

# Yimeng Liu

+(1) 3012635191 | yimengliu0815@gmail.com | [Home Page](#)  
Address: 1628 S Shore Dr., Apt C1, East Lansing, MI 48824

## OBJECTIVE

I am pursuing Ph.D. degree in **Computer Science and Engineering** at Michigan State University. I earned my Bachelor of Science degree in **Mathematics** from Virginia Tech. My research focuses on **Artificial Intelligence of Things (AIoT)** and wireless sensing. I particularly focus on **mmWave imaging integrated with machine learning** and **sensing application in agriculture and healthcare**. I am actively seeking an internship position as a **Research Scientist**.

## EDUCATION

<b>Michigan State University, USA</b> <i>Ph.D. in Computer Science &amp; Engineering</i>	<i>Aug. 2023 - Present</i> Anticipated Graduation: <i>May. 2027</i>
<b>Virginia Tech, USA</b> <i>B.S. in Mathematics</i> GPA: 3.72 <b>Dean's List:</b> <i>Fall 2019, Spring 2020, Fall 2020, Spring 2021, Fall 2021, Spring 2022</i>	<i>Sep. 2019 - May. 2023</i>

## PUBLICATION

- [6] Y. Liu, M. Gan, H. Zeng, L. Li, Y. Dong, and Z. Cao, "Hydra: Accurate multi-modal leaf wetness sensing with mm-wave and camera fusion," In Proceedings of ACM *MobiCom*, 2024.
- [5] Y. Liu, M. Gan, G. Li, Y. Dong, and Z. Cao, "Adonis: Neural-enhanced Fine-grained Leaf Wetness Sensing with Efficient mmWave Imaging," In Proceedings of IEEE *INFOCOM*, 2025.
- [4] Y. Liu, M. Gan, H. Zeng, Y. Ren, G. Li, J. Lin, Y. Dong, X. Tan and Z. Cao, "Proteus: Enhanced mmWave Leaf Wetness Detection with Cross-Modality Knowledge Transfer," In Proceedings of ACM *SenSys*, 2025.
- [3] Y. Ren, G. Li, Y. Liu, Y. Dong, and Z. Cao, "AeroEcho: Towards Agricultural Low-power Wide-area Backscatter with Aerial Excitation Source," In Proceedings of IEEE *INFOCOM*, 2025.
- [2] M. Gan, Y. Liu, L. Liu, C. Wu, Y. Dong, H. Zeng, and Z. Cao, "Poster: mmleaf: Versatile leaf wetness detection via mmwave sensing," In Proceedings of ACM *MobiSys*, 2023.
- [1] R. Wang, Y. Liu, and R. Müller, "Detection of passageways in natural foliage using biomimetic sonar," *Bioinspiration & Biomimetics* 17.5 (2022): 056009.

## RESEARCH EXPERIENCE

<b>Edge Intelligence and Networking Lab, Michigan State University</b> <i>Research Assistant (Advisor: <a href="#">Dr. Zhichao Cao</a>)</i>	<i>May. 2022 - present</i>
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### mmWave Radar for Agriculture

- Build a testbed and the algorithm for mmWave SAR high resolution RF imaging.
- Design a novel fusion technique for mmWave SAR and RGB imaging and develop a 3D object detection method with Transformer architecture to improve accuracy compare with traditional method for about 12%.
- Optimize the understanding of RF imaging-based computer vision denoising and phase angle enhancement for texture detection and develop a neural network to distill the knowledge from RGB camera to improve accuracy for about 10% compared with state-of-the-art.

- Define a novel agriculture metric: Leaf Wetness Level. Based on the signal processing to provide accurate detection and design a Contrastive Learning model based on signal features to enhance detection precision and improve regression accuracy with 70% compared with traditional sensor.

### **Bioinspired Science and Technology Center, Virginia Tech**

*Nov. 2020 – May. 2022*

*Research Assistant (Advisor: [Dr. Rolf Müller](#))*

- Develop a bat-inspired robotic system with acoustic signal processing for precise detection of foliage passageways.
- Design a Transfer Learning algorithm to improve model performance, achieve more than 95% accuracy and enhance explainability for interpretability.
- Build a 3D reconstruction system for bat movements with camera footage.

### **Hauf Lab, Virginia Tech**

*Aug. 2020 – Dec. 2020*

*Research Assistant (Advisor: [Dr. Silke Hauf](#))*

- Design algorithms for nucleus extraction, segmentation and 3D reconstruction from microscope images.
- Assess RNA based on 3D visualization for nucleus status and damage evaluation.

## **TEACHING EXPERIENCE**

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### **Michigan State University, USA**

*Aug. 2023 - Present*

*Teaching Assistant*

- CSE 232: Introduction to Programming II (C++) (Fall 2023)
- CSE 220: Programming in C (Fall 2024)
- CSE 410: Operating Systems (Spring 2024)

### **Virginia Tech, USA**

*Jan. 2023 - May. 2023*

*Teaching Assistant*

- CS 3744: Introduction to GUI Programming and Graphics

## **SKILLS**

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### **Programming Skills:**

**Programming Languages:** Python (PyTorch, TensorFlow), C/C++, Java, MATLAB, JavaScript, HTML, CSS.

**Platform and Tools:** Git, Arduino, mmWave Studio.