Jaemin Cho

Website — jaemin.cho@stonybrook.edu — LinkedIn — GitHub

SUMMARY

M.S. student in Computer Science with a research focus on Spatial AI, spanning 3D computer vision, visual foundation models, and robot perception. Experienced in privacy-preserving scene encoding for visual re-localization, omnidirectional perception, and 2D/3D human pose estimation.

EDUCATION

Stony Brook University *Aug. 2024 – Present*
M.S. in Computer Science GPA: 3.84/4.0

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

RESEARCH EXPERIENCE

3D Vision Lab, Stony Brook University (SUNY Korea) *Aug. 2024 – Present*
Research Assistant, PI: Prof. François Rameau

Seeing Through the Weights: Privacy Leakage in Scene Coordinate Regression
Co-first author, under review at ECCV 2026

- Developed an API-based, domain-agnostic query-image attack on scene coordinate regression (SCR) models for visual localization. The method uses Gaussian perturbations of proxy features to estimate prediction stability, optimizes features when gradients are available, and yields locally consistent 3D structure.
- Reconstructed private scene geometry across four representative SCR architectures, with Chamfer distances below 2 cm on indoor scenes and 0.3 m on outdoor scenes, challenging the assumption that SCR-based visual localization models are privacy-preserving.
- Recovered approximate scene appearance from reconstructed geometry via a feature inversion network that refines noisy proxy-induced descriptors with a five-block Transformer encoder and generates novel-view images through a convolutional upsampling decoder.

Omni-directional Scene Coordinate Regression for 360° Visual Localization

- Developed a camera-aware canonical projection and pose-rotated view generation pipeline for SCR, enabling cross-device compatibility and improving robustness over prior baselines.

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

Hyper-realistic Safety Training System (immerseLearn)
Winner, Best Education & Training Solution, AWE USA 2024

- 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.

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

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.

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

- Supervised four Nepal undergraduate students on graph algorithms and Neo4j visualization, leading the hackathon winning team

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

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

MILITARY SERVICE

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