SAINING ZHANG

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Homepage

EDUCATION

Nanyang Technological University   Singapore
M.Eng. in Computer Science and Engineering,   Aug 2024-Present
Supervised by Prof. Hanwang Zhang

- GPA: 4.5/5.0

Beijing Institute of Technology   Beijing, China
B.Sc. in Computer Science and Technology   Oct 2020 – Jun 2024

- GPA: 88.4/100 (3.7/4.0)
- Selected awards: Outstanding Undergraduate Dissertation Award, Second-class Scholarship of Beijing Institute of Technology.

PUBLICATIONS

1. **Selftok Team**. "Selftok: Discrete Visual Tokens of Autoregression, by Diffusion, and for Reasoning", Technical Report, 2025.
2. Licheng Shen*, **Saining Zhang***†, Honghan Li*, Zongzheng Zhang, Huan-ang Gao, Miao Run, Li Yi, Hao Zhao†. "GaussianArt: One-Stage Modeling of Articulated Objects with Scaled-Up Evaluation", under review, *CORL 2025*.
3. Yinghao Shuai*, **Saining Zhang***, Zijian Jiang, Yuantao Chen, Zhang Jiahao, Yusen Qin, Yao Mu, Hao Zhao†. "Gen-NAV: Generative Simulation with Gaussian Photorealistic Rendering for Evolving Environments", under review, *CORL 2025*.
4. Baijun Ye*, Minghui Qin*, **Saining Zhang***, Moonjun Gong, Shaoting Zhu, Hao Zhao, Hang Zhao†. "GS-Occ3D: Scaling Vision-only Occupancy Reconstruction for Autonomous Driving with Gaussian Splatting", under review, *ICCV 2025*.
5. Haoran Xu*, **Saining Zhang**, Peishuo Li*, Baijun Ye, Xiaoxue Chen, Huan-ang Gao, Jv Zheng, Xiaowei Song, Ziqiao Peng, Run Miao, Jinrang Jia, Yifeng Shi, Guangqi Yi, Hang Zhao, Hao Tang, Hongyang Li, Kaicheng Yu, Hao Zhao†. "CRUISE: Cooperative Reconstruction and Editing in V2X Scenarios using Gaussian Splatting", accepted, *IROS 2025*.
6. **Saining Zhang**, Baijun Ye*, Xiaoxue Chen, Yuantao Chen, Zongzheng Zhang, Cheng Peng, Yongliang Shi, Hao Zhao†. "Drone-assisted Road Gaussian Splatting with Cross-view Uncertainty", published, *BMVC 2024*.
7. **Saining Zhang**, Yuhang Zhang, Ye Zhang, Yufei Wang, Zhigang Song†. "A Dual-Direction Attention Mixed Feature Network for Facial Expression", *Electronics (JCR Q2), 12 (17), 3595, 2023*.

SELECTED AWARDS AND HONORS

- **Outstanding Undergraduate Dissertation Award, Beijing Education Commission (top 0.9% in 130,000 students)**
- **Winner Award**, NTIRE 2024 (CVPR 2024 workshop) Stereo Image Super-Resolution Challenge Track 1 & Track 2
- **Second place**, 2021 iFLYTEK A.I. Developer Competition Facial Expression Recognition Challenge

RESEARCH EXPERIENCE

Singapore Graphics & Image Intelligence Lab, Huawei Singapore   Singapore
Assistant Engineer to Associate Professor Hanwang Zhang   Sep 2024 – Present

- We build Selftok, the best image tokenizer in the world for both generation and understanding.

Institute for AI Industry Research (AIR), Tsinghua University   Beijing, China

Research Intern to Assistant Professor Hao Zhao   Oct 2023 – Present

Generative Simulation VLN with 3DGS @ Horizon
- We build a VLN benchmark based on generative simulation with 3DGS.

3D-GS Articulation Modeling
- We are trying to discover an one-state self-supervised articulation modeling .

V2X Simulation
- We proposed the first V2X simulation pipeline based on dynamic gaussians.

Drone-assisted Road Gaussian Splatting
- We are the first to introduce cross-view uncertainty to 3DGS training for road scene synthesis. The method outperforms existing techniques especially when the view shifts or rotates.

Harvard T.H. Chan School of Public Health (Department of Biostatistics)   Remote
Research Intern to Assistant Professor Junwei Lu   Mar 2023 – Mar 2024
Research for Medical Informatics
- Hyperbolic embedding for entity alignment between knowledge graphs
- Involved in Multi Modal General Med AI via LLM

University of Chinese Academy of Sciences   Beijing, China
RA to Prof. Jiaoqing Pan and Associate Research Fellow, Zhigang Song   Aug 2022 – Oct 2022
Facial Expression Recognition
- I proposed a novel baseline for facial expression recognition based on MobileFaceNets and added MixConv to take advantage of multiple-size kernels; used dual direction attention heads to achieve long-range dependencies. The model performed best on AffectNet-7, AffectNet-8 and RAF-DB and second-best on FER-Plus.

Beijing Institute of Technology (School of Medical Technology)   Beijing, China
Research Intern to Professor Jian Yang   May 2022 – May 2023
High-Resolution Boundary Detection for Medical Image Segmentation
- Assisted in high-resolution boundary detection in medical image segmentation. We applied piece-wise two-sample T-test to the loss function. Tested our loss on UNet, nnUNet and FCN and achieved best performance on ACDC Challenge data comparing to other loss functions

WORK EXPERIENCE

Huawei International Pte Ltd   Singapore
Assistant Engineer   Sep 2024 – Present
- Image tokenizer based on diffusion methods.

Beijing Horizon Information Technology Co., Ltd   Remote
Cloud Platform Intern, D-Robotics   Sep 2024 – Present
- Generative simulation for Visual Language Navigation (VLN).

Beijing Samsung Telecommunication R&D Center   Beijing, China
Algorithm Intern, Vision Computing Lab   Jun 2022 – Sep 2022
- Research on Object Detection, Instance Segmentation, and Face Reenactment; coded a model for Instance Segmentation based on YOLOv6 and YOLACT.

ADDITIONAL INFORMATION

Computer Skills
- C++, Python and assembly languages. Familiar with Java, SQL, Pytorch toolbox. Original (drawing), Matlab (mathematical modeling) and LaTex (writing). UE-5, Meshlab.

Language Skills
- TOEFL: 102 (Reading: 28, Listening: 27, Oral: 22, Writing:25)
  GRE: 323 (Verbal: 153, Quantitative: 170, Writing: 3.0)