Weizheng Wang

Deep Learning · Machine Learning

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https://www.linkedin.com/in/weizheng-wang-720232372/ | Nationality: Chinese

"Utilizing Machine Learning and Deep Learning methods in drones, robots, and other edge devices."

Summary

I am currently pursuing a **Master of Artificial Intelligence and Machine Learning** at the University of Adelaide (since Sep. 2025), supported by the **Global Citizens 30% International Scholarship**. I obtained my **B.Eng. in Computer Science and Technology** from North China Institute of Science and Technology (09/2021–07/2025, **GPA: 90.84/100**). My research interests lie in **deep learning**, **computer vision**, and **multimodal learning and NLP**, with a focus on accurate and efficient perception on **UAVs and edge devices**. I have co-authored several peer-reviewed papers and hold one granted utility model patent and one invention patent under substantive examination, and I am actively seeking research and future PhD opportunities in vision and multimodal learning for autonomous drones and robots.

Education

The University of Adelaide — *Adelaide, Australia*

Master of Artificial Intelligence and Machine Learning — *Sep. 2025 – Present*

- Admitted to the Master of Artificial Intelligence and Machine Learning program with research interests in computer vision, multimodal learning and NLP for UAV and edge intelligence.
- Recipient of the 2025 University of Adelaide Global Citizens 30% International Scholarship.

North China Institute of Science and Technology — *Langfang, China*

Bachelor's Degree in Computer Science and Technology — *Sep. 2021 - Jul. 2025*

- GPA: 90.84/100.
- Coursework and research focused on deep learning, computer vision, and UAV-based edge deployment.

Publications

Published

A lightweight insulator defect detection algorithm based on drone images for power line inspection — *Engineering Research Express*

Co-first Author — *2025*

- Proposed and evaluated a lightweight UAV-based insulator defect detection algorithm for power line inspection using drone images.
- Engineering Research Express, 7, 015205. DOI: 10.1088/2631-8695/ae19ce.

Real-time monitoring of trucks used in open pit based on aerial video of UAV — *RAIIC 2024*

First Author — *2024*

- Developed a real-time UAV-based monitoring system for open-pit mine trucks using aerial video and deep learning-based object detection.
- Proceedings RAIIC 2024, pp. 130–138. DOI: 10.1109/RAIIC61787.2024.10671199.

Research on industrial meter readings based on improved YOLOv8 — *EIBDCT 2024 (Proc. SPIE 13181)*

Co-author — *2024*

- Proposed an improved YOLOv8-based approach for automatic industrial meter reading, targeting robust performance in complex industrial scenes.
- Proc. SPIE 13181, Third Int. Conf. on Electronic Information Engineering, Big Data, and Computer Technology, 131815G. DOI: 10.1117/12.3031129.

Under Review

A Lightweight Thermal Denoising and Occlusion-Robust Infrared Detection Model for Substation Equipment — *Submitted to ICASSP 2026 (under review)*

Co-first Author — *2025*

- J. Wu, W. Wang, and L. Tian. Status: under review.
- Proposes a lightweight thermal denoising and occlusion-robust infrared detection model for substation equipment in infrared imagery, targeting deployment on UAV/edge devices. Status: under review.

Research Experience

Huawei MindSpore Open-Source Community
Remote

Research Intern – NLP & Vision-Language Model Fine-tuning
Feb. 2025 - Jun. 2025

- Contributed to the MindNLP open-source project by implementing and fine-tuning models such as Autoformer, BEiT and ALBERT within the MindSpore framework.
- Focused on model integration, training stability and cross-task evaluation across NLP and vision-language tasks, improving reproducibility and robustness of training pipelines.
- Collaborated with open-source mentors and contributors through code reviews, issues and documentation.
- **Tech:** MindSpore, Python, Transformers, Git, open-source workflows.

Beijing Elite Intelligence Company & NCIST
Beijing & Langfang, China

Research Intern – Automatic Inspection and Rescue Based on Drone Nest
Jan. 2024 - Jul. 2024

- Built drone-based automatic inspection services in open-pit mines, including water count detection, conveyor belt deviation detection and truck tracking using DeepSORT + YOLOv8.
- Optimized PyTorch detection models and exported them via ONNX for real-time inference on edge devices in long-duration UAV missions.
- **Tech:** PyTorch, ONNX, Linux, YOLO, UAV visual inspection.

Hebei Province Key Sci. & Tech. R&D Project (No. 19270318D)
Hebei, China

Undergraduate Researcher – Baiyangdian Ecological IoT 3D Monitoring
Jun. 2023 - Jan. 2024

- Developed object detection for mining trucks using YOLOv7-tiny (Darknet), improving recognition accuracy by 2% with minimal FPS loss.
- Enhanced dual-modal (infrared + visible) UAV object detection with YOLOv8 for low-altitude drone monitoring, achieving 65% mAP at 30 FPS on a laptop and targeting deployment on edge devices.
- **Tech:** YOLOv7-tiny, YOLOv8, Darknet, UAV, dual-modal perception.

Honors & Awards

International

2025 **Recipient**, University of Adelaide Global Citizens 30% International Scholarship — *Adelaide, Australia*

Domestic

2024 **Principal Investigator**, National Undergraduate Innovation Training Program (China) — *China*
2023 **Grand Award**, National 3D Digitization Innovation Competition — *China*
2023 **Second Prize**, Challenge Cup Science and Technology Invention and Creation Track — *China*
2023 **First Prize**, National College Students' Data Analysis Competition — *China*
2023 **Bronze Award**, China International College Students' Innovation Competition — *China*
2022 **First-Class Scholarship**, North China Institute of Science and Technology — *China*
2022 **First Prize**, National College Students' Technological Innovation and Entrepreneurship Competition — *China*

Patents

A Dual-Optical Personnel Search and Rescue Positioning Visual System on Drones
China National Intellectual Property Administration

Co-inventor
Nov. 2024 - Present

- Invention patent under substantive examination. Application No. CN 119429233 A.

Automatic Battery Change Arm for Drones
China National Intellectual Property Administration

Co-inventor
Dec. 2023

- Utility model patent granted. Patent No. ZL 2023 2 3426097.6.