Yamini Shankar

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Ph.D. Scholar specializing in wireless sensing, adversarial defenses, and resource-efficient network systems

Dept. of CSE, IIT Madras

Making devices smart, literally!

Github   LinkedIn   Scholar

RESEARCH STATEMENT

My research leverages Wi-Fi channel state information (CSI) for physical context sensing, such as human activity and object detection, with a focus on privacy implications and resilience against adversarial sensing. I have developed an SDR-based testbed with a customizable 802.11 stack for real-time sensing experiments. Currently, I explore optimizing network resource utilization in edge-assisted wireless sensing

EDUCATION

Indian Institute of Technology, Madras - *Ph.D (CSE) 2022 – Ongoing*

Jawaharlal Nehru University, New Delhi - *M.Tech (CS & IT) 2020 – 2022*

Central University of Haryana, Haryana - *MCA 2017 – 2020*

St. Anthony's College, NEHU, Shillong, Meghalaya - *B.Sc. (CS) 2014 – 2017*

Class 12th, KV NEHU, Shillong, Meghalaya - *2014*

Class 10th, KV NEHU, Shillong, Meghalaya - *2012*

PUBLICATIONS

Practical Defense Against Adversarial WiFi Sensing(IEEE ANTS 2024, Guwahati, Assam)

Developed a black-box defense reducing classification accuracy while maintaining high throughput and SNR reliability.

Improving Network Resource Utilization for Distributed Wireless Sensing Applications (ACM AIoT@MobiHoc2024, Athens, Greece)

Proposed CSI compression and subsampling methods, evaluated on indoor and outdoor testbeds, achieving significant resource savings.

EXPERIENCE

Research: SeNSE Lab, IIT MADRAS

Built a SDR based testbed for wireless sensing, 2 conference publications

Teaching Assistant: Developed and graded assignments for 100+ students

TA for **CS3205**, **CS2030**, and **CS6040**: Guided 100+ students, developed course materials, and graded assignments.

Recognized as "**Best TA**" for contributions in CS2030 (2023) and CS3205 (2024).

SKILLS

Programming: Python, C, C++, PyTorch, NS-3.

Tools: SDR platforms, MATLAB, Wireshark.

Research: Wireless sensing, adversarial defenses, CSI processing.