# Visual & Geometric Intelligence Lab

Dept. of Computer Science Engineering
Seoul National University

Website

## Lab info.



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- **Work Experiences**
  - Intel (Staff Research Scientist)
  - POSTECH (Assistant & Associate Prof.)
- **Research Interests**
  - 3D Perception
  - Image Synthesis
  - Computer Vision Topics
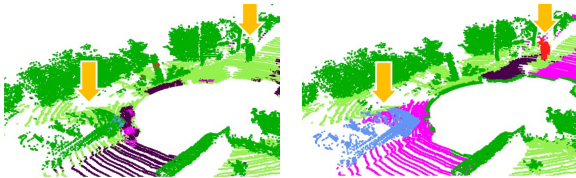- **Collaboration** (as of now)

Adobe   NVIDIA   Caltech
HYUNDAI   SAMSUNG   LG   intel

7 Ph.D, 2 M.S. students

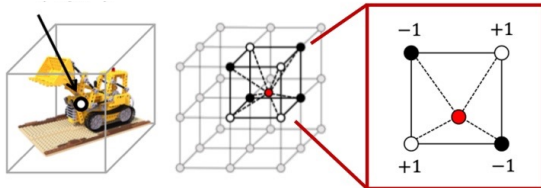*We are looking for **self-motivated** students for the internship!* 🤗
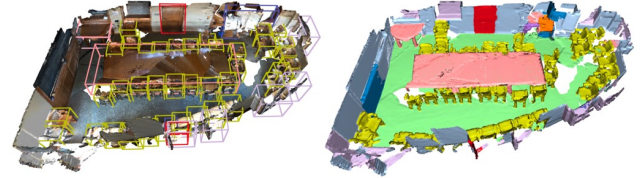
## 3D Reconstruction and Recognition

**LiDomAug (CVPR 2023)**
- **Simple & realistic augmentation** for *sensor-biased LiDAR* segmentation
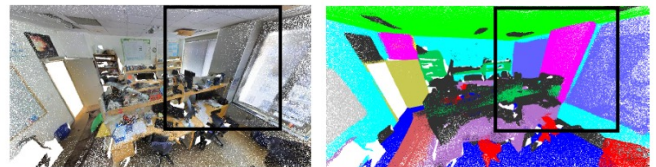
**Binary Radiance Fields (NeurIPS 2023)**
- A **storage-efficient radiance field representation** employing binary feature encoding

**Fast Point Transformer (CVPR 2022)**
- **Lightweight transformer** architecture for 3D semantic segmentation

**PointMixer (ECCV 2022)**
- Point-based general architecture for point cloud understanding

## Image Synthesis

**GigaGAN (CVPR 2023 Highlight)**
- Text-to-Image generation
- **Larger** architecture
- **Bigger** dataset
- Matches **SOTA** DPMs
- 4K Upsampler

A portrait of a human growing colorful flowers from her hair. Hyperrealistic oil painting. Intricate details.
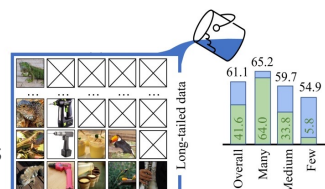
**StudioGAN (TPAMI 2023)**
- GANs implementation
- GANs **benchmark**
- **Open-source** library (3.3k⭐)

PYTORCH StudioGAN

**Fill-Up (arXiv 2023)**
- DPMs to handle **data imbalance**
- Train using **synthetic images**
- **Two-stage** training

## Computer Vision Topics

**RISCLIP (arXiv 2023)**
- Referring Image Segmentation
- **Multi-modal** (text-image) network
- **Inter-instances relations** understanding

A man kneeling with his hand on the handle of the bat

The face of the clock tower is in the shadow

Widest glass vase

**InstaOrder (CVPR 2022)**
- New **dataset** : ~110k images
- Predicting **occlusion** and **depth orderings**
- **Scene geometry** understanding