

ENZE XIE

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HIGHLIGHTS

- My research is computer vision, especially detection and segmentation with self/semi/weak supervision.
- I am supervised by Prof. Ping Luo at MMLab HKU. Currently I am having an internship in NVIDIA Research, working with Dr. Zhiding Yu, Dr. Jose M. Alvarez and Prof. Sanja Fidler.
- My work PolarMask was selected as **CVPR 2020 Top-10 Influential Papers** and with 730+ github star.
- I co-developed OpenSelfSup (1.2k github star), which is a popular self-supervised learning toolbox.

EDUCATION

The University of Hong Kong, Hong Kong 2019.10 – 2022.7(Expected)

Phd: Computer Vision *Supervisor:* Prof. Ping Luo.

Tongji University, Shanghai 2016.09 – 2019.04

Master: Computer Science

Nanjing University of Aeronautics and Astronautics, Nanjing 2012.09 – 2016.06

Bachelor: Aircraft Manufacturing

PUBLICATIONS

Publication: **9** first/co-first papers (TPAMI, CVPR, ICCV, ECCV). Citation: **511**

Google Scholar: <https://scholar.google.com/citations?user=42MVVPgAAAAJ&hl=zh-CN>

Github: <https://github.com/xieenze>

Top-Tier Computer Vision Papers

- [1] PolarMask: Single Shot Instance Segmentation with Polar Representation
Enze Xie*, Peize Sun*, Xiaoge Song*, Wenhai Wang, Chunhua Shen, Ping Luo
CVPR 2020 (Oral) (Top-10 Influential Papers)
- [2] PolarMask++: Enhanced Polar Representation for Single-Shot Instance Segmentation and Beyond
Enze Xie, Wenhai Wang, Mingyu Ding, Ruimao Zhang, Ping Luo
TPAMI 2021
- [3] Segmenting Transparent Objects in the Wild with Transformer
Enze Xie, Wenjia Wang, Wenhai Wang, Peize Sun, Hang Xu, Ding Liang, Ping Luo
IJCAI 2021
- [4] Segmenting Transparent Objects in the Wild
Enze Xie, Wenjia Wang, Wenhai Wang, Mingyu Ding, Chunhua Shen, Ping Luo
ECCV2020
- [5] Scene Text Detection with Supervised Pyramid Context Network
Enze Xie*, Yuhang Zang*, Shuai Shao, Gang Yu, Cong Yao, Guangyao Li
AAAI 2019
- [6] PAN++: Towards Efficient and Accurate End-to-End Spotting of Arbitrarily-Shaped Text
Wenhai Wang*, **Enze Xie***, Xiang Li, Ding Liang, Ding Liang, Zhibo Yang, Tong Lu, Chunhua Shen
TPAMI 2021
- [7] Shape Robust Text Detection with Progressive Scale Expansion Network
Wenhai Wang*, **Enze Xie***, Xiang Li, Wenbo Hou, Tong Lu, Gang Yu, Shuai Shao
CVPR 2019
- [8] Efficient and Accurate Arbitrary-Shaped Text Detection with Pixel Aggregation Network
Wenhai Wang*, **Enze Xie***, Xiaoge Song, Yuhang Zang, Tong Lu, Gang Yu, Chunhua Shen
ICCV 2019

- [9] Scene Text Image Super-Resolution in the Wild
Wenjia Wang*, **Enze Xie***, Xuebo Liu, Wenhai Wang, Ding Liang, Chunhua Shen, Xiang Bai
ECCV2020
- [10] Differentiable Hierarchical Graph Grouping for Multi-Person Pose Estimation
Sheng Jin, Wentao Liu, **Enze Xie**, Wenhai Wang, Chen Qian, Wanli Ouyang, Ping Luo
ECCV2020
- [11] AE TextSpotter: Learning Visual and Linguistic Representation for Ambiguous Text Spotting
Wenhai Wang, Xuebo Liu, Xiaozhong Ji, **Enze Xie**, Ding Liang, ..., Chunhua Shen, Ping Luo
ECCV2020

In Submission

- [1] DetCo: Unsupervised Contrastive Learning for Object Detection
Enze Xie*, Jian Ding*, Wenhai Wang, Xiaohang Zhan, Hang Xu, Zhenguo Li, Ping Luo
- [2] Unsupervised Pretraining for Object Detection by Patch Reidentification
Jian Ding*, **Enze Xie***, Hang Xu, Chenhan Jiang, Zhenguo Li, Ping Luo, Gui-Song Xia
- [3] Pyramid Vision Transformer: A Versatile Backbone for Dense Prediction without Convolutions
Wenhai Wang, **Enze Xie**, Xiang Li, Deng-Ping Fan, Kaitao Song, ..., Ping Luo, Ling Shao
- [4] What Makes for End-to-End Object Detection?
Peize Sun, Yi Jiang, **Enze Xie**, Zehuan Yuan, Changhu Wang, Ping Luo
- [5] OneNet: End-to-End Object Detection without Transformer
Peize Sun, **Enze Xie**, Yi Jiang, Zehuan Yuan, Changhu Wang, Ping Luo
- [6] SelfText Beyond Polygon: Unconstrained Text Detection with Box Supervision and Dynamic Self-Training
Weijia Wu*, **Enze Xie***, Ruimao Zhang, Wenhai Wang, Guan Pang, Zhen Li, Hong Zhou, Ping Luo
- [7] Mask Quality Estimation for Instance Segmentation(TIP major)
Wenhai Wang, **Enze Xie**, Xiang Li, Jian Li, Ding Liang, Tong Lu, Chunhua Shen
- [8] Improving Monocular Visual Odometry Using Robustly Learned Depth (T-RO major)
Wei Yin, Libo Sun, **Enze Xie**, Zhengrong Li, and Changming Sun
- [9] TransTrack: Multiple-Object Tracking with Transformer
Peize Sun, Yi Jiang, Rufeng Zhang, **Enze Xie**, Jinkun Cao, Xinting Hu, Tao Kong, ..., Ping Luo
- [10] Watch Only Once: An End-to-End Video Action Detection Framework
Shoufa Chen, Peize Sun, **Enze Xie**, Chongjian Ge, Jiannan Wu, Lan Ma, Jiajun Shen, Ping Luo.
- [11] Towards Ultra-Resolution Neural Style Transfer via Thumbnail Instance Normalization
Zhe Chen, Wenhai Wang, **Enze Xie**, Tong Lu, Ping Luo.

EXPERIENCE

NVIDIA Reserach , Santa Clara County, California, US 2021.03 – Now

Research Intern

- Work with Dr. Zhiding Yu, Dr. Jose M. Alvarez and Prof. Sanja Fidler on 3D detection->tracking->forecasting in autonomous driving with Transformers.

Facebook Apply Machine Learning Team, Menlo Park, California, US 2020.05 – 2020.07

Project Collaborator

- Work with Dr. Guan Pang and Dr. Tal Hassner on semi & weak supervised text detection. Submit 1 paper.

Huawei Noah's Ark Lab , AI Foundation Theory Group, Shenzhen 2020.06 – 2021.2

Research Intern

- Work with Dr. Hang Xu and Dr. Zhenguo Li on self-supervised learning and Transformers for dense predictions. Submit 2 papers on self-supervised learning and 1 paper on Transformer-based semantic segmentation.

SenseTime, General Model Group, Beijing 2019.07 – 2020.03

Research Intern

- Work with Ding Liang on object detection, instance segmentation and Pose Estimation. 1 paper accepted by CVPR2020 (Oral) and 4 paper accpeted by ECCV2020.

Megvii(Face++), Detection Group, Beijing

2018.04 – 2019.07

Research Intern

- Apply detection algorithms to products *e.g.* car/license/pedestrian detection.
- Work with Dr. Gang Yu on scene text detection. 3 papers accepted by AAAI2019, CVPR2019 and ICCV2019.

eBay Traffic Team, Shanghai

2017.07 – 2017.12

Data Develop Intern

- Use big data tools(*e.g.* Hadoop/Spark/Flume/Kafka/Zookeeper/Kudu) to process thousands of TB of data in eBay.

AWARDS AND HONORS

- National Artificial Intelligence Challenge (NAIC) 2020 , Remote Sensing Semantic Segmentation Task, **1st Place, 1,000,000 RMB** 2020
- OpenImage 2019 Instance Segmentation, **1st Place** 2019
- ICDAR2019 Arbitrary-Shaped Text Detection, **1st Place** 2019
- ICDAR 2019 Large-scale Street View Text Detection, **2nd Place** 2019
- Outstanding Master Thesis Award, Tongji University 2019
- HKU Postgraduate Scholarship 2019-now

SOME POPULAR PROJECTS

OpenSelfSup: Self-Supervised Learning Toolbox and Benchmark

Github (1.2k star): <https://github.com/open-mmlab/OpenSelfSup>

- OpenSelfSup is an open source unsupervised representation learning toolbox based on PyTorch.

Shape Robust Text Detection with Progressive Scale Expansion Network

CVPR'19

Github (1k star): <https://github.com/whai362/PSENet>

- PSENet is a practical algorithm to detect scene text with arbitrary shape. It is used in many companies, *e.g.* HUAWEI, ByteDance, SenseTime and MEGVII.

PolarMask: Single Shot Instance Segmentation with Polar Representation

CVPR'20 & TPAMI'21

Github (730 star): <https://github.com/xieenze/PolarMask>

- A novel method to represent instance with polar coordinate. CVPR20's Top-10 Influential Papers.

ACADEMIC SERVICE

- CVPR2019, ICCV2019 Student Volunteer
- Conference Reviewer for CVPR, ICCV, ECCV, AAAI, IJCAI, ACCV, WACV
- Journal Reviewer for T-MM, NeuroComputing, TNNLS