SAINING ZHANG

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Google Scholar Homepage

EDUCATION

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

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: Excellent Graduation Thesis, Second-class Scholarship of Beijing Institute of Technology; Third-class Scholarship of Beijing Institute of Technology

LANGUAGE SKILLS

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

PUBLICATIONS

1. **Saining Zhang**, B. Ye, X. Chen, Y. Chen, Z. Zhang, C. Peng, Y. Shi, H. Zhao, "Drone-assisted Road Gaussian Splatting with Cross-view Uncertainty", accepted, *British Machine Vision Conference* (*BMVC) 2024.*
2. **Saining Zhang**, Y. Zhang, Y. Zhang, Y. Wang, Z. Song, "A Dual-Direction Attention Mixed Feature Network for Facial Expression", *Electronics (JCR Q2), 12 (17), 3595, 2023.* https://doi.org/10.3390/electronics12173595.

SELECTED AWARDS AND HONORS

- **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

Institute for AI Industry Research, Tsinghua University Beijing, China
Research Intern to Assistant Professor Hao Zhao Oct 2023-Present
Drone-assisted Road Gaussian Splatting with Cross-view Uncertainty

- The work introduces a method to improve road scene synthesis for autonomous driving simulations by integrating aerial imagery with ground-level views. It uses an uncertainty-aware approach to enhance the training of 3D Gaussian Splatting, resulting in better rendering quality and detail, especially when the view shifts or rotates. The method outperforms existing techniques and could significantly improve autonomous driving simulations.
- Research spawned a paper, "Drone-assisted Road Gaussian Splatting with Cross-view Uncertainty"

Vehicle-Road Collaborative Perspective Autonomous Driving Simulator

Harvard T.H. Chan School of Public Health (Department of Biostatistics) Boston (remote)
Research Intern to Assistant Professor Junwei Lu Mar 2023 – Mar 2024
Research for Medical Informatics

- Researching and working on hyperbolic embedding with the aim of achieving good performance on 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
Dual Direction Attention Mixed Feature Network for Facial Expression Recognition

- Worked on a model to teach computers to understand human emotions and attitudes via facial expressions; proposed a novel baseline based on MobileFaceNets and added MixConv to take advantage of multiple-size kernels; added dual direction attention heads (vertical and horizontal) to the baseline, which could achieve long-range dependencies. The model performed best on AffectNet-7, AffectNet-8 and RAF-DB and second-best on FER-Plus.
- Research spawned a paper, "A Dual-Direction Attention Mixed Feature Network for Facial Expression Recognition"

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 testing of 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

Beijing Samsung Telecommunication R&D Center Beijing, China
Algorithm Intern, Vision Computing Lab Jun 2022 – Sep 2022

- Researched Target Detection, Instance Segmentation, and Face Reenactment; coded a model for Instance Segmentation
- Used YOLOv6 as basic model and imitated YOLACT to add segmentation layer. After two weeks of debugging, the instance segmentation model could be successfully trained
- Researched Face Reenactment and wrote a report

ADDITIONAL INFORMATION

Computer Skills

- C++, Python and assembly languages (X86, MIPS, RISC-V). Familiar with Java, SQL, Pytorch toolbox. Some knowledge of Computer Vision, Original (drawing), Matlab (mathematical modeling) and LaTex (writing)