

# Jun CEN

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Degree	University	Major	Year	Supervisor	GPA
PhD	HKUST	Robotics	2020-now	Qifeng Chen, Michael Wang	3.98/4.3
MSc	HKUST	Mechanical	2019-20	Lilong Cai	3.99/4.3
Bachelor	Zhejiang University	Mechatronics	2015-19	Jinghua Xu	3.82/4.0

## Research Interests

- **Life-long Learning:** *open-set recognition* and *incremental learning* in 2D/3D semantic segmentation, 3D object detection, image/video recognition, etc.

## Experience

- **MMLab, Nanyang Technological University; Shanghai AI Lab** (Mar'23-Aug'23)
  - Visiting Student, supervised by Prof. Ziwei Liu
- **DAMO Academy, Alibaba Group** (Mar'22-Mar'23)
  - Research Intern, supervised by Dr. Shiwei Zhang
- **Robotics and Artificial Intelligence Laboratory, The Chinese University of Hong Kong (SZ)** (Oct'19-Jan'20)
  - Research Assistant, supervised by Prof. Tin Lun Lam
- **Autonomous Driving Group, HIKVISION** (Mar'20-Jul'20)
  - Algorithm Engineer, supervised by Dr. Yushi Zhu

## Representative Publication

- [1]. **CMDFusion: Bidirectional Fusion Network with Cross-modality Knowledge Distillation for LIDAR Semantic Segmentation**  
Jun CEN, Shiwei Zhang, Yixuan Pei, Kun Li, Hang Zheng, Maochun Luo, Yingya Zhang, Qifeng Chen  
[[Under Review](#)]
- [2]. **Enlarge Instance-specific and Class-specific Information for Open-set Action Recognition**  
Jun CEN, Shiwei Zhang, Xiang Wang, Yixuan Pei, Zhiwu Qing, Yingya Zhang, Qifeng Chen  
*Computer Vision and Pattern Recognition Conference* [[CVPR 2023](#)]
- [3]. **The Devil is in the Wrongly-classified Samples: Towards Unified Open-set Recognition**  
Jun CEN\*, Di Luan\*, Shiwei Zhang, Yixuan Pei, Yingya Zhang, Deli Zhao, Shaojie Shen, Qifeng Chen  
*International Conference on Learning Representations 2023* [[ICLR 2023](#)]
- [4]. **Open-world Semantic Segmentation for LIDAR Point Clouds**  
Jun Cen, Peng Yun, Shiwei Zhang, Junhao Cai, Di Luan, Mingqian Tang, Michael Yu Wang, Ming Liu  
*European Conference on Computer Vision 2022* [[ECCV 2022](#)]
- [5]. **Open-set 3D Object Detection**  
Jun Cen, Peng Yun, Junhao Cai, Michael Yu Wang, Ming Liu  
*International Conference on 3D Vision 2021* [[3DV 2021](#)]
- [6]. **Deep Metric Learning for Open World Semantic Segmentation**  
Jun Cen, Peng Yun, Junhao Cai, Michael Yu Wang, Ming Liu  
*International Conference on Computer Vision 2021* [[ICCV 2021](#)]
- [7]. **BORM: Bayesian Object Relation Model for Indoor Scene Recognition**  
Liguang Zhou, Jun Cen, Xingchao Wang, Zhenglong Sun, Tin Lun Lam, Yangsheng Xu  
*International Conference on Robotics and Systems 2021* [[IROS 2021](#)]

## Other Publication

- [1]. **Learning a Condensed Frame for Memory-Efficient Video Class-Incremental Learning**  
Yixuan Pei, Zhiwu Qing, Jun CEN, Xiang Wang, Shiwei Zhang, Yaxiong Wang, Mingqian Tang, Nong Sang, Xueming Qian  
*Conference on Neural Information Processing Systems 2022* [[NeurIPS 2022](#)]
- [2]. **Real-Time Collision-Free Grasp Pose Detection With Geometry-Aware Refinement Using High-Resolution Volume**  
Junhao Cai, Jun Cen, Haokun Wang, Michael Yu Wang  
*Robotics and Automation Letters 2022* [[ICRA with R-AL 2022](#)]
- [3]. **Conflicts between Likelihood and Knowledge Distillation in Task Incremental Learning for 3D Object Detection**  
Peng Yun, Jun Cen, Ming Liu  
*International Conference on 3D Vision 2021* [[3DV 2021](#)]
- [4]. **Precision forward design for 3D printing using kinematic sensitivity via Jacobian matrix considering uncertainty**  
Jinghua Xu, Xueqing Feng, Jun Cen, Shuyou Zhang  
*The International Journal of Advanced Manufacturing Technology 2020*

## Professional Service

- **Reviewer** for T-PAMI, NeurIPS, CVPR, ICCV, ICRA, IROS, JAS (中国自动化学报)

## Projects

- **Life-long Learning System for 3D Object Detection in Autonomous Driving** (Jan'21-Jan'22)
  - HKJRI-52, Kaisa Seed Project, supervised by Prof. Michael Yu Wang
- **Segment Any RGBD** (April'23-April'23)
  - <https://github.com/Jun-CEN/SegmentAnyRGBD>
  - More than **300 stars** on Github, and more than **1K Likes and 130K Views** on Twitter!

## Patents

- 行为识别方法、装置、设备和存储介质, 岑俊、张士伟、吕逸良、赵德丽, 中国发明专利 (已授权), 202210952356X
- 视频处理方法及设备, 岑俊、裴逸璇、张士伟、吕逸良、赵德丽, 中国发明专利 (已授权), 202211099158X

## Awards

- Outstanding Research Intern, Alibaba Group, 2023. (4 candidates for computer vision per year)
- Overseas Research Award, 2023, HKUST
- Postgraduate Studentship, 2020-2024, HKUST
- School of Engineering Excellent Student Scholarship, 2019-2020, HKUST. (Top 5%)
- School of Engineering Entrance Scholarship, 2019-2020, HKUST. (Top 2%)