

Weizheng Wang

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GitHub: <https://github.com/4everimmortality>

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Research Interests

- Multimodal perception (vision-language models, multimodal computer vision)
- Object detection and tracking (YOLO series, DETR, DeepSORT, aerial video)
- Infrared-visible fusion, UAV-based smart monitoring
- Visual understanding and efficient deep learning deployment
- NLP fine-tuning

Education

Master of Artificial Intelligence and Machine Learning, **University of Adelaide**, Sep 2025 – May 2027

B.Eng. in Computer Science and Technology, **North China Institute of Science and Technology**, Sep 2021 – July 2025

GPA: 90.84/100

Publications

- Ren, G. , Wu, J. and Wang, W. (2025) Research on UAV Target Detection Based on Improved YOLOv11. Journal of Computer and Communications, 13, 74-85. [DOI: 10.4236/jcc.2025.133006](https://doi.org/10.4236/jcc.2025.133006).
- Wang, W., Wu, J., et al. (2024). "Real-time monitoring of trucks used in open pit based on aerial video of UAV." *2024 3rd International Conference on Robotics, Artificial Intelligence and Intelligent Control (RAIIC)*, 130-138. [DOI: 10.1109/RAIIC61787.2024.10671199](https://doi.org/10.1109/RAIIC61787.2024.10671199).
- Wu, J., Wang, W., et al. (2024). "Research on industrial meter readings based on improved YOLOv8." *Proc. SPIE 13181, Third International Conference on Electronic Information Engineering, Big Data, and Computer Technology (EIBDCT 2024)*, 131815G. [DOI: 10.1117/12.3031129](https://doi.org/10.1117/12.3031129).

- Wu, J., Wang, W., et al. (2023). "Study on the Application of Real-Time Drone Monitoring in Ordos Open-Pit Coal Mine." *Open Journal of Applied Sciences*, 13, 483-495. [DOI: 10.4236/ojapps.2023.134039](https://doi.org/10.4236/ojapps.2023.134039).

Patents

- Invention Patent (Under Substantive Examination): "A Dual-Optical Personnel Search and Rescue Positioning Visual System on Drones." Application No. CN 119429233 A.
- Utility Model Patent (Granted): "Automatic Battery Change Arm for Drones." Patent No. ZL 2023 2 3426097.6.

Research Experience

Open-Source Internship: NLP and Vision-Language Model Fine-tuning on MindSpore

February 2025 – June 2025

Huawei MindSpore Open-Source Community

- Contributed to the MindNLP open-source project by implementing and fine-tuning models including Autoformer, BEiT, and ALBERT.
- Focused on model integration, training stability, and cross-task evaluation within NLP and vision-language tasks.
- Technical Stack: MindSpore, Python, Transformers, Git, Open-Source Collaboration.

Robotics plus Applications: Automatic Inspection and Rescue Based on Drone Nest

January 2024 - July 2024

Beijing Elite Intelligence Company & North China Institute of Science and Technology

- Built services including water count detection, conveyor belt deviation detection, and truck tracking using DeepSort+YOLOv8 in open-pit mines.
- Technical Stack: PyTorch, ONNX, Linux, YOLO.

Baiyangdian Ecological Internet of Things Three-dimensional Monitoring System

June 2023 - January 2024

Hebei Province Key Scientific Research and Development Project (Project Number: 19270318D)

- Developed object detection for mining trucks using Yolov7tiny (Darknet), improving recognition accuracy by 2% with minimal FPS loss.
- Enhanced dual-modal (infrared-visible light) object detection with YOLOv8 for drone-based low-altitude monitoring, achieving 65% mAP at 30 FPS on a laptop.

Selected Open-Source Projects

Autoformer Finetune Using tourism monthly dataset

- https://github.com/4everImmortality/Autoformer_tourism_monthly_finetune

Use t-SNE to analyze feature distributions across different classes and objects in Ultralytics

- <https://github.com/4everImmortality/Ultralytics-tSNE-Detection-Visualizer>

Video-based-Intelligent-Alert-System through Gemini and Ultralytics

- <https://github.com/4everImmortality/Video-based-Intelligent-Alert-System>

Technical Skills

- Programming: Python, C++, Java, Shell, Matlab, Latex
- Frameworks: PyTorch, ONNX, OpenCV, Darknet
- Tools: Linux, MySQL, Git, Docker
- CV Models: YOLO series, SSD, RCNN, Detr
- Multimodal Experience: Infrared-visible fusion, UAV video stream analysis
- LLM and NLP finetuning experience.

Honors & Awards

- 2024: Hosted a national-level undergraduate innovation training research project.
- 2023: Grand Award, National 3D Digitization Innovation Competition.
- 2023: First Prize, National College Students' Data Analysis Competition.
- 2023: Bronze Award, China International College Students' Innovation Competition.
- 2022: First-Class Scholarship