

Wang Zhe

GOOGLE SCHOLAR

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Short Bio

SenseTime Group Limited

RESEARCH VICE DIRECTOR

Hong Kong

Mar. 2019 - PRESENT

- I lead the Team of Lidar based Percetion in the Department of Autonomous Driving in Mobile Intelligence Group (MIG).

SenseTime Group Limited

ADVANCED RESEARCHER

Hong Kong

Sep. 2017 - Mar. 2019

- I lead the team of HDMaP and Scene Recovery in the Department of Autonomous Driving in Mobile Intelligence Group (MIG).

SenseTime Group Limited

RESEARCH INTERN

Hong Kong

Nov. 2016 - Sep. 2017

- I worked on medical imaging related projects in the Image and Video Segmentation Group.

The Chinese University of Hong Kong

PH.D IN ELECTRONIC ENGINEERING

Hong Kong

Sep. 2012 - Aug. 2017

- My supervisor is Prof. Xiaogang Wang. I am both in Multimedia Lab (mmlab) and Image and Video Processing Lab (IVPLab).

Zhejiang University

B.ENG. IN OPTICAL ENGINEERING

Zhejiang, China

Sep. 2008 - July 2012

Experience

SenseTime Group Limited

RESEARCH VICE DIRECTOR

Hong Kong

Mar. 2019 - PRESENT

- We developed 3D perception algorithms for SenseTime's autonomous driving system SenseAuto, including 3D object detection, unknown instance detection and multiple object tracking.

SenseTime Group Limited

RESEARCH VICE DIRECTOR

Hong Kong

Jun. 2019 - Jul. 2020

- We developed a product called SenseDrive Lidar, which is an FPGA-platform based SDK, providing accurate and realtime 3D detection and tracking for autonomous driving and V2X applications.
- We released the PandarMind64 algorithmic Lidar together with Hesai Technology.

SenseTime Group Limited

ADVANCED RESEARCHER

Hong Kong

Sep. 2017 - Mar. 2019

- We built the HDMap annotation platform and accelerated the map generation process by 10 times using deep learning algorithms.
- I was responsible for HDMap-assisted perception, including re-localization, traffic light recognition and association, etc.

SenseTime Group Limited

RESEARCH INTERN

Hong Kong

Sep. 2017 - Mar. 2019

- I developed deep learning algorithms for various medical imaging projects. We released i-Glaucoma, a smartphone based deep learning system for glaucoma detection, with Shenzhen Institute of Advanced Technology and Zhongshan Ophthalmic Center.

Honors & Awards

2018 **High-Level Talent in Nanshan District of Shenzhen**, Level C

Shenzhen

2018 **Shenzhen Peacock Talent Award**, Level C

Shenzhen

2017 **1st Place**, DAVIS Challenge on Video Object Segmentation

Honolulu, Hawaii

2016 **1st Place**, ImageNet Object Detection Challenge

Amsterdam, the
Netherlands

2015 **1nd Place**, ImageNet Object Detection from Video Challenge

Santiago, Chile

2015 **2nd Place**, ImageNet Object Detection Challenge

Santiago, Chile

2014 **2nd Place**, ImageNet Object Detection Challenge

Zurich

2012-2016 **Ph.D studentship**, The Chinese University of Hong Kong

Hong Kong

Selected Publications

- **1200+ citation in Google Scholar with an H-index of 15.**
- Shaoshuai Shi, **Zhe Wang**, J Shi, X Wang, H Li, "From Points to Parts: 3D Object Detection from Point Cloud with Part-aware and Part-aggregation Network", TPAMI 2020.
- Mingyu Ding, **Zhe Wang**, Bolei Zhou, Jianping Shi, Zhiwu Lu, Ping Luo, "Every Frame Counts: Joint Learning of Video Segmentation and Optical Flow", AAAI 2020.
- Shaoshuai Shi, Chaoxu Guo, Li Jiang, **Zhe Wang**, Jianping Shi, Xiaogang Wang, Hongsheng Li, "PV-RCNN: Point-Voxel Feature Set Abstraction for 3D Object Detection", CVPR 2020.
- Mingyu Ding, Yuqi Huo, Hongwei Yi, **Zhe Wang**, Jianping Shi, Zhiwu Lu, Ping Luo, "Learning Depth-Guided Convolutions for Monocular 3D Object Detection", CVPR 2020.
- Mingyu Ding, **Zhe Wang**, Zhiwu Lu, "Cross-domain mapping learning for transductive zero-shot learning", Computer Vision and Image Understanding (CVIU), 2019.
- Mingyu Ding, **Zhe Wang**, Jiankai Sun, Jianping Shi, Ping Luo, "CamNet: Coarse-to-Fine Retrieval for Camera Re-Localization", International Conference in Computer Vision (ICCV), 2019.
- Wenwei Zhang, Hui Zhou, Shuyang Sun, **Zhe Wang**, Jianping Shi, CC Loy, "Robust Multi-Modality Multi-Object Tracking", International Conference in Computer Vision (ICCV), 2019.
- Kui Xu, **Zhe Wang**, Jianping Shi, Hongsheng Li, Qiangfeng Cliff Zhang, "A²-Net: Molecular Structure Estimation from Cryo-EM Density Volumes", The Thirty-Third AAAI Conference on Artificial Intelligence (AAAI-19). (spotlight)
- Guoxiang Qu*, Wenwei Zhang*, **Zhe Wang***, Xing Dai, Jianping Shi, Junjun He, Fei Lei, Xiulan Zhang, Yu Qiao, "StripNet: Towards Topology Consistent Strip Structure Segmentation", ACM Multimedia Conference (ACM-MM), 2018. (*equal contribution)
- Ceyuan Yang, **Zhe Wang**, Xinge Zhu, Chen Huang, Jianping Shi, Dahua Lin, "Pose Guided Human Video Generation", European Conference on Computer Vision (ECCV), 2018.
- **Zhe Wang**, Yanxin Yin, Jianping Shi, Wei Fang, Hongsheng Li, Xiaogang Wang, "Zoom-in-Net: Deep Mining Lesions for Diabetic Retinopathy Detection", International Conference on Medical Image Computing and Computer-Assisted Intervention (MICCAI), 2017.
- Kang Kai, Junjie Yan, Xingyu Zeng, B. Yang, Tong Xiao, Cong Zhang, **Zhe Wang**, Ruohui Wang, Xiaogang Wang, Wanli Ouyang. "T-CNN: Tubelets with Convolutional Neural Networks for Object Detection from Videos", IEEE Transactions on Circuits and Systems for Video Technology (TCSVT), 2017.
- Wanli Ouyang, Xingyu Zeng, Xiaogang Wang, S. Qiu, P. Luo, Y. Tian, Hongsheng Li, S. Yang, **Zhe Wang**, et al. "DeepID-Net: Object Detection with Deformable Part Based Convolutional Neural Networks", IEEE Transactions on Pattern Analysis and Machine Intelligence (TPAMI), 2017.
- Xingyu Zeng, Wanli Ouyang, Junjie Yan, Hongsheng Li, Tong Xiao, Kun Wang, Yu Liu, Y. Zhou, Bin Yang, **Zhe Wang**, Hui Zhou, Xiaogang Wang. "Crafting GBD-Net for Object Detection", IEEE Transactions on Pattern Analysis and Machine Intelligence (TPAMI), 2017.
- **Zhe Wang**, Hongsheng Li, Wanli Ouyang, Xiaogang Wang. "Learnable Histogram: Statistical Context Features for Deep Neural Networks", European Conference on Computer Vision (ECCV), 2016.
- Wanli Ouyang, Xiaogang Wang, Xingyu Zeng, Shi Qiu, Ping Luo, Yonglong Tian, Hongsheng Li, Shuo Yang, **Zhe Wang**, CC Loy, Xiaoou Tang. "DeepID-Net: Deformable Deep Convolutional Neural Networks for Object Detection", In Proc. CVPR 2015

Selected Patents

- **70+ patents authorized or in application.**
- Vehicle-mounted camera pose estimation method, apparatus, and system, and electronic device, X Dai, **Z Wang**, SHI Jianping, US Patent App. 16/748,785
- Methods and apparatuses for image detection, electronic devices and storage media, **Z Wang**, SHI Jianping, H Li, X Wang, US Patent App. 16/457,317
- METHOD AND APPARATUS FOR SEGMENTING VIDEO OBJECT, ELECTRONIC DEVICE, AND STORAGE MEDIUM, X LI, Y Qi, **Z Wang**, K Chen, Z Liu, J Shi, P Luo, CC Loy, X Tang, US Patent App. 16/236,482

Professional Services

- **Journal Reviewer:** Medical Image Analysis, IEEE Transactions on Biomedical Engineering, IEEE Transactions on Circuits and Systems for Video Technology
- **Conference Reviewer:** CVPR 20', ICCV 19', ECCV 20', MICCAI 19', etc.