트 혼합 모델", 한국정보과학회, (2022)

4. Seong Yeub Chu*, **JongWoo Kim***, Mun Yi, "Option-Knowledge Concept Aware Knowledge Tracing: modeling student proficiency with process-oriented assessment in education", Korea Computer Congress, (2024), ***co-author**.

RESEARCH EXPERIENCES

- Research Student at Service management Laboratory, Seoul National University of Science and Technology, Korea (Oct. 2020 ~ Feb. 2022) / Research Student
- Research Intern at Knowledge Innovation Research Center, Korea Advanced Institute of Science & Technology, Korea (Feb. 2022 ~ Aug. 2022) / Research Intern

AWARDS AND HONORS

- Superior Academic Performance, Seoul National University of Science and Technology, Korea (Feb. 2020)
- Superior Academic Performance,, Seoul National University of Science and Technology, Korea (Aug. 2020)
- Superior Academic Performance, Seoul National University of Science and Technology, Korea (Feb. 2021)
- Superior Academic Performance, Seoul National University of Science and Technology, Korea (Aug. 2021)
- Superior Academic Performance, Seoul National University of Science and Technology, Korea (Feb. 2022)
- Capstone Design (2nd), Seoul National University of Science and Technology, Korea (Dec. 2021)
- 2022 ETRI Human Understanding Artificial Intelligence Paper Contest(Minister of Science and ICT Awar, ETRI, Korea (Jun. 2022)
- Industrial and Social Issues Poster Contest, KAIST Department of Industrial and Systems Engineering, Korea (Nov. 2022)
- Best Award of Conference, Korea Computer Congress, Korea (Jun. 2024)

PROJECTS

- LLM 기반 검색엔진 고도화 & 학습 Planning System, 천재교육, Korea / LLM기반의 문제 추천 시스템 (Feb. 2025 ~ Present)
- 언어 영역에서의 창의적 사고 능력 평가 엔진 개발, KT, Korea / 언어 에세이 평가 모델 개발 (Feb. 2024 ~ Oct. 2024)
- AI 기반의 차세대 의료진단시스템 구축 연구, Seegene Inc, Korea / Project Manager (Team 2) (Sep. 2022 ~ Feb. 2024)
- AI 부동산 분석 플랫폼, 투자의 신, Korea (Feb. 2022 ~ Aug. 2022)
- Predicting Airbnb price by adding new variables, Seoul National University of Science and Technology, Korea / Project Manager (Mar. 2020 ~ Jul. 2020)
- Instacart 배달 물품 ARM 기반의 추천 시스템, Seoul National University of Science and Technology, Korea / Project Manager (Sep. 2020 ~ Dec. 2020)
- TOEIC 데이터를 활용한 영어 문장 빈칸 예측, Seoul National University of Science and Technology, Korea / Project Manager (Mar. 2021 ~ Jun. 2021)
- TOBIGBIRD (한국어 긴 문장 요약 pre-trained), TOBIG's, Korea (Nov. 2021 ~ Mar. 2022)

SKILLS AND TECHNIQUES

- Python
- Pytorch
- Opencv
- Torchgeometric
- Gym
- DGL

PREPRINT & UNDER REVIEW

- ChanJae Song*, Seong Yub Chu*, **Jong Woo Kim***, Mun Yi, "A Novel Evaluation Framework for 15-Minute City Using Satellite Imagery", under review (SIGSPATIAL), *co-author
- **Jong Woo Kim***, Seong Yub Chu*, Bryan Wong, Mun Yi, "Not All Options Are Created Equal: Textual Option Weighting for Token-Efficient LLM-Based Knowledge Tracing", under review (EMNLP). *co-author.
- **Jong Woo Kim***, Bryan Wong*, Huazhu Fu, Mun Yi, "Few-Shot Learning from Gigapixel Images via Hierarchical Vision-Language Alignment and Modeling", under review (NeurIPS). *co-author.
- Willmer Rafell Quinones Robles, Sakonporn Noree, Bryan Wong, **Jong Woo Kim**, Mun Yi, "Spatial Context-Driven Positive Pair Sampling for Enhanced Histopathology Image Classification", under review (WACV).
- **Jong Woo Kim**, Seong Yub Chu, Hyeong Min Park, Bryan Wong, Ki Jun Han, Mun Yi, "Leveraging Multi-facet Paths for Heterogeneous Graph Representation Learning", under review (CIKM).
- **Jong Woo Kim**, SeongYeub Chu, Hyeongmin Park, Minkyu Jung, Mun Yi, "AMR: Aspect-Aware Mooc Recommendation in a Heterogeneous View", preprint.
- **Jong Woo Kim**, Seong Yeub Chu, Mun Yi, "RFMRec: Enhancing Personal Recommendation Using Public Trend Captured via RFM," preprint.

CONFERENCES

1. **Jong Woo Kim***, Bryan Wong*, Huazhu Fu, Willmer Rafell Quiñones Robles, MunYong Yi, "MicroMIL: Graph-Based Multiple Instance Learning for Context-Aware Diagnosis with Microscopic Images", The Medical Image Computing and Computer Assisted Intervention Society (MICCAI 2025). *co-author.
2. Seong Yeub Chu*, **Jong Woo Kim***, Bryan Wong, Mun Yi, "Rationale Behind Essay Scores: Enhancing S-LLM's Multi-Trait Essay Scoring with Rationale Generated by LLMs", ACL 2025 Annual Conference of the North American Chapter of the Association for Computational Linguistics (NAACL 2025), Albuquerque, United States (Apr. 2025). *co-author
3. Seong Yeub Chu*, **Jong Woo Kim***, Mun Yi, "Think Together and Work Better: Combining Humans' and LLMs' Think-Aloud Outcomes for Effective Text Evaluation", ACM Conference on Human Factors in Computing Systems (CHI 2025), Yokohama, Japan (Apr. 2025). *co-author
4. Hyeongmin Park, Sungrae Hong, Chanjae Song, **Jong Woo Kim**, Mun Yi, "Uncertainty-based Data-wise Label Smoothing for Calibrating Multiple Instance Learning in Histopathology Image", IEEE/CVF Winter Conference on Applications of Computer Vision (WACV) 2025, Arizona, United States (Feb. 2025)
5. **Jong Woo Kim**, Min Kyu Jeong, Hyeong Min Park, Mun Yi, "Leveraging Spatial Relationships in Microscope for Patient Cancer Diagnosis", IEEE International Symposium on Biomedical Imaging (ISBI), Athens, Greece (May. 2024)

PUBLICATIONS (SCIE/ESCI)

1. Kim Jong Woo, Kim Hong il, Geum Young Jung, "How to succeed in the market? Predicting startup success using a machine learning approach", *TECHNOLOGICAL FORECASTING AND SOCIAL CHANGE*, (2023)