Department of Electrical Engineering and Computer Science
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Waleed Raza

Education

August 2022–May 2026 **Ph.D., Electrical Engineering & Computer Science**, *Embry-Riddle Aeronautical University*, Daytona Beach, FL, United States.
GPA: 4.0

September 2018– March 2021 **Master of Engineering, Underwater Acoustics Engineering**, *Harbin Engineering University*, Harbin, China.
GPA: 3.46

January 2013– December 2016 : **Bachelor of Engineering, Electronic Engineering**, *Dawood University of Engineering & Technology*, Karachi, Pakistan.
GPA: 3.03

Research Experience

Embry-Riddle Aeronautical University, Daytona Beach, FL, United States

August 2022 – Present **Graduate Research Assistant**.
Lead researcher on FAA-funded project "*A55: Identify Flight Recorder Requirements for UAS Integration Into the National Airspace System*," exploring recorder requirements for small, medium, and large UAS as well as remotely piloted UAM aircraft.

Advisor : **Dr. Richard Stansbury**, *Associate Professor, Computer Engineering and Computer Science Department*, Daytona Beach, FL (*Personal Web-page*)

Harbin Engineering University, Harbin, China

Sep 2018 – March 2021 **Graduate Research Assistant**.
Researched underwater acoustic OFDM communication, focusing on: (i) PAPR reduction with nonlinear distortion removal using machine learning to design an energy-efficient communication system; and (ii) Doppler compensation and target detection using wavelet-based methods and the matrix pencil algorithm.

Advisor : **Dr. Xuefei Ma**, *Associate Professor, College of Information and Communication Engineering*, HEU (*Personal Web-page*)

Fellowships & Awards

2018 –2021 ***Chinese Government Scholarship*** — China Scholarship Council through the Ministry of Commerce of the People's Republic of China, as a Master's research scholar in Harbin Engineering University.

2019 Recipient of *HEU Travel Grant* to attend the **178th Acoustical Society of America** in San Diego, CA.

2021 Recipient of ***Alliance of International Science Organizations (ANSO) Scholarship for Young Talent*** to pursue a Ph.D. in Information and Communication Engineering at the University of Science and Technology of China (USTC).

2020 Awarded ***Meritorious Honor Award*** at HEU for **Research Achievements and Work**.

2024 Best of Session Paper at the ***43rd Digital Avionics Systems Conference*** (DASC) in San Diego, CA, for **"Identify Flight Recorder Requirements for UAS Integration Into the National Airspace System."**

Technical Reviewer (Invited) for Academic Journals & Conferences

2021–present **Springer Nature**: Wireless Personal Communications, Computers and Electrical Engineering, The Journal of Supercomputing, Springer Science, AEU – International Journal of Electronics and Communications, Scientific Reports.

2021–present **IEEE**: IEEE Sensors Journal; **ETASR**: Engineering, Technology, and Applied Science Research; **MDPI**: Journal of Marine Science and Engineering, Remote Sensing, Ocean, Applied Sciences.

2023 Invited to review technical papers for the **International Wireless Communication and Mobile Computing Conference (IWCMC)** held in Marrakesh, Morocco.

Skills

Advanced Air Mobility: Routing network design in the airspace for the AAM and its operations.

Programming Languages: Python, MATLAB.

Wireless Technologies: OFDM, Signal Processing for communication engineering, Computer simulations for wireless technologies, Machine Learning for communication engineering.

Underwater Acoustic Engineering: Signal propagation in BELLHOP channel configuration, Transducers, and Hydrophones.

Position of Responsibility & Professional Association Memberships

2021 **Editorial Board Member** at *Journal of Engineering Technology and Applied Science Research (ETASR), Greece*.

2019 **Participant and Organizing Member**, *First China Pakistan Marine Information Workshop, HEU, China*.

2022–Present **IEEE Graduate Student Member** at *IEEE Daytona Section*.

2017–Present **Registered Engineer** at *Pakistan Engineering Council*.

Industrial Experience

K-Electric, Karachi, Pakistan (MM Associates Pvt. Ltd.)

July 2016 – Sep 2018 **Assistant Engineer / Electrical Supervisor**.
Performed tasks such as three-phase testing, managing load distribution on PMTs, resolving voltage issues in low-tension systems (220 V), locating underground cable faults, testing power cables, normalizing feeder tripping, and managing the 11 kV network (fault localization, load management, and balancing).

Manager: **Mr. Adnan Shaikh**, *General Manager Technical at K-Electric, Karachi* (LinkedIn)

Pakistan Telecommunication Company Ltd. (E-Square Services)

Nov 2014 – March 2015 **Customer Services Executive**.
Provided technical support to customers regarding Internet service, assisting with troubleshooting of modems, wireless devices, EVO, and Smart TVs.

WAPDA Hydel Training Center, Mangla, Pakistan

July 2014 – August 2014 **Intern**.
Training included detailed visits to the Mangla Power Station and a 600 MW grid station; exposure to turbine and transformer repair workshops; and instruction on power transformers, autotransformers, earthing systems, hydraulic turbines, and generators.

Publications

Journal Articles

2025 **Waleed Raza** and Richard S. Stansbury. Noise prediction and mitigation for UAS and eVTOL aircraft: A survey. *Drones*, volume 9, 2025.

2025 **Waleed Raza**, Justus Renkhoff, Olayemi Ogirimah, Gurvir Kaur Bawa, and Richard S Stansbury. Advanced air mobility: Innovations, applications, challenges, and future potential. *Journal of Air Transportation*, pages 1–18. American Institute of Aeronautics and Astronautics, 2025.

2023 **Waleed, Raza**, Justus Renkhoff, Olayemi Ogirimah, Richard S. Stansbury, and Houbing Song. Flight data recorders: Past, present, and future. *IEEE Aerospace and Electronic Systems Magazine*, pages 1–21, 2023.

2023 **Waleed Raza**, Xuefei Ma, Houbing Song, Amir Ali, Habib Zubairi, and Kamal Acharya. Long short-term memory neural network assisted peak to average power ratio reduction for underwater acoustic orthogonal frequency division multiplexing communication. *KSII Transactions on Internet & Information Systems*, volume 17, 2023.

2023 Kamal Acharya, **Raza, Waleed**, Carlos Dourado, Alvaro Velasquez, and Houbing Herbert Song. Neurosymbolic reinforcement learning and planning: A survey. *IEEE Transactions on Artificial Intelligence*, volume 1, pages 1–14. IEEE Computer Society, 2023.

2022 Ali A. Chen B. **Raza, W.** Li, H. An intelligent detoxification function of liver algorithm-partial transmit sequence (idfla-pts) for the reduction of peak to average power ratio in underwater acoustic ofdm communication. *Engineering, Technology & Applied Science Research*, volume 12, pages 8136–8142, 2022.

2021 **Raza, Waleed**, Xuefei Ma, Amir Ali, A Raza, and S Shaikh. Performance analysis of selective mapping in underwater acoustic orthogonal frequency division multiplexing communication system. *Engineering, Technology & Applied Science Research*, volume 11, pages 6696–6702, 2021.

2021 Songzuo Liu, Habib Hussain Zuberi, Yi Lou, Muhmmad Bilal Farooq, Shahabuddin Shaikh, and **Raza, Waleed**. M-ary nonlinear sine chirp spread spectrum for underwater acoustic communication based on virtual time-reversal mirror method. *EURASIP Journal on Wireless Communications and Networking*, volume 2021, pages 1–20. SpringerOpen, 2021.

2020 **Raza, Waleed**, Xuefei Ma, Amir Ali, Zubair Ali Shah, and Ghazanfar Mehdi. An implementation of partial transmit sequences to design energy efficient underwater acoustic ofdm communication system. *arXiv preprint arXiv:2007.01273*, 2020.

2020 Xuefei Ma, Ziqi Zhou, Kaiyang Liu, Jiarong Zhang, and **Raza, Waleed**. Poles extraction of underwater targets based on matrix pencil method. *IEEE Access*, volume 8, pages 103007–103019. IEEE, 2020.

2020 Xuefei Ma, Tingting Wang, Lei Li, **Raza, Waleed**, and Zhiqiang Wu. Doppler compensation of orthogonal frequency division multiplexing for ocean intelligent multimodal information technology. *Mobile Networks and Applications*, volume 25, pages 2351–2358. Springer, 2020.

2020 Xuefei Ma, **Raza, Waleed**, Zhiqiang Wu, Muhammad Bilal, Ziqi Zhou, and Amir Ali. A nonlinear distortion removal based on deep neural network for underwater acoustic ofdm communication with the mitigation of peak to average power ratio. *Applied Sciences*, volume 10, page 4986. MDPI, 2020.

Conference Proceedings

2024 Olayemi Ogirimah, **Raza, Waleed**, Gurvir Bawa, Justus Renkhoff, Houbing Song, and Richard S. Stansbury. Proposed flight recorder recommendations for unmanned aircraft systems integration into the national airspace system. In *2024 AIAA DATC/IEEE 43rd Digital Avionics Systems Conference (DASC)*, pages 1–12, 2024.

2021 **Raza, Waleed**, Xuefei Ma, and Muhammad Bilal. Long short-term memory neural network assisted peak to average power ratio reduction for underwater acoustic orthogonal frequency division multiplexing communication. *The Journal of the Acoustical Society of America*, volume 150, pages A319–A319, 10 2021.

2021 Amir Ali, Baowei Chen, **Raza, Waleed**, Abdul Hanan Samo, and Asif Ali. Reduction of PAPR by convolutional neural network with soft feed-back in an underwater acoustic ofdm communication. In *2021 International Bhurban Conference on Applied Sciences and Technologies (IBCAST)*, pages 899–904. IEEE, 2021.

2020 Muhammad Bilal, Songzuo Liu, Gang Qiao, **Raza, Waleed**, and Habib Hussain Zuberi. Novel concept of bionic morse coding for mimicry covert underwater communication. In *2020 17th International Bhurban Conference on Applied Sciences and Technology (IBCAST)*, pages 601–605. IEEE, 2020.

2019 **Raza, Waleed**, Xuefei Ma, Tingting Wang, and Muhammad Bilal. Low complexity energy efficient orthogonal frequency division multiplexing communication system over underwater acoustic channel by partial transmit sequence peak to average power ratio reduction. *The Journal of the Acoustical Society of America*, volume 146, pages 2764–2765. Acoustical Society of America, 2019.

Referees

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