Zhiling Chen

zhiling.chen@uconn.edu | https://ed1sonchen.github.io/

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 interest is in the intersection of machine learning and smart manufacturing. Currently, my research mainly lies in Vision-Language Models for anomaly detection, safety and privacy in Smart Manufacturing.

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]*.

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