

Wenwei Zhang

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Education

Nanyang Technological University

Singapore

Ph.D. in Computer Science

July 2019 - May 2023 (Expected)

- Affiliate with S-Lab and MMLab@NTU, supervised by Prof. Chen Change Loy.
- Focus on computer vision. I am working on unifying visual perceptual algorithms in different modalities.
- Dedicate to open source. I am one of the core maintainers of OpenMMLab, the most popular open-source algorithm platform for computer vision.

Wuhan University

Wuhan, China

B.S. in Software Engineering

Sept. 2015 - June 2019

- Ranking 2/305 (Top 1%), GPA 3.65/4
- Awarded National Scholarship, the highest undergraduate student award in China.

Experience

SenseTime Group Ltd

Beijing & Shenzhen, China

RESEARCH INTERN AT THE AUTONOMOUS DRIVING GROUP

Jan. - May 2018 & Nov. 2018 - July 2019

- [ICCV 2019] Investigate multi-modality multi-object tracking (MOT), made the first attempt to use deep representation of point cloud in MOT, achieved state-of-the-art performance on the KITTI dataset.
- [ACMMM 2018] Explore a coarse-to-fine strategy to facilitate lane segmentation, SOTA results on the CULane Dataset.

iNCML Lab, York University

Toronto, Canada

SUMMER RESEARCH INTERN

June 2018 - Aug. 2018

- Worked on Question and Answering (QA) with the Fixed-size Ordinally-Forgetting Encoding (FOFE) method and feed forward neural network.

Financial Information and Services Science Laboratory, Wuhan University

Wuhan, China

RESEARCH ASSISTANT

Dec. 2015 - Feb. 2018

- Investigated the origin of consciousness and human intelligence by surveying relevant literature and published the findings in books through Tsinghua University Press.
- Created Wuhan University (WHU)'s first WeChat application of campus tour guidance for 8000+ users, and an H5 application for popular food promotion around WHU

Open Source Projects

MMDetection: OpenMMLab detection toolbox and benchmark [Github]

Github star **20.5k+**, fork **7.5k+**

CORE MAINTAINER & DEVELOPER

Oct. 2019 - present

- MMDetection unifies the pipeline and modular design of multiple 2D detection and instance segmentation frameworks.
- It supports multiple detection frameworks out of box, with high efficiency and state-of-the-art results.
- It has re-implemented more than **60** algorithms and released more than **400** pre-trained models, and has been used in more than **1200** projects in the community (till 2022/7/18), which provides comprehensive baselines and references for future research.
- It is one of the most popular research and production platforms for 2D image perception.

MMDetection3D: OpenMMLab next-generation platform for general 3D perception [Github]

Github star **2.6k+**

CORE MAINTAINER & DEVELOPER

Jan. 2020 - present

- MMDetection3D unifies the pipeline and modular design of mono3D, LiDAR-based, and multi-modality 3D object detection.
- It supports state-of-the-art 3D object detectors of different modalities in multiple indoor and outdoor datasets.
- It could also directly use all the **400+** models and **60+** algorithms in MMDetection.
- It builds strong foundations, in a universal framework, for general 3D object detection.

MMCV: OpenMMLab foundational library for computer vision [Github]

Github star 4.1k+

CORE MAINTAINER & DEVELOPER

Oct. 2019 - present

- MMCV unifies the training and testing pipeline of OpenMMLab projects, covering **20+** computer vision tasks.
- It provides common utilities and abstract framework interfaces to OpenMMLab projects.
- It supports the most comprehensive CUDA operators in computer vision.

Publication

Dense Siamese Network for Dense Unsupervised Learning [PDF]

WENWEI ZHANG, JIANGMIAO PANG, KAI CHEN, CHEN CHANGE LOY

European Conference on Computer Vision (ECCV), 2022

Video K-Net: A Simple, Strong, and Unified Baseline for Video Segmentation [PDF]

XIANGTAI LI*, WENWEI ZHANG*, JIANGMIAO PANG*, KAI CHEN, GUANGLIANG CHENG, YUNHAI TONG, CHEN CHANGE LOY

IEEE Conference on Computer Vision and Pattern Recognition (CVPR), 2022 (oral)

K-Net: Towards Unified Image Segmentation [PDF]

WENWEI ZHANG, JIANGMIAO PANG, KAI CHEN, CHEN CHANGE LOY

Advances in Neural Information Processing Systems (NeurIPS), 2021

New state of the art on COCO Panoptic Segmentation and ADE20K Semantic Segmentation datasets

Exploring Data Augmentation for Multi-Modality 3D Object Detection [PDF]

WENWEI ZHANG, ZHE WANG, CHEN CHANGE LOY

arXiv, 2020

Key component for the Best Planning KL-Divergence (PKL) metric and 2nd runner-up in nuScenes Detection Challenge, 2020

Seesaw Loss for Long-Tailed Instance Segmentation [PDF]

JIAQI WANG, WENWEI ZHANG, YUHANG ZANG, YUHANG CAO, JIANGMIAO PANG, TAO GONG, KAI CHEN, ZIWEI LIU, CHEN CHANGE LOY, DAHUA LIN

IEEE Conference on Computer Vision and Pattern Recognition (CVPR), 2021

Key component for the 2nd runner-up method in LVIS Challenge 2020

Side-Aware Boundary Localization for More Precise Object Detection [PDF]

JIAQI WANG, WENWEI ZHANG, YUHANG CAO, KAI CHEN, JIANGMIAO PANG, TAO GONG, JIANPING SHI, CHEN CHANGE LOY, DAHUA LIN

European Conference on Computer Vision (ECCV), 2020 (spotlight)

Key component for the 1st place method in COCO Detection Challenge 2019

EcoNAS: Finding Proxies for Economical Neural Architecture Search [PDF]

DONGZHAN ZHOU, XINCHI ZHOU, WENWEI ZHANG, CHEN CHANGE LOY, SHUAI YI, XUESEN ZHANG, WANLI OUYANG

IEEE Conference on Computer Vision and Pattern Recognition (CVPR), 2020

Robust Multi-Modality Multi-Object Tracking [PDF]

WENWEI ZHANG, HUI ZHOU, SHUYANG SUN, ZHE WANG, JIANPING SHI, CHEN CHANGE LOY

International Conference on Computer Vision (ICCV), 2019

StripNet: Towards Topology Consistent Strip Structure Segmentation [PDF]

GUOXIANG QU*, WENWEI ZHANG*, ZHE WANG, XING DAI, JIANPING SHI, YU QIAO

ACM International Conference on Multimedia (ACMMM), 2018

Honors & Awards

- 2020 **Best PKL Award and second runner-up**, nuScenes Detection Challenge of 5th AI Driving Olympics
- 2020 **Second runner-up**, LVIS Challenge
- 2019 **Winner (without extra data)**, COCO Instance Segmentation Challenge
- 2018 **Huawei Scholarship and First Prize Scholarship**, Wuhan University
- 2017 **Third Prize Scholarship**, Wuhan University
- 2016 **National Scholarship and First Prize Scholarship**, Wuhan University

Reviews

Conferences NeurIPS 2021-2022, ECCV 2020-2022, ICLR 2022, CVPR 2020-2022, ICCV 2021, ACM MM 2020

Skills

Programming Pytorch, Torch, Matlab, OpenCV, Python, C++, JAVA, Latex