ZIYU SHAN

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EDUCATION

Nanyang Technological University (NTU) *2025.08 - 2029.06 (expected)*
Full-time PhD in EEE Full Scholarship, Supervisor: Ziwei Wang
Shanghai Jiao Tong University *2022.09 - 2025.03*
MEng in EE GPA: 3.70 (89.0/100, top 30%)
Courses: Matrix Theory, Optimization Method, Stochastic Process, Graph and Network
Shanghai Jiao Tong University *2018.09 - 2022.06*
BEng in EE GPA: 3.76 (87.4/100, top 20%)
Courses: Machine Learning, Digital Image Processing, Data Structure, Linear Algebra, Probability and Statistics, Video Coding and Communication, 4th year thesis (A-)

RESEARCH INTERESTS

Embodied AI, World Model, Mobile Manipulation, Point cloud quality assessment, Low-level vision

SELECTED PUBLICATIONS

[1] (To Submit) DockAnywhere: Data-Efficient Visuomotor Policy Learning for Mobile Manipulation via Novel Demonstration Generation
Ziyu Shan, Zhenyu Wu, Yuheng Zhou, Gaoyuan Wu, Ziwei Wang.
*IEEE Robotics and Automation Letters (**RA-L**)* , 2025.

[2] GPA-Net:No-Reference Point Cloud Quality Assessment with Multi-task Graph Convolutional Network
Ziyu Shan*, Qi Yang*, Rui Ye, Yujie Zhang, Yiling Xu, Xiaozhong Xu, Shan Liu.
*IEEE Transactions on Visualization and Computer Graphics (**TVCG**)* , 2023. (CCF-A, IF:5.20)

[3] Contrastive Pre-Training with Multi-View Fusion for No-Reference Point Cloud Quality Assessment
Ziyu Shan, Yujie Zhang, Qi Yang, Haichen Yang, Yiling Xu, Jenq-Neng Hwang, Shan Liu.
*IEEE/CVF Conference on Computer Vision and Pattern Recoginition (**CVPR**)*, 2024.

[4] Learning Disentangled Representations for Perceptual PCQA via Mutual Information Minimization
Ziyu Shan*, Yujie Zhang*, Yipeng Liu, Yiling Xu.
*Annual Conference on Neural Information Processing Systems (**NeurIPS**)*, 2024.

[5] PAME: Self-Supervised Masked Autoencoder for No-Reference Point Cloud Quality Assessment
Ziyu Shan, Yujie Zhang, Qi Yang, Haichen Yang, Yiling Xu, Shan Liu.
*IEEE International Conference on Multimedia and Expo (**ICME, Oral**)*, 2024.

[6] (Submitted) Im3D-Bench: Benchmarking and Assessing Perceptual Quality for Image-to-3D Generation
Ziyu Shan, Peilin Chen, Yujie Zhang, Qi Yang Yiling Xu, Shiqi Wang.
*International Joint Conference on Artificial Intelligence (**AAAI**)*, 2025.

RESEARCH EXPERIENCE

- **PINE Lab, Nanyang Techological University** Singapore
PhD Student, Advisor: Ziwei Wang *2025.04- Present*
  - **Demonstration Generation for Mobile Manipulation:** Introduced a DemoGen-like data augmentation suite to generate demonstrations for mobile robots; Test the proposed pipeline on Maniskill and real-world Galaxea R-1 mobile robot. Ready to submit to RA-L.

- **Cooperative Medianet Innovation Center, Shanghai Jiao Tong University** Shanghai, China
  Master Student, Supervisor: Yiling Xu *2022.09- Present*
  ◦ **No-reference Point Cloud Quality Assessment (PCQA):** Introduced a multi-task graph convolutional network to attentively extract perturbation of structure and texture; Introduced a coordinate normalization module to achieve the shift, scale and rotation invariance; Proposed a multi-task training framework to predict distortion type and level besides quality score. Published on TVCG.
  ◦ **Contrastive Learning for PCQA:** Introduced a contrastive learning paradigm to make networks learn quality-aware features without labels. And introduced a multi-view fusion module to integrate features from multi-view projected images. Accepted by CVPR 2024.
  ◦ **Self-supervised Masked Autoencoding for PCQA:** Proposed a self-supervised pre-training framework using popular masked image modeling for PCQA. The proposed dual-branch network learns content-aware and distortion-aware representations by predicting masked patches of pristine and distorted projected images. Accepted by NeurIPS 2024.
- **Computer Science Department, City University of Hong Kong** Hong Kong, China
  Research Assistant, Advisor: Shiqi Wang *2024.06- Present*
  ◦ **Benchmarking image-to-3D Generation:** Collected a large amount of baseline images and unify the representation for a comprehensive benchmark to test image-to-3D generative models. Proposed a simple multi-view module to address the problem of information asymmetry. Submitted to IJCAI 2025.
- **Intel Lab** Shanghai, China
  MLE Intern, Advisor: Haitao Wang *2021.06- 2021.09*
  ◦ **Chinese delivery address recognition:** Established a custom dataset by crawling abundant Chinese delivery addresses from the web and adding noise by randomly reordering and adding irrelevant address; Finetuned a tiny BERT-based network to identify the delivery addresses.

AWARDS & HONORS

Honors:

- China National Scholarship *2024*
- Shanghai Jiao Tong University Graduate Scholarship (A-class, Top 30%) *2022,2023*
- Xiaomi Outstanding Scholarship (2/126) *2023*
- Outstanding Graduates of Shanghai Jiao Tong University *2022, 2025*
- Ceyear China Outstanding Undergraduate Scholarship (3/150) *2021*
- Shanghai Jiao Tong University Undergraduate Scholarship (B-class, Top 20%) *2021*

Competition:

- 2nd(5th) place in the full(no)-reference track of ICIP2023 Point Cloud Visual Quality Assessment Grand Challenge *2023*

ENGLISH & SKILLS & HOBBIES

English: TOEFL: 101 (Reading: 30, Listening: 25, Speaking: 23, Writing: 23) GRE: 328 (158+17+4)
Tools: Deep learning programing, Python, PyTorch, C++, MATLAB, Git, Linux, PyQt5, Latex
Hobbies: Fitness training, Filming, Hiking