Hossein Mohammadi

Google Scholar | Linkedin | Website | ResearchGate
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EDUCATION

MISSISSIPPI STATE UNIVERSITY
PhD in Electrical Engineering
Minor in Computer Science
On-going | Starkville, MS

UNIVERSITY OF TEHRAN
M.Sc in Electrical
Engineering-Communication
Systems
Sep 2019 | Tehran, Iran

THESIS

M.SC.
"Self-Interference Management in
In-Band Full-Duplex Systems"

SOFTWARE/TOOLS

- Matlab • Python • srsRAN • GNU Radio
- Illustrator • Lightroom
- Photoshop • LaTeX

CURRENT PROJECTS

- NSF-SWIFT-SAT
- NSF-Convergence Accelerator

COURSEWORK

- Information Theory
- Adaptive Filter Theory
- Advanced Communication Theory
- Coding Theory
- Estimation Theory
- Digital Signal Processing
- Random Signals and Systems
- Random Var. and Stoc. Processes
- Digital and Wireless Communications
- Optimization for Machine Learning
- Machine Learning
- Internet of Things (IoT)
- Digital Image Processing
- Data Communication Networks
- Theory of Computation
- Cloud Computing and Security
- Wireless Networks

HOBBIES/INTERESTS

- Photography
- Traveling/Camping
- Soccer

RESEARCH INTERESTS

- Wireless communications and systems
- Computation aspects of MIMO, Multiuser MIMO and massive MIMO for 5G
- Millimeter wave (mm-Wave) communications
- Machine Learning
- Internet of Things (IoT)
- Artificial Intelligence and its application in Digital Communication Systems

RESEARCH EXPERIENCE

MISSISSIPPI STATE UNIVERSITY | PhD
AI-Assisted Network Slicing in O-RAN Architecture Using Federated Learning

- Challenges of AI for radio transceivers
- Analyzing and Overcoming Receiver Nonlinearities
- Self-Interference management with multi-layer perceptron (MLP)
- Analyzing AI demodulators in shared spectrum with high power blockers
- Analyzing Aerial radio unit trajectory by reinforcement learning (RL) schemes
- Investigating artificial intelligence algorithms for network and resource management in 6G with the aim of improving QoS.
- NSF Convergence Accelerator, Combining Vulnerability and Unawareness in 5G Network Security through multipath comm. and test with srsRAN
- NSF-SWIFT-SAT; Developing DRL-Based Mitigation Strategies for RFI in Passive Radiometry.

UNIVERSITY OF TEHRAN | MS
Self-Interference Management in IBFD Systems

- Simulated different modulations and compare the differences and performances
- Down/upsampling, windowing and PSD on signals and analyzing effects
- Adaptive beamforming simulations performed
- Compared different types of adaptive algorithms and their performance
- Simulate STBC and MIMO Systems
- Neural Network applications in Wireless Communication

TEACHING EXPERIENCE

GRADUATE TEACH. ASSISTANT | University of Tehran
Random Variables and Stochastic Processes

- Taught weekly and prepare some problems for students

SELECTED PUBLICATIONS

[1] J. Dsouza, H. Mohammadi, A. V. Padaki, V. Marojevic, and J. H. Reed. Symbol error rate with receiver nonlinearity. In *2020 IEEE 91st Vehicular Technology Conference (VTC2020-Spring)*, pages 1–5. IEEE, 2020.

[2] H. M. et al. Artificial neuronal networks for empowering radio transceivers: Opportunities and challenges. *IEEE VTC*, 2021.

[3] H. M. et al. Ai-driven demodulators for nonlinear receivers in shared spectrum with high-power blockers. *IEEE WCNC*, 2022.

[4] H. M. et al. Analysis of reinforcement learning schemes for trajectory optimization of an aerial radio unit. *IEEE ICC*, 2023.