Anh Thuan Tran

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Summary

PhD Student @ GMU | 3D Vision, RGB-D SLAM, 3D Gaussian Splatting, Neural Scene Representations.

Education

George Mason University — Virginia, USA
Ph.D in Computer Science | Advisor: Prof. Jana Kosecka — Sep 2024 – Exp. May 2029

Pukyong National University — Busan, South Korea
M.Eng. in Artificial Intelligence Convergence | GPA: 3.89 — Mar 2022 – Feb 2024

Vietnam National University — Ho Chi Minh City, Vietnam
B.Ec. in E-commerce | GPA: 3.42 (Thesis track) — Sep 2017 – Jul 2021

Publications

[1] **Anh Thuan Tran** and Jana Kosecka. VarSplat: Uncertainty-aware 3D Gaussian Splatting for Robust RGB-D SLAM. In *CVPR*, 2026. [PDF | Project Page].

[2] **Anh Thuan Tran** and Jana Kosecka. PointSplat: Efficient Geometry-Driven Pruning and Transformer Refinement for 3D Gaussian Splatting. In *Under Review (CVPRW)*, 2026. [PDF].

[3] **Anh-Thuan Tran**, Hoanh-Su Le, Suk-Hwan Lee, and Ki-Ryong Kwon. PointCT: Point Central Transformer Network for Weakly-Supervised Point Cloud Semantic Segmentation. In *WACV*, pages 3556–3565, 2024. [PDF | Code].

Research Experience

Artificial Intelligence and Database Lab — GMU, USA
Graduate Research Assistant — Sep 2024 – Present

- **VarSplat** (SLAM & Uncertainty): Built an uncertainty-aware RGB-D 3DGS-SLAM system, rendering per-pixel uncertainty for robust tracking and mapping under challenging conditions.
- **PointSplat** (Pruning): Developed geometry-driven pruning and refinement for 3D Gaussians in medium-scale indoor scenes with Point Transformer network.
- Dynamic 3DGS (Ongoing): Developing uncertainty-aware 3DGS for both short-term and long-term changes in online and monocular settings.
- Sparse Reconstruction (Ongoing): Building method that constrains generative priors with underlying geometry through uncertainty modeling for 3DGS sparse-view reconstruction.
- Open-Vocabulary 3DGS: Implemented vision-language baseline by integrating LSeg features or CLIP with DINOv2 and SAM into 3D Gaussian attributes.

Multimedia Signal Processing Lab PKNU, South Korea
Graduate Research Assistant Mar 2022 – Feb 2024

- **PointCT**: Proposed point-based Transformer network for weakly-supervised point cloud segmentation.
- Developed central-based attention block to integrate global features across neighborhoods, and improve unlabeled point representations.

Skills

- **Programming:** Python
- **Frameworks:** PyTorch, OpenCV, NumPy
- **3D Vision/Graphics:** 3D Gaussian Splatting, NeRF, RGB-D SLAM, Point Clouds, Point Transformers, Differentiable Rasterization, NeRFStudio
- **Systems:** Linux/Ubuntu, Slurm, Multi-GPU training
- **Vision Foundation Models:** CLIP, DINOv2, SAM
- **Other:** PostgreSQL, FAISS

Scholarships

- Graduate Teaching Assistant, George Mason University (Sep 2024 - Present)
- Brain Korea 21, Graduate Student Research Scholarship (Artificial Intelligence Convergence Research Group), Pukyong National University (Mar 2022 - Feb 2024)
- Full-time Scholarship For Graduate Student, Pukyong National University (Mar 2022 - Feb 2024)
- Graduate student scholarship, Pukyong National University (Sep 2022 - Feb 2023)

Work Experience

Newgen I&S Busan, South Korea
AI Researcher Jan 2024 – Jul 2024

- Developed offline chatbots for marine industry using LangChain and Ollama to process bilingual (English–Korean) PDFs.
- Processed text with FAISS, updated PostgreSQL, and LLM responses with top-k retrieval.
- Deployed system on server with WebSocket for real-time communication.

Awards

- Outstanding International Student Award - Pukyong National University (2024)
- Excellent achievement in undergraduate research – VNU-HCM (2022)
- Third Prize Young Scientist – University of Economics and Law, VNU-HCM (2018, 2020)