

LANYUN ZHU

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EDUCATION

Singapore University of Technology and Design (SUTD)	Singapore
<i>Ph.D. in Information Systems and Technology Design (ISTD)</i>	2021.9 - 2025.1
Advisor: Prof. Jun Liu , Prof. Soh De Wen	
Beihang University (BUAA)	Beijing, China
<i>B.S. in Instrumentation Science</i>	2016.9 - 2020.6

RESEARCH DIRECTIONS

Computer Vision, Large Vision-Language Models, Image Segmentation, Resource-Efficient Learning

SELECTED PUBLICATIONS

For the full list, please see my [Google Scholar page](#)

Conference Papers

1. **Lanyun Zhu**, Tianrun Chen, Qianxiong Xu, Xuanyi Liu, Deyi Ji, Haiyang Wu, De Wen Soh, Jun Liu, “POPEN: Preference-Based Optimization and Ensemble for LVLM-Based Reasoning Segmentation”, *IEEE Conference on Computer Vision and Pattern Recognition (CVPR)*, 2025.
2. Qianxiong Xu, Xuanyi Liu, **Lanyun Zhu**, Guosheng Lin, Cheng Long, Ziyue Li, Rui Zhao, “Hybrid Mamba for Few-Shot Segmentation”, *Annual Conference on Neural Information Processing Systems (NeurIPS)*, 2024. [\[paper\]](#)
3. Deyi Ji, Feng Zhao, **Lanyun Zhu**, Wenwei Jin, Hongtao Lu, Jieping Ye, “Discrete Latent Perspective Learning for Segmentation and Detection”, *International Conference on Machine Learning (ICML)*, 2024. [\[paper\]](#)
4. **Lanyun Zhu**, Tianrun Chen, Deyi Ji, Jieping Ye, Jun Liu, “LLaFS: When Large Language Models Meet Few-Shot Segmentation”, *IEEE Conference on Computer Vision and Pattern Recognition (CVPR)*, 2024. [\[paper\]](#)
5. **Lanyun Zhu**, Tianrun Chen, Jianxiong Yin, Simon See, Jun Liu, “Addressing Background Context Bias in Few-Shot Segmentation through Iterative Modulation”, *IEEE Conference on Computer Vision and Pattern Recognition (CVPR)*, 2024. [\[paper\]](#)
6. **Lanyun Zhu**, Tianrun Chen, Jianxiong Yin, Simon See, Jun Liu, “Learning Gabor Texture Features for Fine-Grained Recognition”, *International Conference on Computer Vision (ICCV)*, 2023. [\[paper\]](#)
7. **Lanyun Zhu**, Tianrun Chen, Jianxiong Yin, Simon See, Jun Liu, “Continual Semantic Segmentation with Automatic Memory Sample Selection”, *IEEE Conference on Computer Vision and Pattern Recognition (CVPR)*, 2023. [\[paper\]](#)
8. **Lanyun Zhu**, Deyi Ji, Shiping Zhu, Weihao Gan, Wei Wu, Junjie Yan, “Learning Statistical Texture for Semantic Segmentation”, *IEEE Conference on Computer Vision and Pattern Recognition (CVPR)*, 2021. [\[paper\]](#)
9. Tianrun Chen, **Lanyun Zhu**, Chaotao Ding, Runlong Cao, Shangzhan Zhang, Yan Wang, Zejian Li, Lingyun Sun, Papa Mao, Ying Zang. “SAM-adapter: Adapting SAM in Underperformed Scenes”, *ICCV2023 Workshop*. [\[paper\]](#) [\[code\]](#) ([Github 1000 Stars](#))
10. Xiao Fu, Shangzhan Zhang, Tianrun Chen, Yichong Lu, **Lanyun Zhu**, Xiaowei Zhou, Andreas Geiger, Yiyi Liao. “Panoptic NeRF: 3D-to-2D Label Transfer for Panoptic Urban Scene Segmentation”, *International Conference on 3D Vision (3DV)*, 2022. [\[paper\]](#)

Journal Papers

1. **Lanyun Zhu**, Tianrun Chen, Deyi Ji, Jieping Ye, Jun Liu, “Not Every Patch is Needed: Towards a More Efficient and Effective Backbone for Video-based Person Re-identification”, *IEEE Transactions on Image Processing*. [\[paper\]](#)
2. Tianrun Chen, Chaotao Ding, **Lanyun Zhu**, Ying Zang, Yiyi Liao, Zejian Li, Lingyun Su, “Reality3DSketch: Rapid 3D Modeling of Objects from Single Free-hand Sketches”, *IEEE Transactions on Multimedia*. [\[paper\]](#)
3. Yan Wang, Jian Cheng, Yixin Chen, Shuai Shao, **Lanyun Zhu**, Zhenzhou Wu, Tao Liu, Haogang Zhu. “FVP: Fourier Visual Prompting for Source-Free Unsupervised Domain Adaptation of Medical Image Segmentation”, *IEEE Transactions on Medical Imaging*. [\[paper\]](#)

4. Zhikang Liu, **Lanyun Zhu**. “Label-guided Attention Distillation for Lane Segmentation”, *Neurocomputing*. [\[paper\]](#)

Submitted Papers

1. **Lanyun Zhu**, Tianrun Chen, Deyi Ji, Peng Xu, Jieping Ye, Jun Liu, “LLaFS++: Few-Shot Image Segmentation with Large Language Models”, *Submitted to IEEE Transactions on Pattern Analysis and Machine Intelligence*.
2. **Lanyun Zhu**, Tianrun Chen, Jianxiong Yin, Simon See, De Wen Soh, Jun Liu, “Replay Master: Automatic Sample Selection and Effective Memory Utilization for Continual Semantic Segmentation”, *Submitted to IEEE Transactions on Pattern Analysis and Machine Intelligence*.

INTERN EXPERIENCES

Johns Hopkins University

Research Intern, Jul 2021-Aug 2021

Brief introduction: Working on research projects about using depth estimation to enhance semantic segmentation, advised by Prof. Alan Yuille.

- Implementing a multi-task model to enhance semi-supervised segmentation by using depth estimation as a joint task.
- Achieving 3% improvement compared with SOTA

Sensetime

Research Intern, Jun 2020-Jul 2021

Brief introduction: Working on research works and engineering projects about semantic segmentation.

- Designing models for soot area segmentation, achieving 64% mIoU.
- Completing a paper about semantic segmentation published on CVPR2021.

Megvii

Research Intern, Sep 2019-May 2020

Brief introduction: Working on research works and engineering projects about semantic segmentation and lane line detection.

- Designing models for lane line detection used for traffic condition monitoring.
- Completing a paper about lane line detection published on Neurocomputing.

ACADEMIC SERVICE

Organizer

- ICME2024 Grand Challenge –The 2nd Multi-Modal Video Reasoning and Analyzing Competition

Conference Reviewer

- IEEE Conference on Computer Vision and Pattern Recognition (CVPR)
- Advances in Neural Information Processing Systems (NeurIPS)
- International Conference on Machine Learning (ICML)
- International Conference on Learning Representations (ICLR)
- European Conference on Computer Vision (ECCV)
- Association for the Advancement of Artificial Intelligence (AAAI)
- ACM International Conference on Multimedia (ACM MM)

Journal Reviewer

- IEEE Transactions on Pattern Analysis and Machine Intelligence (TPAMI)
- International Journal of Computer Vision (IJCV)
- IEEE Transactions on Image Processing (TIP)
- IEEE Transactions on Multimedia (TMM)
- IEEE Transactions on Circuits and Systems for Video Technology (TCSVT)
- IEEE Transactions on Industrial Informatics (TII)
- Pattern Recognition (PR)

SELECTED HONORS AND AWARDS

First Prize, Fengru Cup 2019 (Top 2%, 2/100+)	2019
1 st Class Scholarship for Academic Achievements, BUAA	2019
Second Prize, Fengru Cup 2020 (Top 10%)	2020
Honorable Mention, Mathematical Contest In Modeling	2019
AISG Ph.D. Fellowship	2021 – 2025