

Zhiling Chen

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🎓 EDUCATION

- **University of Connecticut** Aug. 2023 - present
Ph.D. student at Mechanical Engineering, advised by Prof. Farhad Imani Storrs, CT
- **Boston University** Sep. 2021 - Aug. 2022
Master of Science in Applied Data Analytics Boston, MA
- **Waterford Institute of Technology** Sep. 2020 - June. 2021
Bachelor of Science (Honours) in Software Engineering Practice Waterford, Ireland
- **Nanjing University of Information Science & Technology** Sep. 2017 - June. 2021
Bachelor of Engineering in Software Engineering Nanjing, China

🔍 RESEARCH INTERESTS

My research focuses on the intersection of machine learning and smart manufacturing, with particular emphasis on Vision-Language Models and robotics, especially in the areas of cooperative robotics and embodied robotic systems.

📄 PUBLICATIONS [GOOGLE SCHOLAR](#)

- [1] Zhiling Chen*, Danny Hoang, Ruimin Chen, Farhad Imani. **Distributed Hyperdimensional Computing for Real-Time Data Aggregation and Interpretable Quality Monitoring in Manufacturing.** *IMECE* 2024.
- [2] Zhiling Chen*, Danny Hoang, Fardin Jalil Piran, Ruimin Chen, Farhad Imani. **Federated Hyperdimensional Computing for Hierarchical and Distributed Quality Monitoring in Smart Manufacturing.** *Internet of Things*.
- [3] Zhiling Chen*, Hanning Chen, Moshen Imani, Ruimin Chen, Farhad Imani. **Vision Language Model for Interpretable and Fine-grained Detection of Safety Compliance in Diverse Workplaces.** *Expert Systems with Applications*.
- [4] Fardin Jalil Piran*, Zhiling Chen, Moshen Imani, Farhad Imani. **Privacy-preserving Federated Learning with Differentially Private Hyperdimensional Computing.** *Computers and Electrical Engineering*.
- [5] Zhiling Chen*, Hanning Chen, Moshen Imani, Farhad Imani. **Can Multimodal Language Model be Guided to Improve Industrial Anomaly Detection?** *Arxiv [Under Review]*.
- [6] Kiarash Naghavi Khanghah*, Zhiling Chen, Lela Romeo, Qian Yang, Rajiv Malhotra, Farhad Imani, Hongyi Xu. **Multimodal RAG-driven Anomaly Detection and Classification in Laser Powder Bed Fusion using Large Language Models.** *2025 DFMLC Best Paper Award*.
- [7] Zhiling Chen*, Yang Zhang, Fardin Jalil Piran, Qianyu Zhou, Jiong Tang, Farhad Imani. **ScanBot: Towards Intelligent Surface Scanning in Embodied Robotic Systems.** *Arxiv [Under Review]*.
- [8] Zhiling Chen*, Farhad Imani. **A Multi-Expert Framework for Enhancing Multimodal Large Language Models in Industrial Anomaly Detection.** *[Under Review]*.
- [9] Kiarash Naghavi Khanghah*, Zhiling Chen, Lela Romeo, Qian Yang, Rajiv Malhotra, Farhad Imani, Hongyi Xu. **Zero-Shot Anomaly Detection in Laser Powder Bed Fusion Using Multimodal RAG and Large Language Models.** *[Under Review]*.

👤 EXPERIENCE

- **UConn ISCL Lab** [\[🌐\]](#) Aug. 2023 - Present
Research Assistant Storrs, CT
 - Application of Vision-Language Models for Industrial Anomaly Detection
 - Collected and implemented VLA datasets using UR3 robot and laser profiler for robotic learning tasks.

⚙️ SKILLS

- **Programming & Frameworks:** Python, Java, Javascript, R, HTML, Git, ROS2, PyTorch, TensorFlow
- **Robotics:** UR3 robot control, MoveIt, Isaac Sim
- **Databases & Tools:** MySQL, Oracle, Docker

🔔 ADDITIONAL INFORMATION

Languages: English (Proficiency level), Mandarin (Native Speaker)
Interests: Snowboarding, boxing, climbing