

Jaeyoung Kim

Ph.D. in Computer Science · AI Model Evaluation & Interpretability · Human-Centered ML

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RESEARCH SUMMARY

Computer science researcher working at the intersection of **machine learning model evaluation, interpretability, and human-centered AI**. My recent work diagnoses how vision-language and multimodal models actually behave — auditing whether reported capabilities reflect genuine reasoning versus memorized priors, and probing how faithfully models rely on the geometric structure they are assumed to use (e.g., in hyperbolic and other geometric deep-learning models). I combine rigorous ML evaluation methodology with a background in visualization and human-computer interaction, which lets me turn opaque model behavior into diagnostics that are both technically sound and interpretable to people. Currently CTO of a healthcare-AI startup, where I lead applied ML development while maintaining an active first-author publication record.

RESEARCH INTERESTS

Evaluation & benchmarking of (multimodal) foundation models · Interpretability and model behavior analysis · Vision-language models · Geometric deep learning · Trustworthy & medical AI · Human-AI interaction

EDUCATION

Ph.D. in Computer Science and Engineering

Mar 2016 – Aug 2025

Seoul National University, Seoul, Republic of Korea

Integrated M.S./Ph.D. program. Human-Computer Interaction Laboratory. Advisor: Prof. Jinwook Seo.

Dissertation: “Enhancing Visual Analytics through Foundation Models: Strategic Implementation and Visualization Literacy Assessment Frameworks.”

B.S. in Electrical and Computer Engineering

Mar 2012 – Feb 2016

Sungkyunkwan University, Suwon, Republic of Korea

Undergraduate advisor: Prof. Andrea Bianchi.

PROFESSIONAL EXPERIENCE

Chief Technology Officer & Co-Founder — MADI Inc.

Jul 2025 – Present

- Lead development of AI-driven clinical-trial design optimization, owning the full ML stack from research to deployment.
- Led development of the internal AI prognostic model and PROCOVA-based statistical framework, including validation and regulatory documentation supporting Ministry of Food and Drug Safety (MFDS), Korea, approval of an investigator-initiated clinical-trial design.
- Built and direct the technical organization; set engineering and research direction for a regulated medical-software product from research through clinical deployment.

PUBLICATIONS

(* denotes equal contribution / co-first author. Author name in bold.)

Under Review

- [1] S. Lee*, **J. Kim***, S. Park, S. Lee, J. Song, B. Kim, H. Song, and J. Seo. “Disentangling Visual and Factual Correctness in LVLMs’ Visualization Literacy.” arXiv:2606.03142, 2026. Under review at IEEE Transactions on Visualization and Computer Graphics (TVCG). (Co-first author)

Peer-Reviewed

- [2] S. Park, Y. Song, S. Lee, **J. Kim**, and J. Seo. “Leveraging Multimodal LLM for Inspirational User Interface Search.” In Proc. 2025 CHI Conference on Human Factors in Computing Systems (CHI), pp. 1–22, 2025.
- [3] **J. Kim**, S. Lee, H. Jeon, K.-J. Lee, H.-J. Bae, B. Kim, and J. Seo. “PhenoFlow: A Human-LLM Driven Visual Analytics System for Exploring Large and Complex Stroke Datasets.” IEEE Transactions on Visualization and Computer Graphics (TVCG), vol. 31, no. 1, pp. 470–480, 2024. (First author)
- [4] Y. Kim, **J. Kim**, H. Jeon, Y.-H. Kim, H. Song, B. Kim, and J. Seo. “Githru: Visual Analytics for Understanding Software Development History through Git Metadata Analysis.” IEEE Transactions on Visualization and Computer Graphics (TVCG), vol. 27, no. 2, pp. 656–666, 2020. (Second author)
- [5] **J. Kim**, T. D. Ho, J. Kim, Y. Lee, and J. Seo. “Can Bullying Detection Systems Help in School Violence Scenarios? A Teachers’ Perspective.” In Extended Abstracts of the 2020 CHI Conference on Human Factors in Computing Systems (CHI EA), pp. 1–7, 2020. (First author)

TECHNICAL SKILLS

Research / ML: Foundation & vision-language model evaluation, interpretability methods, benchmark design, model behavior analysis, PyTorch, large-scale experimentation.

Engineering: Python, ML pipelines, GPU inference/serving with vLLM, full-stack product development, data & visual-analytics systems.

Domain: Healthcare / clinical AI, regulated medical software, human-AI interaction, information visualization.

Languages: Korean (native), English (fluent / professional).

SELECTED OPEN-SOURCE & ARTIFACTS

- CVLAT — Counterfactual Visualization Literacy Assessment Test: a benchmark for measuring how LVLMs arbitrate between visual evidence and factual priors. github.com/JaeyoungKim-HCIL/CVLAT

HONORS & SERVICE

- Reviewer, IEEE PacificVis 2024 (Journal Track / IEEE TVCG).
- BK21 Plus / BK21 FOUR Graduate Research Fellowship, Ministry of Education, Republic of Korea (2016, 2017, 2019, 2020).