

Chen Yang

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Education

- Sep 2021 – Jun 2025(expected) 📖 **Ph.D. in Computer Science, Shanghai Jiao Tong University**
Ph.D. Advisor: *Prof. Wei Shen*
Laboratory: *Key Lab of Artificial Intelligence, Ministry of Education*
- Sep 2019 – Jun 2021 📖 **M.A. in Precision Instrument, Shanghai Jiao Tong University**
GPA: 3.76/4.0 | Top 10%
- Sep 2015 – Jun 2019 📖 **B.A. in Precision Instrument, Shanghai Jiao Tong University**
GPA: 3.91/4.3 | Top 30%

Selected Research Projects

- 2024 📖 **LiftImage3D: Lifting Any Single Image to 3D Gaussians with Video Generation Priors**
★ LiftImage3D is a framework that effectively releases the generative priors of latent video diffusion models (LVDMs) while ensuring 3D consistency; can lift arbitrary 2D images into high-quality 3D scenes composed of 3D Gaussians.
★ Project lead by *Dr. Jiemin Fang and Dr. Qi Tian*.
★ Submitted to *CVPR 2025*
- 2023 – 2024 📖 **GaussianObject: High-Quality 3D Object Reconstruction from Four Views with Gaussian Splatting**
★ Aiming to reconstruct finely detailed objects from very sparse inputs (as few as 4 images). Leveraging 3DGS as scene representation and refining a pre-trained diffusion model for strong priors.
★ Project lead by *Prof. Wei Shen and Dr. Jiemin Fang*.
★ Accepted by *ACM Transactions on Graphics (TOG), SIGGRAPH Asia 2024*.
- 2023 – 2024 📖 **EndoGSLAM: Real-Time Dense Reconstruction and Tracking in Endoscopic Surgeries using Gaussian Splatting**
★ Developing a novel SLAM approach for endoscopic surgeries that achieves over 100 fps rendering speed during online camera tracking and tissue reconstruction using stream-lined 3D Gaussians.
★ Project lead by *Prof. Wei Shen*.
★ Accepted by *MICCAI 2024*.
- 2023 📖 **Segment Anything in 3D with NeRFs**
★ Leveraging SAM (Segment Anything) to segment NeRFs, provide a generic method to lift 2D foundation models to the 3D space.
★ Project lead by *Dr. Jiemin Fang and Prof. Wei Shen*.
★ Accepted by *NeurIPS 2023*.

Selected Research Projects (continued)

- 2022 – 2023  **Efficient Deformable Tissue Reconstruction via Orthogonal Neural Plane**
★ Accelerated the optimization and inference on reconstructing deformable tissues with NeRFs, improving efficiency and quality across non-rigid deformations.
★ Project lead by *Prof. Wei Shen*.
★ Accepted by *MICCAI 2023, Young Scientist Award* and *IEEE Transactions on Medical Imaging (TMI)*. Inspired 20+ publications on dynamic tissue reconstruction.
- 2021 – 2022  **NeRFVS: Neural Radiance Fields for Free View Synthesis via Geometry Scaffolds**
★ Designed a novel approach enabling neural radiance fields to perform free view synthesis at room scale and perform superior extrapolation in room scale.
★ Project lead by *Dr. Weichao Qiu* and *Prof. Wei Shen*.
★ Accepted by *CVPR 2023*.

Internship Experience

- 2023 – 2024  **3D Vision Intern, Huawei Cloud**, mentored by *Dr. Jiemin Fang* and *Dr. Qi Tian*
★ Designed and implemented GaussianObject project, which enables high-quality 3D object reconstruction from very sparse inputs (as few as 4 images);
★ Paper accepted by SIGGRAPH Asia 2024 (TOG), work is open-sourced and widely recognized (900+ GitHub Stars).
- 2021 – 2022  **Machine Vision Intern, Huawei Noah's Ark Lab**, mentored by *Dr. Weichao Qiu*
★ Designed and implemented NeRFVS project, significantly improving the extrapolation capability of neural radiance fields;
★ Proposed geometry scaffolds method, substantially enhancing scene reconstruction quality and extrapolation performance, paper accepted by CVPR 2023.

Awards and Achievements

- 2023  **MICCAI Young Scientist Award**, Awarded top 5 among 2250 submissions.
 **Intel Scholarship**, Awarded top 5 among over 100 competitors.
- 2022  **Second Prize of National Post-Graduate Mathematical Contest in Modeling**, Awarded to top 14.5% of contestants.
- 2021  **National Scholarship**, Awarded to top 3% of students at Shanghai Jiao Tong University.
 **First Prize of Huawei Chinese University ICT Competition**, Awarded top 1 among 88 teams.
- 2019 – 2021  **First-class Academic Scholarship**, Awarded to top 30% of students at Shanghai Jiao Tong University.

Research Publications

- 1 C. Yang*, S. Li*, J. Fang, et al., "Gaussianobject: Just taking four images to get a high-quality 3d object with gaussian splatting," *ACM TOG*, 2024.
- 2 C. Yang, K. Wang, Y. Wang, X. Yang, and W. Shen, "Neural lerplane representations for fast 4d reconstruction of deformable tissues," in *MICCAI, Young Scientist Award*, Springer Nature Switzerland Cham, 2023, pp. 46–56.
- 3 C. Yang, P. Li, Z. Zhou, et al., "Nerfvs: Neural radiance fields for free view synthesis via geometry scaffolds," in *CVPR*, 2023, pp. 16 549–16 558.

- 4 C. Yang, K. Wang, Y. Wang, Q. Dou, X. Yang, and W. Shen, "Efficient deformable tissue reconstruction via orthogonal neural plane," *IEEE TMI*, 2024.
- 5 C. Yang*, K. Wang*, Y. Wang, et al., "Endogslam: Real-time dense reconstruction and tracking in endoscopic surgeries using gaussian splatting," in *MICCAI*, Springer, 2024, pp. 219–229.
- 6 C. Yang, S.-Y. Yao, Z.-W. Zhou, B. Ji, G.-T. Zhai, and W. Shen, "Pixture: Human posture imitation using neural texture," *IEEE TCSVT*, vol. 32, no. 12, pp. 8537–8549, 2022.
- 7 C. Yang*, H. Zhao*, H. Wang, and W. Shen, "Chase: 3d-consistent human avatars with sparse inputs via gaussian splatting and contrastive learning," arXiv preprint arXiv:2408.09663, 2024.
- 8 K. Wang*, C. Yang*, K. Zhao, X. Yang, and W. Shen, "Realistic surgical simulation from monocular videos," arXiv preprint, 2024.
- 9 Y. Chen*, C. Yang*, J. Fang, et al., "Liftimage3d: Lifting any single image to 3d gaussians with video generation priors," arXiv preprint, 2024.
- 10 H. Zhao*, C. Yang*, H. Wang, X. Zhao, and W. Shen, "Sg-gs: Photo-realistic animatable human avatars with semantically-guided gaussian splatting," arXiv preprint arXiv:2408.09665, 2024.
- 11 B. Ji, C. Yang, Y. Shunyu, and Y. Pan, "Hpof: 3d human pose recovery from monocular video with optical flow," in *ICMR*, 2021, pp. 144–154.
- 12 P. Li, S. Wang, C. Yang, B. Liu, W. Qiu, and H. Wang, "Nerf-ms: Neural radiance fields with multi-sequence," in *ICCV*, 2023, pp. 18 591–18 600.
- 13 J. Cen, J. Fang, C. Yang, et al., "Segment any 3d gaussians," in *AAAI*, 2024.
- 14 R. Liang, J. Zhang, H. Li, C. Yang, Y. Guan, and N. Vijaykumar, "Spidr: Sdf-based neural point fields for illumination and deformation," *CVPRW*, 2023.
- 15 Y. Yan, Z. Zhou, Z. Wang, C. Yang, J. Gao, and X. Yang, "Dialoguenerf: Towards realistic avatar face-to-face conversation video generation," *Visual Intelligence*, vol. 2, no. 1, p. 24, 2024.
- 16 J. Cen, Z. Zhou, J. Fang, C. Yang, et al., "Segment anything in 3d with nerfs," *NeurIPS*, vol. 36, pp. 25 971–25 990, 2023.
- 17 J. Lu, T. Yi, J. Fang, C. Yang, et al., "Snap-snap: Taking two images to reconstruct 3d human gaussians in milliseconds," arXiv preprint, 2024.
- 18 Z. Zhou, R. Zhong, C. Yang, Y. Wang, X. Yang, and W. Shen, "A k-variate time series is worth k words: Evolution of the vanilla transformer architecture for long-term multivariate time series forecasting," arXiv preprint arXiv:2212.02789, 2022.

Skills

Programming Languages	Python, C, C++, Matlab
Software & Tools	PyTorch, OpenCV, OpenGL, L ^A T _E X, Jax, COMSOL

Academic Services

Conference Reviewer	CVPR '23, '24; ICCV '23; NeurIPS '23, '24; ECCV '24; AAAI '25; MICCAI '23, '24
Journal Reviewer	TOG; TMI; TCSVT; TOMM

Academic Services (continued)

Teaching Assistant

- Spr. 2019: **MI 321**: Course Design of Instrument Bus and Virtual Env.
 - ★ Guided students in bus programming and virtual instrument development projects.
- Fa. 2020: **MI 318**: Measuring and Controlling Circuit
 - ★ Facilitated lab sessions and assisted students with hands-on circuit experiences.
- Spr. 2021: **EE 334**: Industrial Measurement and Control Tech. and Sys.
 - ★ Guided students through industrial measurement processes and control technologies.