Jeremiah Rhys Wimer

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EDUCATION

University of Arkansas — **Fayetteville, AR**
Ph.D. Electrical Engineering — *August 2025 - August 2029*
M.Sc. Electrical Engineering, Specialization in Statistical Signal Processing — *June 2023 - July 2025*
B.Sc. Electrical Engineering, Graduated Magna Cum Laude — *August 2019 - May 2023*

PROJECTS

- **Efficient Dehydration Detection Algorithm**: Modified a pre-existing algorithm for modeling blood pressure waveforms, found a more efficient method for classifying dehydration status using data unseen in training.
- **OTFS Simulation Using Realistic Pulse Shapes**: Modeled and simulated an OTFS system using rectangular, sinc and RRC pulse shapes with finite-time support, with MySQL compatibility for distributed computing.
- **Study of Iterative Solvers for Massive MIMO Detection**: Conducted an analysis of current iterative solvers for massive multiple-input multiple-output (MIMO) communication systems.
- **Portable VHF/UHF Cross-band Repeater**: Designed and coded a low-power repeater for outdoor emergency usage. Honors thesis focused on constructing a dual-band antenna to serve main device.
- **UHF Microstrip Patch Antenna**: Designed, milled and tested a microstrip patch antenna tuned to 2.6GHz.

WORK EXPERIENCE

Research Assistant — **Fayetteville, AR**
University of Arkansas — *June 2023 - Present*
- Conducting research in wireless communications using concepts such as OFDM, OTFS and ODDM.
- Deriving statistical properties of systems and simulating results using MATLAB.

Teaching Assistant — **Fayetteville, AR**
University of Arkansas — *August 2023 - May 2025*
- Led the lab portions of Electronics I and II, focusing primarily on operational amplifiers and MOSFETs.
- Requires effective communication, consistent troubleshooting and swift problem solving.

TECHNICAL SKILLS

Programming and Markup Languages: MATLAB, R, C++, Python, LaTeX
Software Experience: OrCAD Capture CIS, Cadence Allegro, Autodesk Revit, Ansys HFSS, IBM CPLEX, MySQL
Technical and Soft Skills: Strong analytical and problem-solving ability, time management, technical communication, independent work and teamwork capabilities

NOTABLE ACADEMIC ACHIEVEMENTS

- Attended and presented at the 21st annual meeting of the MidSouth Computational Biology and Bioinformatics Society (MCBIOS), communicating research advances in biomedical signal processing
- Recipient of the Department of Electrical Engineering Outstanding Senior Award 2023
- Studied Abroad at Universidad de Carlos III (Madrid, Spain) for Fall Semester 2022

EXTRACURRICULAR ACTIVITIES

Vice President — **Fayetteville, AR**
Amateur Radio Club at the University of Arkansas — *August 2024 - July 2025*
President — **Fayetteville, AR**
University of Arkansas IEEE Power Electronics Society Local Chapter — *January 2022 - August 2022*
Member — **Fayetteville, AR**
Institute of Electrical and Electronics Engineers (IEEE) — *January 2021 - Present*