

Jinyoon Kim

Charlottesville, VA | jinyoonok@gmail.com | (214) 463-4609
Website: research & project details | GitHub | LinkedIn

Education

University of Virginia

M.S. Computer Science, 2025–2027

Cumulative GPA: **3.963/4.00**

Pennsylvania State University

B.S. Computer Science, 2024

Research Interests

Embodied AI, part-guided manipulation, human–robot interaction, and visual understanding.

Current Research

Part-Guided Robotic Manipulation (Part2Action)

[GitHub]

Advised by Prof. Yen-Ling Kuo. Study how robots follow instructions about object parts to guide manipulation, with the goal of extending this work to human–robot interaction and assistance.

Long-Horizon Interactive Robotics

[GitHub]

Contribute to UVA Link Lab research linking navigation and physical interaction over longer task sequences, exploring robot foundation models for reliable interaction.

Selected Publications

J. Kim, et al. *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 Mechanisms for Skin Cancer Detection*. ICMLA, 2024.

Selected Projects

Medical Drone Landing-Pad Coordination (SMGLib)

[GitHub]

- Implemented priority-based coordination, holding orbits, negotiation, round-trip deliveries, and baseline trajectory planning; integrated collaborators' lookahead and LLM methods.

Text-Guided 3D Scene Editing

[GitHub]

- Built a 3D Gaussian Splatting pipeline for text-guided object removal and addition, combining occlusion-aware object selection, multi-view inpainting, and generative 3D assets.

Multi-GPU Training for 3D Gaussian Splatting

[GitHub]

- Extended Binh's multi-GPU framework with peer-to-peer sharing, asynchronous gradient reduction, and transfer overlap for scalable 3D scene training.

BGP Routing Threats and Route-Leak Detection

[GitHub]

- Built a BGP analysis pipeline to evaluate ASPA path validation and route-origin validation through historical incident replay and deployment-coverage studies.

Reinforcement Learning for Financial Reasoning

[GitHub]

- Developed an RL fine-tuning and evaluation pipeline for financial question answering, comparing policy optimization methods and reranking strategies across language models.

Technical Skills

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

Experience & Awards

Intern, K&C Love Consulting Corp. (2024–2025). Supported ML data preparation and documentation.

Awards: Ackroyd Healthier Days Scholarship (2024); Penn State CS Undergraduate Award (2023).