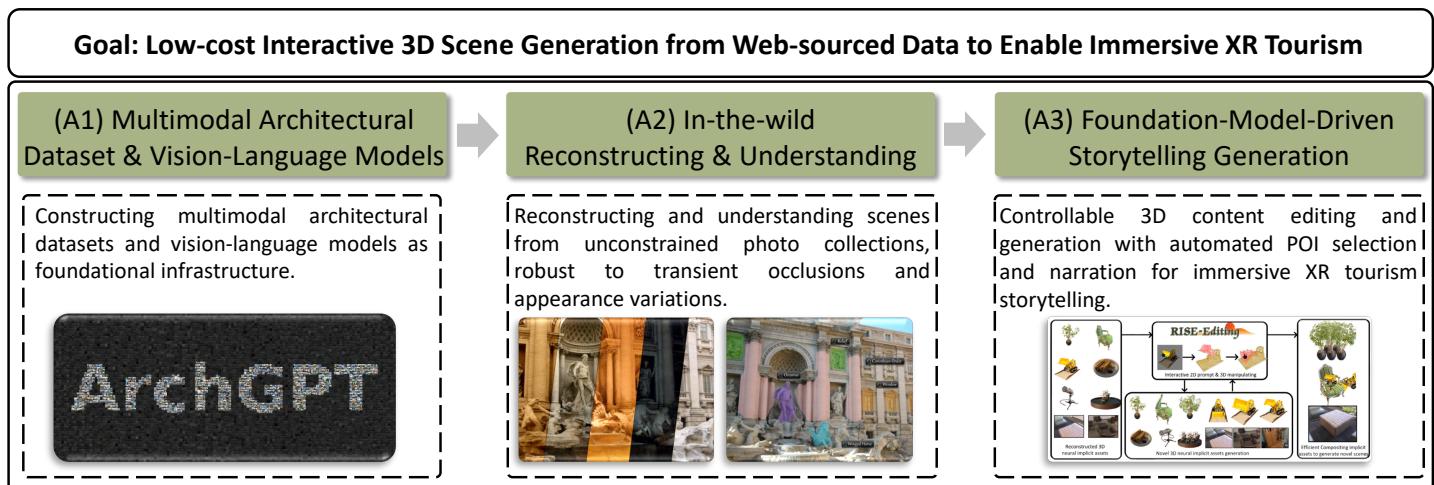


# Yuze Wang

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## RESEARCH SUMMARY



My research combines Computer Vision (CV), Computer Graphics (CG), and Extended Reality (XR) techniques to enable low-cost, interactive 3D scene generation from web-sourced multimodal data, with the long-term goal of powering immersive XR tourism experiences. Specifically, I pursue three complementary directions. **(A1) Multimodal Architectural Datasets & Vision-Language Models:** To address the scarcity of high-quality architectural VQA resources, I construct Arch-200K, a large-scale dataset with high-quality VQA pairs covering architectural style, aesthetic analysis, and component-level understanding. Building on this dataset, I further train ArchGPT-7B, a domain-specific vision-language model that provides a foundational knowledge layer for architecture-centric XR applications. **(A2) In-the-Wild Reconstruction & Understanding:** I study methods that transform web-sourced, in-the-wild photo collections into realistic, navigable 3D environments, while supporting interactive open-vocabulary querying and understanding under real-world appearance variations. **(A3) Foundation-Model-Driven Storytelling Generation:** I am conducting early-stage research on controllable 3D content editing and generation. In the next phase, I plan to develop automated point-of-interest (POI) selection and narration generation, centered on immersive XR tourism storytelling.

I am currently a third-year Ph.D. candidate and am seeking a one-year visiting student position through the China Scholarship Council (CSC) Joint Ph.D. Program (July 2026–June 2027).

## EDUCATION

<b>PhD Candidate</b> , Beihang University, Beijing, China Computer Science, State Key Lab of VR Technology and Systems Supervised by Prof. Yue Qi	2021 – 2027 (Expected)
<b>Bachelor's Degree</b> , Jilin University, Changchun, China Internet of Things, College of Computer Science and Technology	2016 – 2020

## RESEARCH PUBLICATIONS (†=EQUAL FIRST AUTHOR OR EQUAL CORRESPONDING AUTHOR)

### ► Selected Publications:

- [1] **Y. Wang**, J. Wang, R. Gao, Y. Qu, W. Duan, S. Yang, and Y. Qi, “Look at the sky: Sky-aware efficient 3d gaussian splatting in the wild,” in *IEEE Transactions on Visualization and Computer Graphics (TVCG)*, vol. 31, 2025, pp. 3481–3491. DOI: [10.1109/TVCG.2025.3549187](https://doi.org/10.1109/TVCG.2025.3549187). (🎥 | IEEE VR 2025 Best Paper Award, ESI Highly Cited Paper)

- [2] Y. Bao, C. Tang, **Y. Wang<sup>†</sup>**, and H. Li<sup>†</sup>, “Seg-wild: Interactive segmentation based on 3d gaussian splatting for unconstrained image collections,” in *Proceedings of the 33rd ACM International Conference on Multimedia (ACM MM 2025)*, vol. 31, 2025, pp. 8567–8576. DOI: [10.1145/3746027.3755567](https://doi.org/10.1145/3746027.3755567). (Q1)
- [3] Y. Bao, C. Tang, **Y. Wang<sup>†</sup>**, Y. Qi, and R. Liu<sup>†</sup>, “Efficient interactive segmentation of three-dimensional gaussians with optimal view selection,” in *Engineering Applications of Artificial Intelligence (EAAI)*, vol. 162, 2025, pp. 12413–12426. DOI: [10.1016/j.engappai.2025.112413](https://doi.org/10.1016/j.engappai.2025.112413). (JCR Q1, IF=6.46)
- [4] **Y. Wang**, J. Wang, C. Wang, and Y. Qi, “Rise-editing: Rotation-invariant neural point fields with interactive segmentation for fine-grained and efficient editing,” in *Neural Networks (NN)*, vol. 187, 2025, pp. 107304–107321. DOI: [10.1016/j.neunet.2025.107304](https://doi.org/10.1016/j.neunet.2025.107304). (Q1 | JCR Q1, IF=4.8)
- [5] **Y. Wang**, J. Wang, C. Wang, and Y. Qi, “Scarf: Scalable continual learning framework for memory-efficient multiple neural radiance fields,” in *Computer Graphics Forum (CGF)*, vol. 43, 2024, e15255–e15267. DOI: [10.1111/cgf.15255](https://doi.org/10.1111/cgf.15255). (JCR Q1, IF=1.6)
- [6] **Y. Wang**, J. Wang, Y. Qu, and Y. Qi, “Rip-nerf: Learning rotation-invariant point-based neural radiance field for fine-grained editing and compositing,” in *Proceedings of the 2023 ACM International Conference on Multimedia Retrieval (ICMR 2023)*, 2023, pp. 125–134. DOI: [10.1145/3591106.3592276](https://doi.org/10.1145/3591106.3592276). (Q1)
- [7] **Y. Wang<sup>†</sup>**, Y. Qu<sup>†</sup>, and Y. Qi, “Sg-nerf: Semantic-guided point-based neural radiance fields,” in *Proceedings of the IEEE International Conference on Multimedia & Expo 2023 (ICME 2023)*, 2023, pp. 570–575. DOI: [10.1109/ICME55011.2023.00104](https://doi.org/10.1109/ICME55011.2023.00104). (Q1)
- [8] **Y. Wang**, J. Zhang, and J. Qiao, “An information entropy-based method of evidential source separation and refusion,” in *IEEE Sensors Journal*, vol. 20, 2021, pp. 77–84. DOI: [10.1109/JSEN.2019.2940519](https://doi.org/10.1109/JSEN.2019.2940519).

► Three papers are **Under Review**:

- [9] **Y. Wang**, J. Wang, and Y. Qi, “We-gs: An in-the-wild efficient 3d gaussian representation for unconstrained photo collections,” *arXiv preprint arXiv:2406.02407*, 2024. DOI: [10.48550/arXiv.2406.02407](https://doi.org/10.48550/arXiv.2406.02407).
- [10] **Y. Wang** and Y. Qi, “Taking language embedded 3d gaussian splatting into the wild,” *arXiv preprint arXiv:2507.19830*, 2025. DOI: [10.48550/arXiv.2507.19830](https://doi.org/10.48550/arXiv.2507.19830).
- [11] **Y. Wang**, L. Yang, J. Wang, and Y. Qi, “Archgpt: Understanding the world’s architectures with large multimodal models,” *arXiv preprint arXiv:2509.20858*, 2025. DOI: [10.48550/arXiv.2509.20858](https://doi.org/10.48550/arXiv.2509.20858).

## SELECTED AWARDS

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- 2023 First-Class Academic Scholarship, Beihang University  
 2024 Outstanding Graduate Student, Beihang University  
 2024 First-Class Academic Scholarship, Beihang University  
 2025 National Scholarship (Top 1% of Ph.D. Students)

## TECHNICAL SKILLS

**Programming Languages:** Python, C/C++/C#

**Softwares/Platforms/Libraries:** AR Foundation, AR Core, Unity, Blender, pytorch, matplotlib

**Research Tools:** L<sup>A</sup>T<sub>E</sub>X, Power Point, Visio

**Languages:** English (CET-6), Chinese (Native)

## PROFESSIONAL ACTIVITIES

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**Reviewer** for VR 2024–2026, ISMAR 2025, CHI 2025, Pacific Vis (TVCG Track) 2025, etc.

**Reviewer** for TVCG, TMM, etc.