

Weizheng Wang

DEEP LEARNING · MACHINE LEARNING

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“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 Thermal Denoising and Occlusion-Robust Infrared Detection Model for Substation Equipment

Submitted to ICIP 2026

CO-FIRST AUTHOR

2025

- J. Wu, W. Wang, and L. Tian
- 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.

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.

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.