

# Jialian Wu

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## EDUCATION

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**Doctor of Philosophy, State University of New York at Buffalo, USA** *Aug 2019 - 2023 (Expected)*  
Computer Science and Engineering  
Advisor: Dr. Junsong Yuan  
GPA: 3.9/4.0

**Graduate Study, Tianjin University, China** *Sept 2018 - July 2019*  
M.Eng. in Electronic Engineering  
Left for University at Buffalo in July 2019 before finishing my degree

**Bachelor of Engineering, Tianjin University, China** *Sept 2014 - July 2018*  
Electronic Engineering  
GPA: 3.85/4.0 (90.94/100), Top 5%  
Thesis: Multi-level Feature Fusion Network for Object Detection. (Outstanding Bachelor Thesis)

## RESEARCH INTEREST

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Object-centric analysis in videos and images including detection, segmentation, and tracking. Open-vocabulary object recognition. I am also interested in exploring other topics in computer vision and deep learning field.

## RESEARCH

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### *First-author Research:*

1. **Jialian Wu**, Sudhir Yarram, Hui Liang, Tian Lan, Junsong Yuan, Jayan Eledath, and Gerard Medioni, “Efficient Video Instance Segmentation via Tracklet Query and Proposal”, in *Proceedings of the IEEE Conference on Computer Vision and Pattern Recognition (CVPR)*, 2022. [\[Project Page\]](#) [\[PDF\]](#)
2. **Jialian Wu**, Jiale Cao, Liangchen Song, Yu Wang, Ming Yang, and Junsong Yuan, “Track to Detect and Segment: An Online Multi-Object Tracker”, in *Proceedings of the IEEE Conference on Computer Vision and Pattern Recognition (CVPR)*, 2021. [\[Project Page\]](#) [\[PDF\]](#) [\[Code\]](#) (500 GitHub Stars)
3. **Jialian Wu**, Liangchen Song, Qian Zhang, Ming Yang, and Junsong Yuan, “ForestDet: Large-Vocabulary Long-Tailed Object Detection and Instance Segmentation”, in *IEEE Transactions on Multimedia (TMM)*, 2021. [\[PDF\]](#) [\[Code\]](#)
4. **Jialian Wu**, Chunlun Zhou, Ming Yang, Qian Zhang, Yuan Li, and Junsong Yuan, “Temporal-Context Enhanced Detection of Heavily Occluded Pedestrians”, in *Proceedings of the IEEE Conference on Computer Vision and Pattern Recognition (CVPR)*, 2020. [\[PDF\]](#)
5. **Jialian Wu**, Liangchen Song, Tiancai Wang, Qian Zhang, and Junsong Yuan, “Forest R-CNN: Large-Vocabulary Long-Tailed Object Detection and Instance Segmentation”, in *Proceedings of the ACM International Conference on Multimedia (ACM MM)*, 2020. [\[PDF\]](#) [\[Code\]](#)
6. **Jialian Wu**, Chunlun Zhou, Qian Zhang, Ming Yang, and Junsong Yuan, “Self-Mimic Learning for Small-scale Pedestrian Detection”, in *Proceedings of the ACM International Conference on Multimedia (ACM MM)*, 2020. [\[PDF\]](#)

### *Second-author Research:*

7. Sudhir Yarram, **Jialian Wu**, Pan Ji, Yi Xu, and Junsong Yuan, “Deformable VisTR : Spatio Temporal Deformable Attention for Video Instance Segmentation”, in *Proceedings of the IEEE International Conference on Acoustics, Speech and Signal Processing (ICASSP)*, 2022.

8. Liangchen Song, **Jialian Wu**, Ming Yang, Qian Zhang, Yuan Li, and Junsong Yuan, “Stacked Homography Transformations for Multi-View Pedestrian Detection”, in *Proceedings of the IEEE International Conference on Computer Vision (ICCV)*, 2021. **(Oral)** [\[PDF\]](#)
9. Liangchen Song, **Jialian Wu**, Ming Yang, Qian Zhang, Yuan Li, and Junsong Yuan, “Handling Difficult Labels for Multi-label Image Classification via Uncertainty Distillation”, in *Proceedings of the ACM International Conference on Multimedia (ACM MM)*, 2021. [\[PDF\]](#)
10. Liangchen Song, **Jialian Wu**, Ming Yang, Qian Zhang, Yuan Li, and Junsong Yuan, “Robust Knowledge Transfer via Hybrid Forward on the Teacher-Student Model”, in *Proceedings of the AAAI Conference on Artificial Intelligence (AAAI)*, 2021. [\[PDF\]](#)

## INDUSTRY RESEARCH EXPERIENCE

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| <b>Applied Scientist Intern, Amazon</b><br><i>Amazon Go Team</i> , Mentors: Dr. Tian Lan, Dr. Hui Liang   | Oct 2022 - Dec 2022<br><i>Seattle, WA, USA</i>   |
| <b>Research Intern, Microsoft Research</b><br><i>Cognitive Research Team</i><br>Mentors: Dr. Jianfeng Wang, Dr. Zhe Gan, Dr. Lijuan Wang, Dr. Zhengyuan Yang, Dr. Zicheng Liu | May 2022 - Aug 2022<br><i>Redmond, WA, USA</i>   |
| <b>Applied Scientist Intern, Amazon</b><br><i>Amazon Go Team</i> , Mentors: Dr. Tian Lan, Dr. Hui Liang   | May 2021 - Aug 2021<br><i>Seattle, WA, USA</i>   |
| · <i>Video Instance Segmentation: EfficientVIS</i> (CVPR 2022) <a href="#">[Project Page]</a>   |  |
| <b>Research Intern, Horizon Robotics</b><br><i>Autonomous Driving Perception Team</i> , Mentor: Dr. Yu Wang   | May 2020 - Aug 2020<br><i>Cupertino, CA, USA</i> |
| · <i>Multi-Object Tracking: TraDeS</i> (CVPR 2021) <a href="#">[Project Page]</a> ; 500 GitHub stars; SOTA performance on 4 tasks, 6 datasets.                                |  |
| <b>Research Intern, Horizon Robotics</b><br>Mentor: Dr. Qian Zhang  | May 2018 - Aug 2018<br><i>Beijing, China</i>     |
| · <i>Pedestrian Detection: TFAN</i> (CVPR 2020) <a href="#">[PDF]</a> , and <i>SML</i> (ACM MM 2020) <a href="#">[PDF]</a>  |  |

## AWARDS & HONORS

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1. **Best CSE First Year Achiever Award**, State University of New York at Buffalo, 2020.
2. Outstanding Bachelor Thesis, Tianjin University, 2018.
3. First-class Entrance Fellowship, Tianjin University, 2018.
4. Tianjin City Fellowship, 2016.
5. Merit Student Fellowship, Tianjin University, 2015/2016/2017

## PROFESSIONAL SERVICES

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**Conference Reviewer:** CVPR 2020/2021(outstanding reviewer)/2022, ICCV 2021, ECCV 2022, AAAI 2021/2022, IJCAI 2021/2022, WACV 2021/2022, ICASSP 2021/2022, ACCV 2020, ICPR 2022

**Journal Reviewer:** IEEE Transactions on Image Processing, IEEE Transactions on Multimedia, IEEE Transactions on Circuits and Systems for Video Technology, Neurocomputing, Machine Vision and Applications

**Teaching Assistant:**

- CSE573: Computer Vision and Image Processing, Fall 2019.
- CSE191: Discrete Structures, Spring 2020.

## **COMPUTER SKILLS**

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Python, PyTorch, MXNET, Linux, etc