ZHENXING MI

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RESEARCH INTEREST

My research spans vision-language models, multimodal understanding and generation, video generation, and 3D/4D generation and reconstruction. I've published in top venues including CVPR, ICLR, ICML, TPAMI, TVCG, and AAAI, with contributions spanning multimodal understanding and generation, and Mixture-of-Experts (MoE) frameworks for scalable 3D scene modeling. Looking ahead, I'm excited to push the frontiers of vision-language models, multimodal understanding and generation models, video diffusion models, and 3D/4D world generation models, to build scalable generative systems that can perceive, reason, and create in dynamic environments.

EDUCATION

- **The Hong Kong University of Science and Technology** Feb. 2021 - Mar. 2026 (Expected)
  Ph.D. candidate in Computer Science and Engineering
  Advisor: Prof. Dan Xu

- **Huazhong University of Science and Technology** Sept. 2017 - June 2020
  M.Sc. in Automation
  Advisor: Prof. Wenbing Tao

- **Huazhong University of Science and Technology** Sept. 2013 - June 2017
  B.Sc. in Control Science and Engineering
  Advisor: Prof. Wenbing Tao

EXPERIENCE

- **Personalized Generative AI, Snap Research.** July. 2024 - Oct 2024
  Research Intern, Multimodal generation
  Mentor: Kuan-Chieh Wang, Guocheng Qian and Kfir Aberman

- **Applied Research Center (ARC), PCG, Tencent** Jan. 2024 - May 2024
  Research Intern, 3D generation
  Mentor: Xintao Wang

PUBLICATIONS

- **4D World Modeling via Video Generation:**

- **Zhenxing Mi**, Yuxin Wang, Dan Xu. "One4D: Unified 4D Generation and Reconstruction via Decoupled LoRA Control.", arXiv:2511.18922, *Technical report*.

- **Multimodal Understanding and Generation:**

- **Zhenxing Mi**, Kuan-Chieh Wang, Guocheng Qian, Hanrong Ye, Runtao Liu, Sergey Tulyakov, Kfir Aberman, Dan Xu. "I Think, Therefore I Diffuse: Enabling Multimodal In-Context Reasoning in Diffusion Models.", *ICML 2025*.

- **Scalable NeRF via Mixture of Experts (MoE):**

- **Zhenxing Mi**, and Dan Xu. "Learning Heterogeneous Mixture of Scene Experts for Large-scale Neural Radiance Fields", *TPAMI 2025*.

- **Zhenxing Mi**, and Dan Xu. "LeCO^2-NeRF: Learning Continuous and Compact Large-Scale Occupancy for Urban Scenes.", arXiv:2411.11374, *Technical report*.

- **Zhenxing Mi**, and Dan Xu. "Switch-NeRF: Learning Scene Decomposition with Mixture of Experts for Large-scale Neural Radiance Fields." *ICLR 2023*.

- **Efficient Multiview Stereo:**

- **Zhenxing Mi**, Di Chang, and Dan Xu. "Generalized Binary Search Network for Highly-Efficient Multi-View Stereo." *CVPR 2022*.

- ■ **Scalable Surface Reconstruction Network:**

- Ganzhangqin Yuan*, Qiancheng Fu*, **Zhenxing Mi***, Yiming Luo*, and Wenbing Tao. "SSRNet: Scalable 3D Surface Reconstruction Network." ***IEEE TVCG 2022***.

- Yiming, Luo*, **Zhenxing Mi***, and Wenbing Tao. "DeepDT: Learning Geometry From Delaunay Triangulation for Surface Reconstruction." ***AAAI 2021***.

- **Zhenxing Mi***, Yiming Luo*, and Wenbing Tao. "SSRNet: Scalable 3D Surface Reconstruction Network." ***CVPR 2020***.

PATENTS

- **A local adaptive 3D point cloud denoising method based on depth maps.**

  Inventor: Wenbing Tao, Zhenxing Mi
  Authorization Publication Number: CN107845073A
  Status: Authorized
  Country/Region: China

AWARDS

- **2018:** Graduate School Scholarship (First Prize), Zhixing Scholarship (Third Prize), Outstanding Student

- **2017:** Outstanding Graduate, Graduate School Scholarship (First Prize)

- **2014:** National Encouragement Scholarship, by the Ministry of Education of China

SKILLS

- **Programming Languages:** Python, C++, CUDA

- **Deep Learning Framework:** Pytorch, Tensorflow

- **Operating Systems:** Linux (Ubuntu, CentOS), Windows, MacOS

- **Languages:** Chinese (native), English (fluent, academic speaking and writing)

SERVICE

- **Conference Reviewer:** CVPR, ECCV, ICCV, ICLR, ICML, NeurIPS, AAAI, ACM MM

- **Journal Reviewer:** TPAMI, IJCV, TVCG, TMM

TEACHING

- TA for Introduction to Computer Science - Fall 2022/23

- TA for Parallel Programming - Spring 2021/22

- TA for Discrete Mathematical Tools for Computer Science - Fall 2021/22