

Haobo Yuan

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EDUCATION

Wuhan University, *M.S. in Computer Science and Technology* *Sep. 2020 - June. 2023*

GPA: 92.2 / 100; Ranking: 7th out of 135; Advisor: **Dr. Lefei Zhang**.

Wuhan University, *B.E. in Computer Science and Technology (with honor)* *Sep. 2016 - May. 2020*

GPA: 3.77 / 4.00; Ranking: 6th in the **Hongyi Honors Program** (selected from 587 CS students).

RESEARCH EXPERIENCES

Nanyang Technological University, Singapore *Aug. 2023 - Present*

- Working as a research associate advised by Dr. Chen Change Loy on computer vision research.
- Several on-going research projects focusing on video and image segmentation [3].

JD Explore Academy, Beijing *June. 2021 - Apr. 2023*

- Advised by Dr. Yibo Yang and Dr. Dacheng Tao working on computer vision research.
- Proposed instance-level depth prediction scheme and further built a unified depth-aware video panoptic segmentation framework. (ranks 1st in ICCV-2021 BMTT Challenge Depth + Video track) [2]
- Several research projects focusing on Video Instance / Panoptic Segmentation [2], Neural Network Initialization [9], Multi-task Dense Prediction [11], and Class Incremental Learning [5][4].

Horizon Robotics, Remote *Nov. 2020 - May. 2021*

- Advised by Dr. Wei Sui and Dr. Qian Zhang working on 3D computer vision.
- Proposed a planar parallax estimation scheme to leverage the road plane prior for 3D sensing. [1]

PUBLICATIONS

- [1] **Haobo Yuan***, Teng Chen*, Wei Sui, Jiafeng Xie, Lefei Zhang, Yuan Li, and Qian Zhang. Monocular Road Planar Parallax Estimation. *IEEE TIP*, 2023.
- [2] **Haobo Yuan***, Xiangtai Li*, Yibo Yang, Guangliang Cheng, Jing Zhang, Yunhai Tong, Lefei Zhang, and Dacheng Tao. PolyphonicFormer: Unified Query Learning for Depth-aware Video Panoptic Segmentation. In *ECCV*, 2022. Tel Aviv, Israel.
- [3] Xiangtai Li, **Haobo Yuan**, Wenwei Zhang, Guangliang Cheng, Jiangmiao Pang, and Chen Change Loy. Tube-Link: A Flexible Cross Tube Baseline for Universal Video Segmentation. In *ICCV*, 2023. Paris, France.
- [4] Yibo Yang*, **Haobo Yuan***, Xiangtai Li, Zhouchen Lin, Philip Torr, and Dacheng Tao. Neural Collapse Inspired Feature-Classifer Alignment for Few-Shot Class-Incremental Learning. In *ICLR*, 2023. Kigali, Rwanda. (**Spotlight**)
- [5] Yibo Yang*, **Haobo Yuan***, Xiangtai Li, Jianlong Wu, Lefei Zhang, Zhouchen Lin, Philip Torr, Dacheng Tao, and Bernard Ghanem. Neural Collapse Terminus: A Unified Solution for Class Incremental Learning and Its Variants. arXiv pre-print, 2023.
- [6] Jianzong Wu*, Xiangtai Li*, Shilin Xu*, **Haobo Yuan***, Henghui Ding, Yibo Yang, Xia Li, Jiangning Zhang, Yunhai Tong, Xudong Jiang, Bernard Ghanem, and Dacheng Tao. Towards Open Vo-

cabulary Learning: A Survey. arXiv pre-print, 2023.

- [7] Xiangtai Li, Henghui Ding, Wenwei Zhang, **Haobo Yuan**, Jiangmiao Pang, Guangliang Cheng, Kai Chen, Ziwei Liu, and Chen Change Loy. Transformer-based Visual Segmentation: A Survey. arXiv pre-print, 2023.
- [8] Xiangtai Li, Shilin Xu, Yibo Yang, **Haobo Yuan**, Guangliang Cheng, Yunhai Tong, Zhouchen Lin, Ming-Hsuan Yang, Dacheng Tao. PanopticPartFormer++: A Unified and Decoupled View for Panoptic Part Segmentation. arXiv pre-print, 2023.
- [9] Yibo Yang, Hong Wang, **Haobo Yuan**, and Zhouchen Lin. Towards Theoretically Inspired Neural Initialization Optimization. In *NeurIPS*, 2022. New Orleans, LA, USA.
- [10] Dian Chen, **Haobo Yuan**, Shengshan Hu, Qian Wang, and Cong Wang. BOSSA: a decentralized system for proofs of data retrievability and replication. *IEEE TPDS* (top system journal), 2021.
- [11] Yangyang Xu, Xiangtai Li, **Haobo Yuan**, Yibo Yang, Lefei Zhang. Multi-Task Learning with Multi-query Transformer for Dense Prediction. *IEEE TCSVT*, 2023.

TEACHING EXPERIENCES

“Computer Systems”, Teaching Assistant, Wuhan University. *Sep. 2019 - Dec. 2019*

HONORS & AWARDS

1st position on ICCV-2021 BMTT Challenge Depth + Video Track. *2021*

1st position on DoraHacks@Wuhan Hackathon. *2018*

1st Prize on National Olympiad in Informatics in Provinces (NOIP). *2014*

Outstanding Scholarship, Wuhan University. *2017, 2018, 2019*

Hongyi Academic Scholarship, Wuhan University *2017, 2018, 2019*

Merit / Excellent Student, Wuhan University. *2017, 2018, 2019*

MISC

Conference Reviewer: CVPR '23'24, ICCV '23, NeurIPS '23.

Journal Reviewer: Pattern Recognition, Neural Processing Letters, IEEE TGRS.

Open Source Contributions: I contributed to the code of Pytorch and mmdetection on GitHub.

English: TOEFL: 102, 107 (exp.); GRE: 329 + 4.0.

REFERENCES

Dr. Xiangtai Li, Research Fellow@NTU lxtpk@pku.edu.cn
Dr. Yibo Yang, Research Scientist@JD Explore Academy ibo@pku.edu.cn
Dr. Lefei Zhang, Professor@WHU zhanglefei@whu.edu.cn