Yejin Jeong

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Education

M.S. Department of Mathematics, Mathematical Data Science, Korea University, 2025
B.S. Department of Mathematics, Kangwon National University, 2022

Work Experience

Mar. 2024 – Aug. 2024 CONNECTEVE Co. Ltd.

- Developed and validated a convolutional neural network-based system for automated measurement of pelvic parameters in spinal deformities, published in The Spine Journal.

Publications

Yejin Jeong, Donghun Lee, 2025, "CLIP-KOA: Enhancing Knee Osteoarthritis Diagnosis with Multi-Modal Learning and Symmetry-Aware Loss Functions", Learning with Longitudinal Medical Images and Data Workshop, MICCAI 2025.

Wanshan Cui*, **Yejin Jeong***, Inwook Song, Gyuri Kim, Minsang Kwon, Donghun Lee, 2025, "Re-experiment Smart: a Novel Method to Enhance Data-driven Prediction of Mechanical Properties of Epoxy Polymers", arXiv preprint, url:https://arxiv.org/abs/2506.01994.

Yejin Jeong, Wansun Cui, Donghun Lee, 2025, "A Data-driven Approach for Predicting Glass Transition Temperature of Epoxy Polymers", KIISE Transactions on Computing Practices (KTCP), Vol. 31, No. 4, pp. 201-206. (Presented at Korea Computer Congress 2024, Poster)

Dong-Ho Kang MD*, **Yejin Jeong***, Sung Taaeck Kim MD, et al. 2025, "Automated measurement of pelvic parameters using convolutional neural network in complex spinal deformities: overcoming challenges in coronal deformity cases", The Spine Journal, Vol.25, Issue 8, pp.1688-1697, doi: https://doi.org/10.1016/j.spinee.2025.01.020.

Projects & Competition Experience

2025 Personal Research : Multi-Modal Learning for Knee Osteoarthritis Diagnosis

- Developed a CLIP-based model ("CLIP-KOA") for knee osteoarthritis diagnosis, achieving state-of-the-art (SOTA) performance by designing symmetry-aware loss functions specifically tailored for Knee Osteoarthritis (KOA).

2024-2025 Project : AI-based Fashion Jewelry Recommendation from Clothing Images

- Built a model training pipeline using DeepFashion2 dataset; performed clothing detection and classification with Faster R-CNN and YOLO.
- Implemented a rule-based scoring system for jewelry retrieval recommendations.
- Served as Project Manager, designing structured, class-based inference modules and coordinating effective communication with external development teams.

2024.07-10 RSNA 2024 Lumbar Spine Degenerative Classification

- Developed structured data preprocessing pipelines for detection and condition-level prediction, including data merging, cleaning, and systematic train-test splitting.
- Developed modular image classification workflows with customized augmentation, feature extraction, and training strategies, integrated with wandb experiment tracking.

2023.12 2023 Oral Image Synthesis Healthcare AI Competition

- Developed image-based binary classification models, optimizing performance metrics and effectively managing data imbalance.
- Enhanced codebase structure through modularization, implementing robust training and evaluation pipelines for improved maintainability.

2023-2024 Project : Virtual Engineering Platform Construction (EPOXY)

- Developed an operational data input tool supporting raw data formats (.xlsx/.txt).
- Conducted EDA with anomaly detection and built machine learning-based predictive models.
- Proposed a data-driven method for predicting the glass transition temperature of epoxy polymers utilizing RANSAC (Poster at Korea Computer Congress 2024)
- manuscript under internal review, patent pending

2023.09-11 Artificial Intelligence Grand Challenge (Stage 2)

- Developed a configurable inference pipeline with structured file management using a custom Config class.
- Retrieved evidence using Sparse and Dense retrievers, and generated final answers through a fine-tuned Large Language Model (LLM).

2023.07-08 Artificial Intelligence Grand Challenge (Open track)

- Generated and augmented training datasets through rule-based methods and sampling strategies to ensure balanced model learning.
- Trained and optimized AI models using diverse datasets (AIHub, KorQuad), leveraging TensorBoard visualization for performance analysis and optimal model selection.

Awards

2024	Outstanding Paper Award, Korea Computer Congress 2024 – KIISE
2023	Artificial Intelligence Grand Challenge - KETI Director's Award
2022	Outstanding Award (Departmental Honors Graduate)
2021	KNU Programming Contest - Excellence Award
2020	Curriculum-Linked Extracurricular Learning Support Program - Grand Prize

Scholarship

2020	Departmental Scholarship, Dept. of Mathematics, Kangwon National University
2020	Local Community Scholarship, Incheon Human Resources Development Foundation
2019-2021	Lotte Foundation Scholarship (Hope Scholarship), Lotte Scholarship Foundation
2019	Incheon Citizen Scholarship, Incheon Human Resources Development Foundation
2019	Gangwon Community Chest Scholarship, Daewon Steel Co., Ltd.

Certifications

2021	Engineer Information Processing
2020	Computer Specialist in Spreadsheet & Databased Level-I

Skills

- Programming Languages : Python
- Deep Learning Frameworks & Tools : PyTorch, Hugging Face
- Development & Version Control : Docker, Git & GitHub
- Collaboration & Communication : Slack