# Xirui Wang

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## Education

2024 - 2028 **Huazhong University of Science and Technology (HUST, China),**
*Bachelor of Engineering, Robotics*
Relevant courses: Data Science, Machine Learning, Probability and Statistics etc.

## Research Experience

2025 - **Independent Research, School of Mechanical Science and Engineering, HUST**
- Conducted industrial unsupervised anomaly detection on real manufacturing pipelines with highly localized, subtle defects. Designed a W-shaped encoder–decoder with prototype-guided fusion, and applied contrastive supervision plus anomaly injection to stabilize latent representations and reduce false negatives.
- Gained full-cycle research experience (hypothesis formulation, controlled experiments, iterative optimization, model validation) and authored a comprehensive review on unsupervised industrial anomaly detection methods.

2025 - **Research Intern, School of Computer Science and Technology, HUST**
- Diffusion-based image inpainting and human-preference modeling; collaborated with PhD researcher on module design and evaluation.
- Built large-scale data pipeline ( 24,000 images) and trained LoRA modules for task-specific inpainting and background fidelity.

## Selected Publications

1. **Xirui Wang**, et al. "Unsupervised Anomaly Detection in Industry: Progress, Trends, and Future Avenues." *Manuscript in preparation, expected Dec 2025*.

## Personal Projects

2025 - **LazyDDL: AI-powered Deadline Assistant**
- Built a prototype app with OCR/ASR deadline extraction, auto-generated tasks and reminders, lightweight analytics, and a companion-pet interaction module, tailored for users overwhelmed by dense workloads and hard-to-track deadlines.

2025 - **Qiming Mirror – Multisensory AI Assistant for the Visually Impaired**
- Built a demo converting visual inputs into multisensory descriptions using OCR, object recognition, and a lightweight RAG module, enabling safer daily decisions for blind users.

## Technical Skills

**Programming Languages**: Python, C++, Swift, Bash
**Machine Learning**: PyTorch, TensorFlow, Hugging Face, scikit-learn
**Research Areas**: Computer Vision, Reinforcement Learning
**Tools**: Git, Docker, Linux, LaTeX
**AI-Augmented Learning**: Fast learner across new domains with AI-assisted tooling.