Chen Yang

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Education

Sep 2021 – Present **Ph.D. in Computer Science, Shanghai Jiao Tong University**
Ph.D. Advisor: ***Wei Shen***

Sep 2019 – Jun 2021 **M.A. in Precision Instrument, Shanghai Jiao Tong University**
GPA: 3.76/4.0

Sep 2015 – Jun 2019 **B.A. in Precision Instrument, Shanghai Jiao Tong University**
GPA: 3.91/4.3

Selected Research Projects

2023 – 2024 **GaussianObject: Just Taking Four Images to Get A High-Quality 3D Object**

- 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 ***Wei Shen*** and ***Jiemin Fang***.
- Accepted by ***ACM Transactions on Graphics (TOG), SIGGRAPH Asia 2024***.

2023 **Segment Anything in 3D with NeRFs**

- Leveraged SAM (Segment Anything) to segment NeRFs, providing a simplified pipeline for efficient 3D segmentation. The project shows a generic methodology to lift 2D foundation models to the 3D space.
- Project lead by ***Wei Shen***
- Accepted by ***NeurIPS 2023***.

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 ***Wei Shen***.
- Accepted by ***MICCAI 2023, Young Scientist Award*** and ***IEEE Transactions on Medical Imaging (TMI)***.

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 ***Weichao Qiu*** and ***Wei Shen***.
- Accepted by ***CVPR 2023***.

Skills

Programming Languages	Python, C, C++, Matlab
Software & Tools	PyTorch, OpenCV, OpenGL, LaTeX, Jax, COMSOL

Teaching Experience

- Spring 2019 — **Teaching Assistant, MI 321: Course Design of Instrument Bus and Virtual Environment**, Shanghai Jiao Tong University
- Fall 2020 — **Teaching Assistant, MI 318: Measuring and Controlling Circuit**, Shanghai Jiao Tong University
- Spring 2021 — **Teaching Assistant, EE 334: Industrial Measurement and Control Technology and System**, Shanghai Jiao Tong University

Internship Experience

- 2023 – 2024 — **3D Vision Intern, Huawei Cloud** mentored by ***Jiemin Fang*** and ***Qi Tian***.
- 2021 – 2022 — **Machine Vision Intern, Huawei Noah's Ark Lab** mentored by ***Weichao Qiu***.

Awards and Achievements

- 2023 — **MICCAI Young Scientist Award**, Awarded top 5 among 2250 submissions.
- 2023 — **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.
- 2021 — **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.

Publications

1. **Yang, C.**, Li, S., Fang, J., Liang, R., Xie, L., Zhang, X., ... & Tian, Q. *GaussianObject: Just Taking Four Images to Get A High-Quality 3D Object with Gaussian Splatting.* ACM Transactions on Graphics (TOG), 2024.
2. Wang, K., **Yang, C.**, Wang, Y., Li, S., Wang, Y., Dou, Q., Yang, X., & Shen, W. *EndoGSLAM: Real-Time Dense Reconstruction and Tracking in Endoscopic Surgeries using Gaussian Splatting.* MICCAI, 2024.
3. Cen, J., Fang, J., **Yang, C.**, Xie, L., Zhang, X., Shen, W., & Tian, Q. *Segment any 3d gaussians.* arXiv preprint arXiv:2312.00860, 2023.
4. **Yang, C.**, Wang, K., Wang, Y., Dou, Q., Yang, X., & Shen, W. *Efficient deformable tissue reconstruction via orthogonal neural plane.* IEEE Transactions on Medical Imaging (TMI), 2024.
5. Cen, J., Zhou, Z., Fang, J., **Yang, C.**, Shen, W., Xie, L., Jiang, D., Zhang, X., & Tian, Q. (2023). *Segment Anything in 3D with Radiance Fields.* NeurIPS, 2023.
6. Li, P., Wang, S., **Yang, C.**, Liu, B., Qiu, W., & Wang, H. *NeRF-MS: Neural Radiance Fields with Multi-Sequence.* ICCV, 2023.
7. **Yang, C.**, Wang, K., Wang, Y., Yang, X., & Shen, W. *Neural LerPlane Representations for Fast 4D Reconstruction of Deformable Tissues.* MICCAI, 2023.

Publications (continued)

8 **Yang, C.**, Li, P., Zhou, Z., Yuan, S., Liu, B., Yang, X., ... & Shen, W. *NeRFVS: Neural Radiance Fields for Free View Synthesis via Geometry Scaffolds.* CVPR, 2023.

9 Liang, R., Zhang, J., Li, H., **Yang, C.**, & Vijaykumar, N. *SPIDR: SDF-based Neural Point Fields for Illumination and Deformation.* CVPR workshop, 2023.

10 **Yang, C.**, Yao, S. Y., Zhou, Z. W., Ji, B., Zhai, G. T., & Shen, W. *Poxture: Human Posture Imitation Using Neural Texture.* IEEE Transactions on Circuits and Systems for Video Technology (TCSVT), 2022.

11 Zhou, Z., Wang, Z., Yao, S., Yan, Y., **Yang, C.**, Zhai, G., ... & Yang, X. *DialogueNeRF: Towards Realistic Avatar Face-to-face Conversation Video Generation.* arXiv preprint arXiv:2203.07931, 2022.

12 Ji, B., **Yang, C.**, Shunyu, Y., & Pan, Y. *HPOF: 3d human pose recovery from monocular video with optical flow.* ICMR, 2021.