Yalun Dai

Seeking a PhD opportunity (2025 Spring/Fall) in the fields of Computer Vision

Tel/WhatsApp: +65 92318399 Email: dialogue_dylan@outlook.com Google Scholar

EDUCATION BACKGROUND

Nanyang Technological University (NTU) **08/2023-12/2024**
Major: Signal Processing, EEE Master of Science

Beijing University of Chemical Technology (BUCT) **09/2018-06/2022**
Major: Communication Engineering Bachelor of Engineering

WORK EXPERIENCE

Agency for Science, Technology and Research (A*STAR) **Singapore** **05/2024-Now**
Centre for Frontier AI Research (CFAR)
Researcher Intern
Research related to data-efficient learning. Supervised by Prof. Joey Tianyi Zhou and Prof. He Yang.

Analog Devices, Inc. (ADI) **Beijing** **06/2022-06/2023**
Systems Application Engineer
Developed and deployed a deep learning-based multi-sensor data fusion system for smoke alarm prediction.

PUBLISHED PAPERS

SPGC: Shape-Prior based Generated Content Data Augmentation for Remote Sensing Object Detection
IEEE T-GRS (SCI Q1, IF=8.2)
Yalun Dai, Fei Ma, Wei Hu, Fan Zhang
A simple yet effective generation method introducing shape priors boosts the performance of object detection.

LTGC: Long-tail Recognition via Leveraging LLMs-driven Generated Content
CVPR 2024 (Oral 0.8%) (Co-First Author, Oral Presentor)
Qihao Zhao*, **Yalun Dai***, Hao Li, Fan Zhang, Wei Hu, Jun Liu
A generative and tuning framework leveraging the knowledge of LLMs and LMMs for long-tail recognition.

LTRL: Boosting Long-tail Visual Recognition via Reflective Learning
ECCV 2024 (Oral 2.0%) (Co-First Author, Oral Presentor)
Qihao Zhao*, **Yalun Dai***, Shen Lin, Fan Zhang, Wei Hu, Jun Liu
Reflective Learning, a plug-and-play method, boosts long-tail recognition by mimicking human thinking.

GP-NeRF: Generalized Context-Aware Semantic Embedding Field for Cross-Scene Semantic Representation
CVPR 2024 (Highlight 2.8%)
Hao Li, Dingwen Zhang, **Yalun Dai**, Nian Liu, Lechao Cheng, Jingfeng Li, Jingdong Wang, Junwei Han
A novel pipeline unifies widely used segmentation models and NeRF into a cohesive framework.

GGRt: Towards Pose-free Generalizable 3D Gaussian Splatting in Real-time
ECCV 2024
Hao Li, Yuanyuan Gao, Dingwen Zhang, Chengming Wu, **Yalun Dai**, Chen Zhao, Jingdong Wang, Junwei Han
GGRt, the first pose-free 3D-GS framework, achieves inference above 5 FPS and real-time rendering above 100 FPS.

Boosting Low-Data Instance Segmentation by Unsupervised Pre-training with Saliency Prompt
CVPR 2023
Hao Li, Dingwen Zhang, Nian Liu, **Yalun Dai,** Lechao Cheng, Chao Zhang, Xinggang Wang, Junwei Han
A novel pre-training with Saliency Prompts boosts instance segmentation in data-scarce scenarios.

COMING SOON

Training-Free Dataset Pruning for Instance Segmentation
Yalun Dai, Lingao Xiao, Ivor Tsang, Yang He

FedSurfGS: Scalable 3D Surface Gaussian Splatting with Federated Learning for Large Scene Reconstruction
Weicai Ye, Hao Li, Yuanyuan Gao, **Yalun Dai**, Junyi Chen, Nanqing Dong, Dingwen Zhang, Hujun Bao, Wanli Ouyang,

Yu Qiao, Tong He, Guofeng Zhang

Radiant: Large-scale 3D Gaussian Rendering based on Hierarchical Framework
Haosong Peng, Tianyu Qi, Yufeng Zhan, Hao Li, **Yalun Dai**, Yuanqing Xia

SKILLS

Professional Skills: Python, Pytorch, C, C++
Reviewer: NeurIPS 2023/2024, ICML 2024, ICLR 2024/2025, AAAI 2025

OTHERS

A Shape-Prior-based Object Detection Method.
Chinese Patent, CN 116664866 A
Fan Zhang, **Yalun Dai**, Fei Ma, Wei Hu

ECCV 2024 Workshop, 2nd Place Winner
Perception Test Challenge: Hour-long VideoQA.