Guanchen Ding | Curriculum Vitae

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I am currently a master's student at **WHU-RS Institute of Artificial Intelligence and Machine Vision**, Wuhan, China, advised by **Prof. Zhenzhong Chen**. I mainly work on designing algorithms to address key problems in Crowd/Object counting and Action/Abnormal detection/recognition, such as scale variation in counting, domain gaps in different data sets and abnormal detection in complex scenarios.

Research Interests

- **Computer Vision**
  Object/Crowd counting, Action/Abnormal detection.
- **Image/Video Processing**
  Spatio-Temporal Super Resolution for Video Enhancement

Education

- Master Degree Candidate,
  School of Remote Sensing and Information Engineering, **Wuhan University** *2020 – Present*
  (Advisor: Professor Zhenzhong Chen)
- Bachelor Degree,
  School of Remote Sensing and Information Engineering, **Wuhan University** *2016 – 2020*
- Minor Degree,
  School of Economics and Management, **Wuhan University** *2017 – 2020*

Project Experience

- **Spatio-Temporal Super Resolution for Video Enhancement** *2022–*
  Research and development of Spatio-Temporal Super Resolution for Video Enhancement. The work will focus on the miniaturization and real-time of the model. I'm doing this work under the joint supervision of **Prof. Changwen Chen** in PolyU.
- **Object Detection/Tracking & Abnormal Detection for Smart City Surveillance** *2020–2021*
  Research and development of object detection/tracking and abnormal detection models for natural images/videos and surveillance images/videos. This work was supported by National Key R&D Program of China and the Fundamental Research Funds for the Central Universities. Two conference paper were accepted by CVPRW2021 and CVPRW2022 respectively and won 3rd on Track4 in AI City in CVPRW2021.

- **Computer Vision Technologies for V2X** *2019–2021*
  Research and development of object counting models for images/videos and domain gaps in different data sets. Research, development and deployment of object detection/classification and abnormal detection algorithms. These two works were supported by the National Natural Science Foundation of China and Tencent. A conference paper was accepted by VCIP, two journal papers were accepted by IEEE TMM and IEEE TGRS, and won 2nd on track3 in VisDrone in ICCVW2021.

Selected Publications

- **Guanchen Ding**, Mingpeng Cui, Daiqin Yang, et al., Satellite-Based Object Counting via Adaptive Density Map Assisted Learning, IEEE Transactions on Geoscience and Remote Sensing (TGRS, IF=8.125), Sep. 2022.
- **Guanchen Ding**, Daiqin Yang, et al., Crowd counting via unsupervised cross-domain feature adaptation, IEEE Transactions on Multimedia (TMM, IF=8.182), May 2022.
- **Guanchen Ding***, Wenwei Han*, Chenglong Wang*, et al., A Coarse-to-Fine Boundary Localization method for Naturalistic Driving Action Recognition, in Proceedings of the IEEE/CVF Conference on Computer Vision and Pattern Recognition (CVPR) Workshops. 2022. (Co-first Author)
- Jingyuan Chen*, **Guanchen Ding***, Yuchen Yang* et al., Dual-Modality Vehicle Anomaly Detection via Bilateral Trajectory Tracing, in Proceedings of the IEEE/CVF Conference on Computer Vision and Pattern Recognition (CVPR) Workshops. 2021. (Co-first Author)
- Jingxian Huang*, **Guanchen Ding*** et al., Drone-Based Car Counting via Density Map Learning, IEEE International Conference on Visual Communications and Image Processing (VCIP). 2020.(Co-first Author)

Selected Scholarships and Honors

- National scholarship for Postgraduates 2022
- The First-class scholarship of Wuhan University. 2021, 2019, 2018
- The Special Scholarship of Wuhan University. 2019 zhizhuo, 2018 zhonghaida
- The Merit Student of Wuhan University. 2019, 2018
- The Excellent Student Leader Awards of Wuhan University. 2019
- The Special Activists of Wuhan University. 2018
- The Excellent Youth Communist of Wuhan University. 2017

Selected Awards

- 2nd Place on Track3, 4th Vision Meets Drones: A Challenge in ICCVW2021. 2021, Leader
- 3rd Place on Track4, 5th AI City Challenge in CVPRW2021. 2021, Leader
- Meritorious Winner, MCM/ICM Contest. 2019, Leader
- First Prize, Geoscientific Data Utilization Competition. 2018, Leader
- First Prize, APMCM. 2018, Leader
- First Prize, Internet + Land and Resources Big Data Innovation Application Competition. 2018, Member

Services and Personal skills

- **Reviewer:** IEEE TGRS
- **Programming Languages:** Python (PyTorch) = HTML/CSS/JavaScript (Bootstrap, Vue) > Matlab > C/C++ > Java (SpringMVC, SpringBoot) = Scala = Go (Gin)
- **Other:** LaTeX, can write well organised and structured reports, good presentation skills, works well in a team.