WENHAI WANG

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Homepage: `https://whai362.github.io`

EDUCATION

Nanjing University, Nanjing, China   Sep. 2016 - Present
Ph.D. candidate in Computer Science and Technology, *Supervised by Prof. Tong Lu*.

Nanjing University of Science and Technology, Nanjing, China   Sep. 2012 - Jun. 2016
B.E. in Software Engineering.

RESEARCH INTERESTS

• Optical Character Recognition [2, 3, 4, 9]
• Deep Neural Networks Exploration [1, 5]
• Object Detection / Instance Segmentation [6, 7]

EXPERIENCE

Github: `https://github.com/whai362`

The University of Hong Kong, Hongkong, China   Oct. 2019 - Mar. 2020
Research Assistant, *Supervised by Prof. Ping Luo*

• **One-stage Instance Segmentation**. Proposed an anchor-box free and single shot instance segmentation method, termed PolarMask, which formulates the instance segmentation problem as instance center classification and dense distance regression in a polar coordinate. This work *PolarMask: Single Shot Instance Segmentation with Polar Representation* is accepted by CVPR 2020.

SenseTime, Beijing, China   Aug. 2019 - Mar. 2020
Research Intern, *Supervised by Xuebo Liu and Ding Liang*

• **Optical Character Recognition**. Did research on text detection and recognition in natural scenes, and tried to 1) solve the ambiguity in text detection and 2) design a real-time algorithm for arbitrary-shaped text detection and recognition. Papers on both topics are in preparation.

Momenta, Beijing, China   Jun. 2018 - Dec. 2018
Research Intern, *Supervised by Dr. Xiang Li*

• **Deep Neural Networks Exploration**. Did research on the receptive fields of CNNs, and designed a dynamic selection mechanism in CNNs that allows each neuron to adaptively adjust its receptive field. This work *Selective Kernel Networks* is accepted by CVPR 2019.
• **Object Detection**. Led a team to take part in Autonomous Driving Perception Task in AI Challenger 2018. Re-implemented and improved Cascade R-CNN to detect objections in autonomous driving scenarios. Our team finally secured the 2nd place in the task.

CONTESTS

• National Artificial Intelligence Competition (NAIC) 2020 , Remote Sensing Semantic Segmentation Task, **1st Place, 1,000,000 RMB**   Nov. 2020
• ICDAR2019 Robust Reading Challenge on Arbitrary-Shaped Text, Task1, **1st Place**   May 2019
• ICDAR2019 Robust Reading Challenge on Large-scale Street View Text with Partial Labeling, Task1, **2nd Place**   Jun. 2019
• AI Challenger 2018 Autonomous Driving Perception Task, **2nd Place, 40,000 RMB**   Dec. 2018
• ACM-ICPC Asia Regional Contest, **Silver Medal**   Nov. 2015

Honors and Awards

- National Scholarship (top 1%)   Oct. 2019
- Outstanding Graduate Student   Jun. 2016

Publications

Google Scholar: `https://scholar.google.com/citations?user=WMOOglcAAAAJ`

Top-Tier Computer Vision Conference Papers

[1] **W. Wang**, X. Li, T. Lu, and J. Yang, *Mixed Link Networks*, in International Joint Conference on Artificial Intelligence (IJCAI), Stockholm, Sweden, 2018.

[2] **W. Wang**, E. Xie, X. Li, W. Hou, T. Lu, G. Yu, and S. Shao, *Shape Robust Text Detection with Progressive Scale Expansion Network*. in IEEE Conference on Computer Vision and Pattern Recognition (CVPR), Long Beach, CA, USA, 2019.

[3] **W. Wang**, E. Xie, X. Song, Y. Zang, W. Wang, T. Lu, ... and C. Shen, *Efficient and Accurate Arbitrary-Shaped Text Detection with Pixel Aggregation Network*, in IEEE International Conference on Computer Vision (ICCV), Seoul, Korea, 2019.

[4] **W. Wang**, X. Liu, X. Ji, E. Xie, D. Liang, Z. Yang, ... and P. Luo, *AE TextSpotter: Learning Visual and Linguistic Representation for Ambiguous Text Spotting*, in the European Conference on Computer Vision (ECCV), Online, 2020.

[5] X. Li, **W. Wang**, X. Hu, and J. Yang, *Selective Kernel Networks*, in IEEE Conference on Computer Vision and Pattern Recognition (CVPR), Long Beach, CA, USA, 2019.

[6] X. Li, **W. Wang**, L. Wu, S. Chen, X. Hu, J. Li, ... and J. Yang, *Generalized Focal Loss: Learning Qualified and Distributed Bounding Boxes for Dense Object Detection*, in Advances in Neural Information Processing Systems (NeurIPS), 2020.

[7] E. Xie, P. Sun, X. Song, **W. Wang**, C. Shen, P. Luo, *PolarMask: Single Shot Instance Segmentation with Polar Representation*, in IEEE Conference on Computer Vision and Pattern Recognition (CVPR), Seattle, Washington, USA, 2020.

[8] S. Jin, W. Liu, E Xie, **W. Wang**, C. Qian, W. Ouyang and P. Luo, *Differentiable Hierarchical Graph Grouping for Multi-Person Pose Estimation*, in the European Conference on Computer Vision (ECCV), Online, 2020.

[9] W. Wang, E. Xie, X. Liu, **W. Wang**, D. Liang, X. Bai and C. Shen, *Scene Text Image Super-Resolution in the Wild*, in the European Conference on Computer Vision (ECCV), Online, 2020.

[10] E. Xie, W. Wang, **W. Wang**, M. Ding, C. Shen and P. Luo, *Segmenting Transparent Objects in the Wild*, in the European Conference on Computer Vision (ECCV), Online, 2020.

Academic Service

Journal Reviewer

- Reviewer of IEEE Transactions on Multimedia (T-MM)

Conference Reviewer

- Reviewer of IEEE Conference on Computer Vision and Pattern Recognition (CVPR), 2020, 2021
- Reviewer of Neural Information Processing Systems (NeurIPS), 2020
- Reviewer of International Conference on Machine Learning (ICML), 2021
- Senior PC of International Joint Conference on Artificial Intelligence (IJCAI), 2021
- Reviewer of 15th Asian Conference on Computer Vision 2020 (ACCV), 2020
- Reviewer of IEEE Winter Conference on Applications of Computer Vision (WACV), 2021