Yuan Ning

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Education

2022 – 2026 **Henan University of Technology** Zhengzhou, Henan, China
Bachelor of Science in Computer Science GPA: 3.2/4.0

Research Interests

Multimodal Learning, Large Language Model, Computer Vision, Natural Language Processing

Publications

[1] Y. Ning, P. Lv, Q. Zhang, *et al.*, "From vision-only to vision + language: A multimodal framework for few-shot unsound wheat grain classification," *AI*, 2025. DOI: 10.3390/ai6090207.

[2] Q. Zheng, X. Qiao, Y. Ning, *et al.*, "Applying bayesian network models to identify and optimize ecological security zoning—from the perspective of ecosystem service tradeoffs," *Human and Ecological Risk Assessment: An International Journal*, 2025. DOI: 10.1080/10807039.2025.2560940.

[3] P. Lv, Y. Ning, Q. Zhang, *et al.*, "Eca-modnet: Lightweight modulation network for wheat grain quality inspection," *Food Quality and Safety*, 2025 (submitted).

Research Experience

A Vision-Language Few-Shot Learning Framework for Agricultural Recognition Jan 2025 – Sep 2025
Project Leader* | Henan University of Technology | Advisor: Prof. Pengtao Lv

- Proposed a new few-shot learning method for pre-trained Vision-Language Model (CLIP) adaptation
- Designed a Vision-Language framework supporting training-free and training-required regimes for few-shot unsound wheat grain recognition
- Paper published at *AI* (2025) as First Author

LLM-Driven Programming Assistant Based on Retrieval-Augmented Generation (Summer Research) Jul 2025 – Aug 2025
Project Leader* | Southern Methodist University | Advisor: Prof. Xihao Xie

- Designed a semantic code search pipeline that integrates Gemini-cloud and GraphCodeBERT embeddings with Chroma vector database and Qwen3-14B LLM
- Developed a LLM-powered coding assistant based on RAG, enabling semantic code search and programming guidance
- Released the project as open-source on GitHub

A Lightweight Modulation-CNN for Unsound Grain Detection Sep 2024 – Apr 2025
Project Leader* | Henan University of Technology | Advisor: Prof. Pengtao Lv

- Proposed a dual-branch CNN incorporating efficient channel attention (ECA) to strengthen cross-channel interactions while maintaining a lightweight structure
- Reduced model parameters by 3.7 million and boosted average classification accuracy by 3.17% compared with the baseline model, demonstrating better efficiency–accuracy trade-off
- Manuscript submitted to *Food Quality and Safety* as Second Author

Bayesian Network for Identifying and Optimizing Ecological Security Zoning May 2024 – Sep 2024

Research Assistant | Henan Polytechnic University | Advisor: Prof. Xuning Qiao

– Co-designed bayesian network models for causal reasoning with uncertainty-aware, interpretable predictions
– Built a multi-source geospatial data-fusion and multi-scenario zoning workflow to delineate ecological risk zones
– Paper published at *Human and Ecological Risk Assessment* (2025) as Third Author

Comparison of Measurements in Street View and Visual Perception Dec 2023 – May 2024

Research Assistant | Zhengzhou University | Professor Yi Zhang

– Benchmarked U-Net segmentation performance across equirectangular, cubic and fisheye projections using a standardized dataset to assess projection distortions
– Developed an error-analysis toolkit to compute angle and ratio relative errors and visualize projection-induced trends with Matplotlib
– Quantified projection bias using solid-angle–aware metrics and recommend adjustments for future computer vision studies

Skills & Interests

Programming Skills	Python, PyTorch, C++
Interests	Basketball, Swimming, Tennis