Jaemin Cho

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SUMMARY

M.S. student in Computer Science specializing in Spatial AI, 3D computer vision, and robot perception. My research focuses on visual localization, scene coordinate regression, omnidirectional camera geometry, and privacy leakage in learned 3D representations. I have experience across model inversion, cross-device visual localization, visual foundation models, and real-time 2D/3D human pose estimation.

EDUCATION

Stony Brook University *Aug. 2024 – Present*
M.S. in Computer Science (Advisor: François Rameau)

Inha University *Mar. 2018 – Jun. 2024*
B.E. in Electronic Engineering
Exchange student: Stony Brook University *Spring 2023*

PUBLICATIONS AND RESEARCH PROJECTS

Seeing Through the Weights: Privacy Leakage in Scene Coordinate Regression
Nasypanyi O*, **Cho J***, Ozbulak U, Kang B, Rameau F ECCV 2026

- Developed a domain-agnostic query-image attack that extracts private 3D scene geometry from scene coordinate regression models through API-level prediction probing.
- Estimated prediction stability using Gaussian perturbations of proxy features and feature optimization, recovering locally consistent 3D structure across four representative SCR architectures.
- Demonstrated privacy leakage with Chamfer distances below 2cm on indoor scenes and 0.3m on outdoor scenes, challenging the assumption that SCR-based localization models are privacy-preserving.

Ray Scene Coordinate Regression for Cross-device Omnidirectional Visual Localization
Cho J, Nasypanyi O, Kang B, Rameau F *In progress*

- Conditioned image-centric visual feature on calibration-derived bearing geometry to represent heterogeneous camera observations in a unified ray-based coordinate space.
- Achieved state-of-the-art accuracy by reducing average median translation and rotation errors by 27.4% and 55.8% on day-night queries.

RESEARCH AND INDUSTRY EXPERIENCE

Korea Electric Power Corporation Research Institute *Sep. 2023 – Feb. 2024*
Research Internship, Supervisor: Changhun Chae

- Reduced latency by 7ms and computation by 30M MAdds in a MobileNetV3-based 2D pose estimation pipeline through lightweight attention for real-time risk assessment.
- Customized a 3D pose estimation model (3DMPPE) for real-time risk assessment in electrical safety training, adapting ergonomic evaluation criteria to detect hazardous trainee postures.
- Implemented a multimodal 3D pose estimation pipeline for a VR safety training system by integrating multi-camera and IMU sensors for real-time tracking.

Visionin *Jul. 2023 – Aug. 2023*
AI Engineer Internship

- Improved fire detection mAP by 6% and reduced false alarms by 9% through iterative data refinement and fine-tuning of a YOLOv4 object detection model deployed across 19 Lotte Department Store CCTVs.

HONORS AND AWARDS

President's Award, SBU Graduate Research Challenge, SUNY Korea *Nov. 2025*
Awarded for research poster on privacy leakage in scene coordinate regression for visual localization

Graduate Research Assistantship, SBU SUNY Korea *Aug. 2024 –*
Full tuition and stipend, funded by MSIT Regional Intelligence Innovation Talent Development Program

President's Award, Inha University, Industry-driven Capstone Design Contest *Jun. 2022*
Anti-Money Laundering Challenge Hackathon Winner, 5th Annual Nepal AI School *Jan. 2025*

TECHNICAL SKILLS

Languages: Python, C/C++, CUDA
Frameworks: PyTorch, PyTorch3D, OpenCV, Open3D, NumPy, pandas, Trimesh
3D Vision Models: NeRF, Dust3R, VGGT (Visual Geometry Grounded Transformer)
Tools: Git, GitHub, Docker, ROS, Linux, Blender. CloudCompare, MeshLab, LaTeX

ADDITIONAL EXPERIENCE

5th Annual Nepal AI School (ANAIS) *Dec. 2024 – Jan. 2025*
Mentor, Anti-Money Laundering Challenge Hackathon

- Mentored four undergraduate students on graph algorithms and Neo4j visualization, leading the team to win the hackathon.

Honeywell Korea CO Detector, Capstone Contest *Mar. 2022 – Jun. 2022*

- Designed an ARM Cortex-M3–based CO detector with embedded C firmware for real-time sensing and alarm control.

MILITARY SERVICE

KATUSA (Korean Augmentation to the United States Army) *2019 – 2021*
Sergeant, Human Resource Specialist