

ADNAN UMAR KHAN

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PROFILE

- Basically an Electrical & Electronics Engineer, Doctorate in Communications System. Over ten years of research, teaching and administrative experience. The research interests are power electronics and communication systems.
- Served as a trainer in telecommunication company and trained employees on wireless and fiber optic access networks. Also trained employees on network management system (Huawei).
- Worked in automation food processing industry, was responsible for data acquisition, process information, and control panel designs for seal testing machines.
- Currently working as an Assistant Professor in International Islamic University, Islamabad.

KEY SKILLS

- Substantial knowledge of design and development of digital electronic circuits for wireless communications.
- Strong background in VHDL coding, debug and verification.
- Working knowledge of HIPERLAN/2 PHY layers.
- Experience in simulating Mobile Communication Channels.
- Interfacing Engineering Systems with PC for data collection, and processing.
- Use of high level languages C/C++, FORTRAN, Java.
- Use of Matlab, for simulating, modeling, Signal Processing, and Control applications.
- Knowledge of Object Orientation Techniques.
- Programming in assembly languages for Motorola MC68000/6800.
- Programming in Ladder-logic (language used in Programming Logic Controller PLC).

ACHIEVEMENT

- Developed software model of physical layer of Hiperlan/2 WLAN
- Enhanced the performance of the industrial seal-testing system, used in food processing industries.
- Reduce the complexity of computations involved in estimating the dynamics of the networks. By estimating large number of differential equations by a single first order differential equation.
- Designed a digital frequency to voltage converter system to operate at low frequencies.
- Developed the software-based tool for measuring the effects of different mediums at the transmitted Electromagnetic wave.
- Designed and developed dc-dc converters and inverters

ACADEMIC QUALIFICATIONS

Year	Certificate/ Degree	Class/ Grade	Major Subjects	Institution
2012	PhD		WLAN Localization	De Montfort University, UK
1995	M.Sc.	---	Communication	University of Portsmouth, Portsmouth, UK.
1994	B.Sc.	First	Electrical & Electronics	Eastern Mediterranean University, Northern Cyprus.
1990	Intermediate (HSSC)	First	Pre-Engineering	Army Burn Hall, Pakistan.
1988	Matriculation (SSC)	First	Science	Army Burn Hall, Pakistan.

CERTIFICATION

		Date
Internal Auditor	ISO 9001:2008	2012
RCSA-certified	Wimax – Redline	2012

EMPLOYMENT

From	To	Position	Company/Institution
2013	Date	Assistant Professor	International Islamic University, Pakistan
2012	2013	Assistant Professor	The University of Lahore, Pakistan
2005	2012	Trainer	Pakistan Telecommunication Company Ltd Academy (PTCL Academy), Islamabad, Pakistan
2001	2005	Assistant Professor	COMSATS, ABBOTTABAD, Pakistan
1998	1999	Research Scholarship	Department of Elect. & Electronic Engineering, University of Portsmouth, Portsmouth, UK.
1997	1998	Research Engineer	ARIANA developments Limited, Southampton, UK.

PROFESSIONAL QUALIFICATION/MEMBERSHIP

Year	Position	Institution
2003/ 2004	Student Member	IEEE
1994 to date	Professional Engineer	Pakistan Engineering Council

PROJECTS

Year	Project Description	Achievement
2012	<p><i>Distributive Time Division Multiplexed Localization Technique for WLANs</i></p> <p>A novel distributive time division multiplexed localization technique based on the convex semidefinite programming for indoor WLANs is developed.</p>	PhD Degree
1994-1995	<p><u>Network Dynamics</u></p> <p>Stability of the networks is one of the major factors that affects the efficiency of a communication system. Sudden changes in average flow of packets destabilize a steady state system and generate transients which diminish with time.</p> <p>In order to characterize this transient network, nodes has been modeled by the queuing theory. The system has been represented mathematically by a set of differential equations. The technique has solved the problems (due to complexity involved in modeling a huge bunch of nodes and links) for simulating large networks. The classical approach has been modified by reducing a large set of differential equations by a single equivalent. Accuracy of this new technique has been verified by computer simulations.</p>	MSc Degree Subjects: Processor & Software Technology Electronic Computer Aided Design Signal Processing Communications Theory and Communication System Design
1993-1994	<p>Application of FDTD (finite-difference time-domain) method in one dimension</p> <p>Analytical solution of plane waves becomes difficult if they have to pass through a complex dielectric medium (dielectric medium function of time and distance). Numerical method based on Yee's algorithm has been used to solve wave equation through a complex medium. This algorithm has vast applications from visual display of electromagnetic wave passing through different dielectric mediums in laboratories to scanning of human parts in hospitals. FDTD method has been found a powerful technique to solve various microwave problems.</p>	BSc Degree Major: Communications Standing: Honors (CGPA 3.04 on 4.00 system)

MERITS, SCHOLARSHIPS & FELLOWSHIPS

- University of Portsmouth scholarship.

PERSONAL INFORMATION

DATE OF BIRTH: 24- 08 -72.
 MARITAL STATUS: Married.
 LANGUAGES: English
 Urdu/Punjabi/Hindku

LIST OF PUBLICATIONS

Conferences

1. **A. Umar**, M. M. Al-Akaidi, S. A. Khan, S. Khattak, A. Mi, "Performance Evaluation of a Hiperlan Type 2 Standard Based on Arithmetic Formats", Second National Workshop on Trends in Information Technology (*NWTIT 2003*), Pakistan, 2003.
2. **A. Umar**, M. M. Al-Akaidi, S. A. Khan, S. Khattak, A. Mir, "Performance Analysis of a 64-point FFT/IFFT Block designed for OFDM Technique Used in WLAN's," IEEE International Multitopic Conference - INMIC 2003, Pakistan, 2003.
3. S. Khattak, S. A. Khan, **A. Umer**, I. Khan "Space Time Equalization and Interference Cancellation in Frequency Selective MIMO Systems" International workshop on frontier of information technology, Islamabad Pakistan, December 23-24, 2003.
4. **A. Umar**, M. M. Al-Akaidi, S. A. Khan, "Wireless Systems of the Future - Providing anywhere, anytime access to IT at an extraordinary high speed", Conf: MESM2003, January 5-7, 2004, Sharjah, UAE, 2004.
5. S. Khattak, **A. Umer**, G. Fettweis, "Performance Comparison of Iterative Multiuser Detection Techniques in Interference Limited Cellular Networks," 2nd ICET conference, Nov 2006.
6. **A. U. Khan**, and M. Al. Akaidi, "A Distributive Algorithm for WLAN Localization", IEEE, ICET 6th Int conference, 2010.
7. Siddiqui, A.A.; **Khan, A.U**, Manzoor, M.M., Awan, I.A., Ijaz, A., Chand, S.L. "Interference mitigation in 4G system using Smart Antenna", Information and Communication Technologies (ICICT), 2011 International Conference, Pakistan, 2011
8. T Muhammad; **A. U. Khan**; N. Jamil; J. Zameer; M. Khawar," DC voltage regulator for battery less PV system using MPPT", [Power Generation System and Renewable Energy Technologies \(PGSRET\)](#), International Conference, Pakistan, IEEE, 2015.
9. T Muhammad; **A. U. Khan**; M. Luqman; M. B. Satti, M. Aaqib; M. F. Khan," Generation of isolated DC voltage sources for multilevel inverters", [Power Generation System and Renewable Energy Technologies \(PGSRET\)](#), International Conference, Pakistan, IEEE, 2015.
10. G. F. Laghari; **A. Umar**, S. Abdullah, "Comparative analysis of multi-input DC/DC converter topology for hybrid renewable energy systems", [Power Generation System and Renewable Energy Technologies \(PGSRET\)](#), International Conference, Pakistan, IEEE, 2015.

Journals

1. Jawad Ali Shah, I M Qureshi, Amir A Khaliq, **A Omer**, "Sparse signal reconstruction from compressed measurements using hybrid differential evolution", World Applied Sciences Journal 27 (12): 1614-1619, 2013.
2. A. Elahi, I. M. Qureshi, F. Zaman, F. Munir, **A. Umar**,"Techniques for the suppression of sidelobes in a non-contiguous orthogonal frequency division multiplexing framework", Applied Informatics, Springer, August 2016.
3. T. Muhammad, **A. U. Khan**, H. Jan, M. Y. Usman, J. Javed, A. Aslam, "Cascaded Symmetric Multilevel Inverter with Reduced Number of Controlled Switches", International Journal of Power Electronics and Drive Systems (IJPEDS), Volume 8, No 2, June 2017

4. S.Ikram, S.Zubair, J.Shah, I.Qureshi, A.Wahid, A.Umar, “Enhancing MR Image Reconstruction Using Block Dictionary Learning”, IEEE Access, IEEE (2019)