

ABDUL BASIT

PhD, (Electronic Engineer)

Department of Electrical Engineering (DEE), Faculty of Engineering & Technology
(FET), International Islamic University, Islamabad (IIUI), Pakistan,
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Work Experience

(A) University of Electronic Science & Technology China Oct 17 – Oct 19

I worked as a Post-Doctoral research fellow in School of information and communication engineering (SICE), UESTC, and CHINA. My research area included cognitive radar, MIMO radar, Phased Array radar, Frequency Diverse Array Radar Signal processing and Joint Radar-Communication designs.

(B) International Islamic University Islamabad (IIUI) July 07 – to Date

I am working as an Assistant Professor in DEE, FET, International Islamic University Islamabad (IIUI) Pakistan. I have worked at IIUI in various capacities, details are given below

1. Assistant Professor (Feb 2016-to Date)

I am working as an Assistant Professor in the Department of Electronic Engineering, International Islamic University Islamabad, Pakistan. I teach undergraduate courses, supervise MS students and Co-supervise PhD students. Moreover, I am an HEC approved PhD supervisor.

2. Lecturer (Sep 2011-to Feb 2016)

I worked as a lecturer in the Department of Electronic Engineering, International Islamic University Islamabad, Pakistan. I have taught the following courses at the Undergraduate level:

- Electronic Circuit Design-I
- Electronic Circuit Design -II
- Signals & Systems
- Complex Analysis
- Basic Electronic Engineering
- Digital Logic Design
- Differential Equations
- Digital Signal Processing

3. Lab Engineer (July 2007 to August 2011)

My job was to instruct labs and manage laboratory equipment and staff. I conducted the following labs:

- Electronic Circuit Design-I Lab
- Electronic Circuit Design-II Lab
- Circuit Analysis-I Lab
- Digital Logic Design Lab
- Signal and Systems Lab
- Digital Signal Processing Lab
- Basic Electronic Engineering Lab
- Electrical Machines Lab
- Antenna and Wave Propagation Lab

4. Teaching Assistant (addition to job as Lab Engineer): August 2007 to February 2008

Assisted Prof Hyder Ali Khan in IIUI for the subject of Basic Electronic Engineering.

5. Member

- i. -Annual Engineering Open House organizing committee at the Department of Electronic Engineering, Faculty of Engineering & Technology.
- ii. -Student counselling committee of DEE
- iii. -University Examination committee DEE
- iv. -University International conferences protocol committee DEE

6. Student Activity

In-charge student activities (i.e., regarding sports) at the Faculty of Engineering & Technology.

7. Final Year Project Supervisor

I supervise up to three final year projects and one MS thesis per year.

8. Event Supervisor

Annual Sports Gala Cricket team selection supervisor (Faculty of Engineering & Technology Engineering) since 2009.

(C) Muhammad Ali Jinnah University, Islamabad (2005-2006)

Student Assistantship

Worked as a student assistant for the courses of Digital logic design, Physics-II and Antenna Theory & Design.

(D) Internship (June-2007 –July 2007)

Pakistan Telecommunication Company Limited (PTCL) Pakistan
(Wireless Communication Department-08 Weeks)

EDUCATION

2017- 2019	Post-doctoral research UESTC, CHINA
2010-2016	PhD in Electronic Engineering Radar Signal Processing International Islamic University, Islamabad, Pakistan. (CGPA 3.91/4.00)
2007-2009	Masters in Electronic Engineering Majors in Signal and Image Processing International Islamic University, Islamabad, Pakistan. (CGPA 3.95/4.00)
2003-2007	B.S Electronic Engineering Muhammad Ali Jinnah University, Islamabad, Pakistan. (CGPA 3.73/4.00) (Silver medal)

COMPUTER SKILLS

- ✓ Matlab
- ✓ Pspice (Electronic circuit Design)
- ✓ Electronic Work Bench (EWB)
- ✓ MS Office

AFFILIATIONS

- Registered Engineer, Pakistan Engineering Council (PEC)

JOURNAL & CONFERENCE PUBLICATIONS

- [1] A. Basit, W.-Q. Wang, and S. Y. Nusenu, "Adaptive transmit array sidelobe control using FDA-MIMO for tracking in joint radar-communications," *Digital Signal Processing*, vol. 97, p. 102619, Feb. 2020. **(IF 2.7)**
- [2] A. Basit, W.-Q. Wang, S. Y. Nusenu, and Z. Zheng, "Cognitive FDA-MIMO With Channel Uncertainty Information for Target Tracking," *IEEE Transactions on Cognitive Communications and Networking*, vol. 5, no. 4, pp. 963–975, 2019.

- [3] A. Basit, W.-Q. Wang, S. Y. Nusenu, and S. Zhang, "Range-Angle-Dependent Beampattern Synthesis With Null Depth Control for Joint Radar Communication," *IEEE Antennas and Wireless Propagation Letters*, vol. 18, no. 9, pp. 1741–1745, 2019. **(IF 3.51)**
- [4] A. Basit, W.-Q. Wang, and S. Y. Nusenu, "Adaptive transmit beamspace design for cognitive FDA radar tracking," *IET Radar, Sonar & Navigation*, 2019. **(IF 2.015)**
- [5] A. Basit, W. Khan, S. Khan, and I. M. Qureshi, "Development of frequency diverse array radar technology: a review," *IET Radar, Sonar & Navigation*, vol. 12, no. 2, pp. 165–175, 2017. **(IF 2.015)**
- [6] A. Basit, I. M. Qureshi, W. Khan, S. u. Rehman, and M. M. Khan, "Beam Pattern Synthesis for an FDA Radar with Hamming Window-Based Nonuniform Frequency Offset," *IEEE Antennas and Wireless Propagation Letters*, vol. 16, pp. 2283–2286, 2017. **(IF 3.51)**
- [7] A. Basit, I. M. Qureshi, W. Khan, and A. N. Malik, "Range-Angle-Dependent Beamforming for Cognitive Antenna Array Radar with Frequency Diversity," *Cognitive Computation*, vol. 8, no. 2, pp. 204–216, 2016. **(IF 4.287)**
- [8] A. Basit, I. M. Qureshi, W. Khan, and A. N. Malik, "Cognitive frequency diverse array radar with symmetric non-uniform frequency offset," *Science China Information Sciences*, vol. 59, no. 10, p. 102314, 2016. **(IF 2.731)**
- [9] A. Basit, I. M. Qureshi, B. Shaoib, W. Khan, and A. N. Malik, "Performance Analysis of a Cognitive Phased Array Radar with Online Tracking Capability," *Wireless Personal Communications*, pp. 1–18, 2016. **(IF 0.929)**
- [10] A. Basit, I. M. Qureshi, W. Khan, I. Ulhaq, and S. U. Khan, "Hybridization of cognitive radar and phased array radar having low probability of intercept transmit beamforming," *International Journal of Antennas and Propagation*, vol. 2014, 2014. **(IF 1.34)**
- [11] Basit A, Qureshi I M, Ulhaq I, A.N Malik, Khan W, "Evolutionary Computing Based Antenna Array Beamforming with Low Probability of Intercept Property," *World Applied Sciences Journal*, vol. 23, no. 11, pp. 1570–1575, 2013.
- [12] A. Basit, "Hybrid Cognitive Phased and Frequency Diverse Array Radar." PhD Thesis, INTERNATIONAL ISLAMIC UNIVERSITY ISLAMABAD, PAKISTAN, 2016.
- [13] A. Basit; S. Y. Nusenu; S. U. Khan, "Adaptive Main Lobe/Sidelobes Controls Selection in FDA based Joint Radar-Communication Design," in *IEEE ICECE conference*, 2019, pp. 1–1.
- [14] A. Basit, S. Y. Nusenu, S. U. Khan, W. Khan, M. A. Khan, and M. U. Farooq, "Adaptive Detection and Correction of Faulty Elements in Frequency Diverse

Array,” in *2019 16th International Bhurban Conference on Applied Sciences and Technology (IBCAST)*, 2019, pp. 1010–1016.

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- [16] A. Basit, I. M. Qureshi, W. Khan, A. N. Malik, and B. Shoaib, “Beam pattern synthesis for a cognitive frequency diverse array radar to localize multiple targets with same direction but different ranges,” in *2016 13th International Bhurban Conference on Applied Sciences and Technology (IBCAST)*, 2016, pp. 682–688.
- [17] A. Basit, I. M. Qureshi, A. N. Malik, W. Khan, and B. Shoaib, “Beam sharpening of a range-angle-dependent pattern using non-uniform symmetric but integer frequency offset,” in *2016 International Conference on Intelligent Systems Engineering (ICISE)*, 2016, pp. 232–235.
- [18] S. Y. Nusenu and A. Basit, “Frequency diverse array antennas: from their origin to their application in wireless communication systems,” *Journal of Computer Networks and Communications*, vol. 2018, 2018.
- [19] S. Y. Nusenu and A. Basit, “Cognitive Transmit Subarray FDA Design for Integrated Radar-Communication Using Flexible Sidelobe Control,” in *2018 IEEE 7th International Conference on Adaptive Science & Technology (ICAST)*, 2018, pp. 1–6.
- [20] S. Y. Nusenu, W.-Q. Wang, and A. Basit, “Time-modulated FD-MIMO array for integrated radar and communication systems,” *IEEE Antennas and Wireless Propagation Letters*, vol. 17, no. 6, pp. 1015–1019, 2018. **(IF 3.51)**
- [21] S. Y. Nusenu and A. Basit, “Energy-Efficient Coding Matrix FMD-RDA Secure Transmission Scheme Based on Quadrature Spatial Modulation for mmWave Systems,” *Progress In Electromagnetics Research*, vol. 80, pp. 133–143, 2019.
- [22] S. Y. Nusenu, S. Huaizong, W.-Q. Wang, and A. Basit, “Directional Radar-Embedded Communications Based on Hybrid MIMO and Frequency Diverse Arrays,” in *2019 IEEE Radar Conference (RadarConf)*, 2019, pp. 1–5.
- [23] S. Y. Nusenu, S. Huaizong, P. Ye, W. Xuehan, and A. Basit, “Dual-function radar-communication system design via sidelobe manipulation based on fda butler matrix,” *IEEE Antennas and Wireless Propagation Letters*, vol. 18, no. 3, pp. 452–456, 2019. **(IF 3.51)**
- [24] S. Wali, C. Li, A. Basit, A. Shakoor, R. A. Memon, S. Rahim, and S. Samina, “Fast and Adaptive Boosting Techniques for Variational Based Image Restoration,” *IEEE Access*, vol. 7, pp. 181491–181504, 2019. **(IF 4.098)**
- [25] A. R. Al-Salehi, I. M. Qureshi, A. N. Malik, W. Khan, and A. Basit, “Dual-function radar–communications: information transmission during FDA radar listening

mode,” *International Journal of Microwave and Wireless Technologies*, pp. 1–12. (IF 0.703)

- [26] W. Khan, I. M. Qureshi, A. Basit, and M. Zubair, “A Double Pulse MIMO Frequency Diverse Array Radar for Improved Range-Angle Localization of Target,” *Wireless Personal Communications*, vol. 82, no. 4, pp. 2199–2213, 2015. (IF 0.929)
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- [35] M. Jadoon, Q. Zhang, I. U. Haq, A. Jadoon, A. Basit, and S. Butt, “Classification of mammograms for breast cancer detection based on curvelet transform and multi-layer perceptron,” *Biomedical Research*, vol. 28, no. 10, pp. 1–10, 2017.
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- [40] B. Shoaib, I. M. Qureshi, S. A. Butt, S. U. Khan, and W. Khan, "Adaptive step size kernel least mean square algorithm for Lorenz time series prediction," in *2015 12th International Bhurban Conference on Applied Sciences and Technology (IBCAST)*, 2015, pp. 218–221.
- [41] B. Shoaib, I. M. Qureshi, W. Khan, S. U. Khan, and A. Basit, "Numerical solution of nonlinear Boundary value problems in kernel space," in *2016 13th International Bhurban Conference on Applied Sciences and Technology (IBCAST)*, 2016, pp. 269–273.

REFERENCES

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