Jinxiang Huang

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EDUCATION

Beijing Institute of Technology (Postgraduate Recommendation) ***Sep 2022 - Expected Jun 2025***

Major: Instrument Science and Technology **Master**

GPA: 3.78/4.0 **WAM: 90.2/100** Supervisor: Prof. Yong Song

Beijing Jiaotong University ***Sep 2018 - Jun 2022***

Major: Measurement and Control Technology and Instrument **Bachelor**

GPA: 3.65/4.0 **WAM: 86.5/100**

PUBLICATIONS

[1] **J. Huang**, H. Chang, X. Yang, Y. Liu, et al, (2024) "RDR-KD: A Knowledge Distillation Detection Framework for Drone Scenes" in ***IEEE Geoscience and Remote Sensing Letters***, doi: 10.1109/LGRS.2024.3398140. (Q1, IF=4.8)

[2] X. Yang, **J. Huang**, Y. Liao, Y. Song, et al, (2024) "Light Siamese Network for Long-term Onboard Aerial Tracking" in ***IEEE Transactions on Geoscience and Remote Sensing***, doi: 10.1109/TGRS.2024.3397916. (Q1, IF=8.2)

[3] X. Yang, Y. Song, Y. Zhou, Y. Liao, J. Yang, **J. Huang**, Y. Huang, et al, (2023) "An Efficient Detection Framework for Aerial Imagery Based on Uniform Slicing Window" in ***Remote Sensing***, doi: 10.3390/rs15174122. (Q1, IF=5.0)

[4] J. Yang, X. Yang, Y. Liao, **J. Huang**, et al, (2024) "Multispectral Sample Augmentation and Illumination Guidance for RGB-T Object Detection by MMDetection Framework" in ***2024 International Conference on Computer Network and Cloud Computing***. (EI, *Accepted*)

[5] S. Liu, G. Wang, Y. Song, **J. Huang**, Y. Huang, Y. Huang, et al, "SiamEFT: Adaptive-Time Feature Extraction Hybrid Network for RGBE Multi-Domain Object Tracking" in ***Frontiers in Neuroscience***. (Q2, IF=4.3, *Under Review*)

[6] Y. Bai, Y. Song, X. Li, Y. Zhou, F. Dong, X. Yang, Y. Liao, **J. Huang**, "KeyBoxGAN: Enhancing 2D Object Detection Through Annotated and Editable Image Synthesis" in ***Applied Intelligence***. (Q2, IF=3.4, *Under Review*)

[7] Y. Huang, S. Liu, F. Dong, X. Li, X. Yang, Y. Zhou, **J. Huang**, Y. Song, "PL-MCT: Pseudo Labeling and Multi-frame Consistency Training for Semi-Supervised Visual Tracking" in ***Visual Computer.*** (Q1, IF=3.0, *Under Review*)

RESEARCH EXPERIENCES

➢ **Knowledge Distillation Algorithm for Complex Low-Altitude Aerial Scenes** ***Sep 2023 - Present***

Description: This study aimed to address the dilemma between the limited hardware resources of drone platform and high-precision ground detection.

- Proposed a distillation framework for drone object detection fusing feature distillation and response distillation.
- Solved the problem of low detection accuracy and unbalanced categories of tiny objects in complex low-altitude scenes.
- Published research findings in *IEEE Geoscience and Remote Sensing Letters* (JCR Q1, IF=4.8) as first author and *IEEE Transactions on Geoscience and Remote Sensing* (JCR Q1, IF=8.2) as second author, contributing to advancements in drone object detection and knowledge distillation.

➢ **Air-Ground Cooperative Information Processing System Based on Drone Platform** ***Feb 2023 - Sep 2023***

Description: This study aimed to combine ground equipment and drone platform for high-precision object detection.

- Collected and built a vehicle and pedestrian dataset using drones (DJI-M300-RTK) in the suburbs of Beijing.
- Designed a tiny object detection network with multi-scale feature fusion and cross-channel interactive attention.
- Proposed a mosaic plus augmentation and crystallization copy-paste augmentation.

➢ **Multi-Object Rotation Detection Algorithm Based on Optical Remote Sensing Images** ***Sep 2022 - Jun 2023***

Description: This study aimed to provide an effective solution for high-precision localization of objects in any direction in optical remote sensing images.

- Designed a one-stage rotating object detection network without anchor.
- As the ***team leader,*** participated in the AI Challenge competition organized by China Academy of Launch Vehicle Technology and successfully deployed the algorithm to the corresponding environment by using Docker.
- Conducted experimental validation and comparison on remote sensing datasets such as DOTA and HRSC2016 in various scenes.

➢ **Salient Object Detection Algorithm (*Outstanding Undergraduate Thesis Award*)** ***Jan 2022 - Jun 2022***

Description: This study aimed to identify the most visually appealing objects by mimicking the human visual perception system.

- Developed a salient object detection algorithm based on hybrid loss function and multimodal input.
- Designed a CNN-based salient object detection software using PyQt5 toolkit.

HONORS AND AWARDS

- **Graduate First Prize Scholarship,** Beijing Institute of Technology ***2023***
- **Outstanding Student,** Beijing Institute of Technology ***2023***
- **Outstanding League Cadres,** Beijing Institute of Technology ***2023***
- **Advanced Individual,** Beijing Institute of Technology Graduate Student Association ***2023***
- **First Academic Scholarship for New Graduate Students,** Beijing Institute of Technology ***2022***
- **Outstanding Individual,** Beijing Winter Olympics Volunteers ***2022***
- **Merit Award,** National Undergraduate Training Program for Innovation and Entrepreneurship ***2021***
- **First Prize at the Beijing Municipal Level,** The 11th Challenge Cup ***2021***
- **Academic Excellent Scholarship,** Beijing Jiaotong University ***2020&2021***
- **Merit Award,** The Third 3D Printing Competition at Tsinghua University ***2020***

SKILLS & OTHERS

- **Programming:** Advanced in Python, Deep Learning base on PyTorch, Skilled in MATLAB, LaTeX, Ubuntu
- **Software:** PyCharm, Visual Studio Code, TeXstudio
- **Language:** Mandarin (Native), English (CET-4/CET-6, IELTS Preparation), Shaanxi dialect
- **Social Work：** Minister of Student Union (Beijing Institute of Technology), Monitor (Beijing Jiaotong University)
- **Others:** The Host of Beijing Institute of Technology Gala, Climbing, Vlogger, Runner, Cycling (Over 10,000 km)

SOCIAL ACTIVITY

➢ **Chaoyang District People's Government of Beijing Municipality** ***Sep 2021 - Feb 2022***

- Responsible for the cultivation of youth social organizations and volunteer preparations for Beijing Winter Olympics.