Jinyoon Kim

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GitHub — Website — LinkedIn

Education

University of Virginia (UVA) *M.S. Computer Science, 2025–2026*
Cumulative GPA: **3.94/4.00**
Pennsylvania State University *B.S. Computer Science, 2024*

Research Interests

Human-Robot Interaction · Embodied AI · Robotics · Computer Vision · Reinforcement Learning

Skills

Languages: Python, C++, Java, LaTeX
Technologies: PyTorch, OpenCV, Docker, Linux, Git, AWS

Publications / Research

J. Kim, Y. Kuo. *Affordance-Aware Humanoid Assistance in Photorealistic Embodied AI.*
Developing a mobile manipulation framework within **Meta's Habitat Lab** that enables humanoid agents to proactively assist humans. Implemented detailed, affordance-aware humanoid actions and trained agents to interpret human intent based on functional object properties in 3D environments. *In progress.*

J. Kim, M. Kabir. *Automated Image Segmentation Using Self-Iterative Training and Self-Supervised Learning with Uncertainty Scores. Book Chapter, Chapman & Hall/CRC*, 2025.

J. Kim, et al. *YOLO-SCSA: Enhanced YOLOv8 with Spatially Coordinated Shuffling Attention. ICMLA*, 2024.

Selected Projects

Text-Guided 3D Scene Editing: Volumetric Removal & Generative Addition

- Engineered an end-to-end pipeline for editing Mip-NeRF 360 scenes using **3D Gaussian Splatting** on the **nerfstudio** framework.
- Developed a custom **"Occlusion-Aware Lifting"** algorithm using **Grounding DINO** and **SAM 2** to bridge 2D semantics with 3D geometry for zero-shot object selection.
- Integrated **LaMa** and **GaussianDreamer** for multi-view consistent inpainting and generative 3D asset insertion.

Reinforcement Learning for Financial Reasoning (PPO, GRPO, RLOO)

- Designed a comprehensive RL pipeline to fine-tune Llama-3.2-3B and TinyLlama models on the **FinQA** dataset.
- Conducted an ablation study on **Deep Contextual RL** (PPO vs. GRPO) to solve generation failures, achieving a **+35% accuracy gain** for 1B-parameter models.

Experience

Intern, K&C Love Consulting Corp. (2024–2025). Supported ML workflows through data cleaning, organization, and documentation.

Awards

- Ackroyd Healthier Days Scholarship, 2024. Recognized for research improving patient health.
- Penn State CS Undergraduate Award, 2023. Honored for ICMLA 2023 publication.