Kang Yin

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Education

Korea University — Seoul, South Korea
Integrated M.S. & Ph.D. in Artificial Intelligence — *Mar. 2021 - Present*
- GPA: 4.22 / 4.5. AI Ph.D. student focused on **Physical AI**, **robot learning**, **object-centric world models**, **sequential modeling**, and **multimodal learning**.

Hohai University — Nanjing, China
B.Eng. in Internet of Things Engineering — *Sept. 2016 - Jun. 2020*
- GPA: 4.55 / 5.0. College Scholarship (Twice Top 3%).

Projects

Object-Centric World Model for Physics and Object Permanence | Project Page — Mar. 2026 – Present
- Designed benchmarks for physical dynamics prediction under occlusion, stochastic motion, and partial observability.
- Prototyped object-centric sequential models with belief-state modeling and rollout-consistency evaluation.
- Implemented PyTorch pipelines for quantitative evaluation, rollout visualization, and failure analysis.

Neuroadaptive Human-Agent System for Embodied Agent Safety | Project Page — Jun. 2024 – Nov. 2025
- Built simulated-city tasks for autonomous navigation and multi-agent monitoring with synchronized EEG, behavioral, audiovisual, and tactile data.
- Used ErrPs as implicit feedback and combined multimodal perception with Bayesian optimization for online adaptation, improving high-workload error detection and response speed.

Skin Tactile Decoding for Neural-Tactile Interface (MetaSkin) — Feb. 2024 – Jul. 2025
- Built a VR/AR pipeline to collect, synchronize, preprocess, and validate EEG from multi-site tactile stimuli.
- Developed real-time decoding of tapping, sliding, and pressing, with failure analysis for continuous handwriting input.

Representative Publications

NeuroLex: A Lightweight Domain Language Model for EEG Report Understanding and Generation — First author
International Conference on Brain-Computer Interface (BCI), 2026

EEG-based Multimodal Representation Learning for Emotion Recognition — First author
International Conference on Brain-Computer Interface (BCI), 2025

GITGAN: Generative Inter-subject Transfer for EEG Motor Imagery Analysis — First author
Pattern Recognition, 2024 — CAS Q1 Top

Towards Fine-Grained Interpretability: Counterfactual Explanations for Misclassification with Saliency Partition — Co-first author
Computer Vision and Pattern Recognition Conference (CVPR), 2025 — CCF-A

Cross-Modal Correspondence Improves ErrP Decoding in Multimodal BCIs — Second author
International Conference on Brain-Computer Interface (BCI), 2026

Awards

Chinese Government Scholarship, *China Scholarship Council* — 2024 – 2027
Natural Science and Engineering Scholarship, *Korea University* — 2021 – 2024
KU-GAG Scholarship, *Korea University* — 2024

Technical Skills

Programming & Tools: Python, PyTorch, NumPy, Pandas, Matplotlib, MATLAB, Linux, Docker, Git
Research: experiment design, model validation, failure analysis, visualization, sequential modeling, representation learning
Relevant AI Topics: robot learning, reinforcement learning, imitation learning, VLA/VLM-based planning
Languages: English, Korean