

# ANG CAO

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## RESEARCH INTERESTS

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My primary interest is computer vision and machine learning, especially 3D vision. In particular, I am interested in empowering 3D/4D vision with 2D information, employing Differentiable Rendering and Generative Models. I am also interested in spatial intelligence and Embodied AI.

## EDUCATION

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<b>University of Michigan, Ann Arbor</b>	<i>2020-present</i>
Ph.D., Computer Science and Engineering	GPA 4.0/4.0
Advisor: Prof. <i>Justin Johnson</i> , Prof. <i>JJ Park</i>	
<b>University of Michigan, Ann Arbor</b>	<i>2018-2020</i>
Master of Science, Electrical and Computer Engineering	GPA 4.0/4.0
Signal & Image Processing and Machine Learning track (SIPML)	
<b>Wuhan University</b>	<i>2014-2018</i>
Bachelor of Science in Electrical Engineering	GPA 3.9/4.0

## EXPERIENCE

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<b>Meta GenAI Research</b>	<i>June 2023 - Nov. 2023</i>
Research Scientist Intern	Mentor: <i>David Novotny, Andrea Vedaldi</i>
We build a pair of instrumental components for 3D neural fields, which scales the 2D-3D mapping by orders of magnitudes. Based on these components, we build a general framework for 3D reconstruction and generation, leading to impressive results.	
<b>Embodied AI, FAIR, Meta</b>	<i>May 2024 - Nov. 2024</i>
Research Scientist Intern	Mentor: <i>Sasha Sax</i>
We utilize differentiable rendering to obtain spatial intelligence.	

## PREPRINTS

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“**vVLM: Exploring Visual Reasoning in VLMs against Language Priors**”  
Tiange Luo\*, **Ang Cao\***, Gunhee Lee, Justin Johnson, Honglak Lee  
*In Submission, 2024*

## PUBLICATIONS

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(\* indicates equal contribution)

**Meta 3D Gen**  
Technical Report, 2024  
[Project Page](#)

“**Lightplane: Highly-Scalable Components for Neural 3D Fields**”  
**Ang Cao**, Justin Johnson, Andrea Vedaldi, David Novotny  
*3DV*, 2025  
[Project Page](#)

**“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](#)

**“Text2room: Extracting Textured 3D Meshes from 2D Text-to-Image Models”**

Lukas Höllein\*, **Ang Cao\***, Andrew Owens, Justin Johnson, Matthias Nießner  
International Conference on Computer Vision, *ICCV 2023*, **Oral**

[Project Page](#)

**“HexPlane: A Fast Representation for Dynamic Scenes”**

**Ang Cao**, Justin Johnson

Computer Vision and Pattern Recognition Conference, *CVPR 2023*

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**“FWD: Real-time Novel View Synthesis with Forward Warping and Depth”**

**Ang Cao**, Chris Rockwell, Justin Johnson

Computer Vision and Pattern Recognition Conference, *CVPR 2022*

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**“Inverting and Understanding Object Detector”**

**Ang Cao**, Justin Johnson

Tech Report 2021

**“Unified Signal Compression Using Generative Adversarial Networks”**

Bowen Liu\*, **Ang Cao\***, Hun-Seok Kim

45th International Conference on Acoustics, Speech, and Signal Processing, *ICASSP 2020*, **Oral**.

## AWARDS AND RECOGNITIONS

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<b>Rackham Travel Grant</b> , University of Michigan	2023
<b>Rollin M. Gerstacker Foundation Fellowships</b> , University of Michigan	2020
<b>China National Scholarship</b> , award for top 2% Chinese undergraduate	2016, 2017
<b>Outstanding Graduate of Wuhan University</b>	2018
<b>Meritorious Winner of American Mathematical Contest in Modeling</b>	2017
<b>National Undergraduate Innovation Foundation</b> by Chinese Ministry of Education	2016

## ACTIVITIES

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**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

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*CVPR 2022-2025, NeurIPS 2023, ICLR 2023-2024, ECCV 2022, ICCV 2023.*

IEEE Transactions on Pattern Analysis and Machine Intelligence (**TPAMI**)

IEEE Transactions on Visualization and Computer Graphics (**TVCG**)