Ahmad Kamari
Tel: (571) 660-0296
Email: akamari@gmu.edu

SUMMARY

I am a Ph.D. candidate in Computer Science specializing in Wireless Networking, Sensing, Machine Learning, and Immersive Technologies, advised by Prof. Parth Pathak. My research focuses on developing mmWave networking, RF sensing systems, and multi-user beamforming solutions through the integration of machine learning across diverse modalities. My recent concentration has been on mmWave sensing for AR/VR and UGV devices, enabling applications like environment mapping and 6DoF pose estimation through the integration of neural radiance fields (NeRF), 3DGS and SLAM algorithms.

RESEARCH INTERESTS

Wireless networks and mobile computing with the focus on next-generation wireless networks, **RF and mmWave sensing**, mobile and wearable sensing

EDUCATION

Ph. D. in Computer Science (Aug '19 - Present)
George Mason University, Fairfax, USA
Advisor: Dr. Parth H. Pathak
Relevant Coursework: Computer Networking, Software-Defined Radio, Mobile Immersive Computing, Deep Learning, Data Mining

M.S. Computer Science (2023)
George Mason University, Fairfax, USA
Advisor: Dr. Parth H. Pathak

M.S. Information Technology (2014)
University of Qom, Qom, Iran
Advisor: Dr. Yaghoub Farjami

B.S. Information Technology (2012)
University of Ilam, Ilam, Iran.

PROFESSIONAL EXPERIENCE

Research Assistant (May '21 – Present)
Computer Science Department, George Mason University, Fairfax, VA
- Designed and implemented solutions for mmWave vehicular networks using urban street view imagery.
- Developed a multi-user mmWave beamforming solution tailored for immersive environments.

Teaching Assistant (Aug '19 – May '21)
Computer Science Department, George Mason University, Fairfax, VA

Research Assistant (Fall '14 – Fall '16)
Engineering Department, Ilam University, Ilam, Iran

Mobile and Web Application Developer (May '08 – May '18)

PUBLICATIONS

1. **Ahmad Kamari**, Yoon Chae, and Parth Pathak. mmSV: mmWave Vehicular Networking using Street View Imagery in Urban Environments. *Proceedings of the 29th Annual International Conference on Mobile Computing and Networking, Madrid, Spain. (Acceptance Rate: 24.4%)*

2. **Ahmad Kamari**, Nan Wu, Hemant Kumar Narsani, Bo Han, Parth Pathak. Environment-driven mmWave Beamforming for Multi-user Immersive Applications. *In Proceedings of the 1st ACM Workshop on Mobile Immersive Computing, Networking, and Systems (pp. 268-275).*

3. **Ahmad, Kamari**, and Mozafar Bag-Mohammadi. "An Optimized Link Correlation Model for Opportunistic Routing." IEEE Communications Letters (2018).

4. Vemuri, Vrishak, Evin Mathen, Isabel Joseph, Rezoan Ahmed Nazib, **Ahmad Kamari**, and Parth Pathak. "Deploying mmWave distance sensing to Jackal UGV for

more accurate navigation in hazardous environments." Journal of Student-Scientists' Research 6 (2024).

Honors and Awards

Distinguished Academic Achievement Award for year 2024, Computer Science Department, George Mason University.

Outstanding Graduate Teaching Assistant for year 2021, Computer Science Department, George Mason University.

Ranked as one of the top three students in M.S. period

Technical Projects

Current Research

- **Neural Representations of Environments with mmWave Radars**
Investigating the use of mmWave radar data to model environments for applications in localization, environmental mapping, and ray tracing. This research explores advanced signal processing and neural modeling techniques.

- **Environment-Driven Beamforming and Signal Optimization**
Developing innovative methods for beamforming and signal optimization in wireless communication systems, leveraging environmental data for enhanced accuracy and efficiency.

Selected Academic Projects

- **Evaluation of Augmented Reality Cloud Platform**
Evaluation of an Open-Source Augmented Reality Cloud Platforms for Digital Twin Mapping and Localization using Structure from Motion (SfM) Algorithm.

- **Hybrid Integration of Enterprise Systems**
Focusing on integrating open-source tools like DMS, BPMS, and BI systems into a unified enterprise framework.

- **Secure E-Commerce Application Design**
Built a secure e-commerce infrastructure based on OWASP ASVS standards.

Teaching Experience

Teaching Assistant at George Mason University

- CS455 Computer Communications and Networking (Spring '20, Spring '21)
- CS222 Computer Programming for Engineers (Fall '19, Fall '20)

Lecturer - Ilam University

- Computer Programming (Fall '14)

Technical Skills

Programming: C, C++, C#, Python, Java, Perl, MATLAB.

Frameworks: PyTorch, Tensorflow, Hadoop.

Internet Technologies: HTML, MySQL, PHP, JavaScript (and some of their related frameworks)

Services

Conference reviewer:
IEEE Wireless Communications and Networking Conference (WCNC). (2023)
IEEE Military Communications Conference (MILCOM). (2024)

Journal reviewer:
IEEE Transactions on Mobile Computing (IF:7.9). (2023,2024)
Information and Software Technology (IF:3.9) (2024)