Zhiling Chen

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in Zhiling Chen | ⓞ Ed1sonChen | 🐦 Zhiling Chen

🎓 EDUCATION

• **University of Connecticut** *Aug. 2023 - present*
Ph.D. student at ME, advised by Prof. Farhad Imani and Prof. Ruimin Chen 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]*.

👤 EXPERIENCE

• **UCONN ISCL Lab [🌐]** *Aug. 2023 - Present*
Research Assistant Storrs, CT
  ◦ Applications of Hyperdimensional Computing in Manufacturing
  ◦ Applications of VLM and MLLM in Manufacturing

🏛 TEACHING

• **TA at UCONN Manufacturing Automation (ME3221)** Aug. 2024 – Dec. 2024
• **TA at UCONN Special Topics in MEM (ME3295)** Jan. 2024 – May. 2024
• **TA at UCONN Manufacturing Automation (ME3221)** Aug. 2023 – Dec. 2023

⚙ SKILLS

• **Programming Languages:** Python, Java, HTML, Javascript, R
• **Web Technologies:** React
• **Database Systems:** Mysql, Oracl
• **Deep Learning Packages:** Pytorch, TensorFlow

🔔 ADDITIONAL INFORMATION

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