ANG CAO

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2260 Hayward St, Ann Arbor, MI 48109

EDUCATION

University of Michigan, Ann Arbor *2020-present*
Ph.D., Computer Science and Engineering GPA 4.0/4.0
Advisor: Prof. *Justin Johnson*, Prof. *JJ Park*

University of Michigan, Ann Arbor *2018-2020*
Master of Science, Electrical and Computer Engineering GPA 4.0/4.0
Signal & Image Processing and Machine Learning track (SIPML)

Wuhan University *2014-2018*
Bachelor of Science in Electrical Engineering GPA 3.9/4.0

RESEARCH INTERESTS

I work on generative models and 3D vision. I am interested in creating realistic 3D world and world modeling: *highly efficient* 3D/4D reconstruction and generation from 2D images, injecting world knowledge into 3D/4D generation and understanding from *2D foundation models* like VLMs or diffusion models.

EXPERIENCE

Meta GenAI Research *June 2023 - Nov. 2023*
Research Scientist Intern Mentor: *David Novotny, Andrea Vedaldi*
Propose a unified framework for feedforward 3D reconstruction and generation;
Build a GPU Programming kernel to save the memory usage by 1000-10000x.

Embodied AI, FAIR, Meta *May 2024 - Nov. 2024*
Research Scientist Intern Mentor: *Sasha Sax*
Train a 3D-Language Grounding model from 2D VLMs supervision.

PUBLICATIONS

(* indicates equal contribution)

1. **From Thousands to Billions: 3D Visual Language Grounding via Render-Supervised Distillation from 2D VLMs**
   Ang Cao, Sergio Arnaud, ..., Alexander Sax
   ICML, 2025, Project Page

2. **Probing Visual Language Priors in VLMs**
   Tiange Luo*, **Ang Cao***, Gunhee Lee, Justin Johnson, Honglak Lee
   ICML, 2025, Project Page

3. **Locate 3D: Real-World Object Localization via Self-Supervised Learning in 3D**
   Meta Fundamental AI Research, Embodied AI Team
   ICML, 2025, Project Page

4. **Fast3R: Towards 3D Reconstruction of 1000+ Images in One Forward Pass**
   Jianing Yang, Alexander Sax, Kevin J. Liang, Mikael Henaff, Hao Tang, **Ang Cao**, Joyce Chai, Franziska Meier, Matt Feiszli
   CVPR, 2025, Project Page

5. **Meta 3D Gen**
   Technical Report, 2024, Project Page

6. **Lightplane: Highly-Scalable Components for Neural 3D Fields**
   Ang Cao, Justin Johnson, Andrea Vedaldi, David Novotny
   3DV, 2025 Project Page

7. **DreamGaussian4D: Generative 4D Gaussian Splatting for Dynamic Scene Reconstruction**
   Jiawei Ren*, Liang Pan*, Jiaxiang Tang, Chi Zhang, **Ang Cao**, Gang Zeng, Ziwei Liu†
   CVPR, 2024 Project Page

8. **Text2room: Extracting Textured 3D Meshes from 2D Text-to-Image Models**
   Lukas Höllein*, **Ang Cao***, Andrew Owens, Justin Johnson, Matthias Nießner
   ICCV, 2023, **Oral** (1.68% acceptance rate) Project Page

9. **HexPlane: A Fast Representation for Dynamic Scenes**
   Ang Cao, Justin Johnson
   CVPR, 2023, Project Page

10. **FWD: Real-time Novel View Synthesis with Forward Warping and Depth"**
    Ang Cao, Chris Rockwell, Justin Johnson
    CVPR, 2022, Project Page

11. **Inverting and Understanding Object Detector**
    Ang Cao, Justin Johnson
    Tech Report, 2021

12. **Unified Signal Compression Using Generative Adversarial Networks**
    Bowen Liu*, **Ang Cao***, Hun-Seok Kim
    ICASSP, 2020

AWARDS AND RECOGNITIONS

Rackham Travel Grant, University of Michigan 2023
Rollin M. Gerstacker Foundation Fellowships, University of Michigan 2020
China National Scholarship 2016, 2017
Outstanding Graduate of Wuhan University 2018
Meritorious Winner of American Mathematical Contest in Modeling 2017
National Undergraduate Innovation Foundation by Chinese Ministry of Education 2016

ACTIVITIES

AI4ALL, University of Michigan 2021
Summer program aimed at providing an entry point to artificial intelligence, computer science and engineering to high school students from under-represented backgrounds.

Teaching Assistant Fall 2024
EECS 498/598: Computer Graphics and Generative Models, University of Michigan

REVIEWER

CVPR *2022-2025,* ***NeurIPS*** *2023-2024,* ***ICLR*** *2023-2024,* ***ECCV*** *2022, 2024,* ***ICCV*** *2023.*
IEEE Transactions on Pattern Analysis and Machine Intelligence (**TPAMI**)
IEEE Transactions on Visualization and Computer Graphics (**TVCG**)