

Sunila Akbar

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Education

- Oct 2014 – Jan 2018 **PhD Telecommunications**
King's College London
Supervisor: Prof Arumugam Nallanathan
Dissertation: Heterogeneous Cellular Networks with Energy & Spectral Efficient Techniques
- Jan 2004 - Dec 2007 **MEngg Electrical Engineering**
NED University of Engg. & Tech., Karachi, Pakistan
CGPA: 3.9/4.0
- Jan 1994 to Dec 1997 **BE Electrical Engineering**
NED University of Engg. & Tech., Karachi, Pakistan
Percentage: 90 - Fifth Position among 160 students

Awards

- Commonwealth Scholarship, UK, for pursuing PhD
- Merit Scholarship at NED University of Engg. & Tech., Karachi, Pakistan, for achieving Second Position among 160 students in the Third Year of BE degree

Research Abstract

The work presented in my PhD thesis developed stochastic geometry based analytical models for heterogeneous cellular networks (HCNs) employing state-of-the-art spectrum and/or energy efficient radio frequency wireless power transfer (RF-WPT), full duplex (FD) communications, and massive multiple input multiple output (MIMO) technologies. The analysis is performed for K-tier HCNs and the performance is evaluated in terms of Coverage Probability, Average Ergodic Rate, and Area Spectral Efficiency of the network.

Publications

- **S. Akbar**, Y. Deng, A. Nallanathan, M. El Kashlan, and G. K. Karagiannidis, "Massive Multiuser MIMO in Heterogeneous Cellular Networks with Full Duplex Small Cells," in IEEE Trans. Commun., vol. PP, no.99, pp. 1-1, Jul. 2017.
- **S. Akbar**, Y. Deng, A. Nallanathan, M. El Kashlan and A. H. Aghvami, "Simultaneous Wireless Information and Power Transfer in K -Tier Heterogeneous Cellular Networks," IEEE Trans. Wireless Commun., vol. 15, no. 8, pp. 5804-5818, Aug. 2016.
- **S. Akbar**, Y. Deng, A. Nallanathan, M. El Kashlan, and G. K. Karagiannidis, "Massive MIMO-enabled HetNets with Full Duplex Small Cells," accepted for publication in Proc. IEEE Global Communications Conference (GLOBECOM), Singapore, Dec. 2017.
- **S. Akbar**, Y. Deng, A. Nallanathan and M. El Kashlan, "Downlink and Uplink Transmission in K-Tier Heterogeneous Cellular Network with Simultaneous Wireless Information and Power Transfer," in Proc. IEEE Global Communications Conference (GLOBECOM), San Diego, CA, Dec. 2015, pp. 1-6.
- S. Bano, T. Altaf and **S. Akbar**, "Microcontroller based spectrophotometer using compact disc as diffraction grid," in Proc. SPIE 7991, Display, Solid-State Lighting, Photovoltaics, and Optoelectronics in Energy II, 2010.

Professional Experience

Academic

- Feb 2018 - Present Assistant Professor, NED University of Engg. & Tech., Karachi, Pakistan
 - Teaching various postgraduate courses offered in Telecommunications Engg. Programme to the class size of 35 students
 - Teaching various undergraduate courses offered in Telecommunications Engg. Programme to the two classes of 35 students
 - Acting as a Class Advisor of Third Year - Telecommunications Engg. Students
 - Acting as a Departmental lead of 'Outcome-Based Education (OBE)' System implementation by Washington Accord
 - Member - Curriculum Committee of Telecommunications Engg. Programme
 - Served as a Technical Committee Chair at International Conference on Emerging Trends in Telecommunications and Electronic Engineering 2018

- Sep 2016 - Present **Graduate Teaching Assistant**, King's College London
 - Teaching Assistant for first year undergraduate module in Electronic Engineering, 'Electronic Applications Project and Engineering Lab 1', for three groups of 35 students
 - Teaching Assistant for first year undergraduate module in Computer Science, 'Computer Systems I', for 35 students
- Oct 2008 - Sep 2014 **Assistant Professor**, NED University of Engg. & Tech., Karachi, Pakistan
 - Taught various Undergraduate Courses of Electrical and Electronic Engg. to the class size of 70 students.
 - Supervised Undergraduate Engineering Projects
 - Developed Curricula and Lab manuals for various Undergraduate Courses
 - Headed the committee of Final Year Project evaluation team
 - Served as a Class Advisor of First Year and Final Year of Bachelors of Telecommunications Engineering
- Jul 2006 - Sep 2008 **Lecturer**, NED University of Engg. & Tech., Karachi, Pakistan
 - Taught various Undergraduate Courses of Electrical and Electronic Engg. to the class size of 70 students.
 - Supervised Undergraduate Engineering Projects
- Jan 2004 - Jun 2006 Visiting Faculty Member, NED University of Engg. & Tech., Karachi, Pakistan
 - Taught 'Instrumentation' to the students of Electronic Engg. with the class size of 70 students.

Non-Academic

- Sep 2000 - Apr 2002 **Projects Coordinator**, Towam Contracting Company, Dubai, UAE
 - Responsible for technical aspects of electrical projects, to monitor their execution as to their timely completion and profitability for the company
 - Prepared business plans, projected targets, and to review business plans periodically
- Jan 1999 - Aug 2000 **Assistant Engineer**, Araj Development and Construction, Abu Dhabi, UAE
 - Assisted the team in design and coordination of electrical projects
 - Practiced procurement methods to improve business performance and develop value engineering

Professional Memberships

- Fellow - The Higher Education Academy, UK
- Member - Pakistan Engineering Council (PEC)

Technical Skills

- Proficient in MATLAB
- Experience of coding in C++, Python
- Working experience of Mathtype and Adobe Illustrator

Professional Development

- Nov 2018 "Leadership Skills", Workshop at NED University of Engg. and Tech., Karachi, Pakistan
- Oct 2018 "OBE System Design and Implementation", Training at NED University of Engg. And Tech., Karachi, Pakistan
- May 2017 "Development Module Workshop" Cumberland Lodge, Windsor, UK
- Mar 2015 "Preparing to Teach in Higher Education", King's College London
- Aug 2013 Certificate of Online course on "Machine Learning", Coursera - Prof Andrew Ng (Stanford University)
- Jun 2012 Workshop on "Circuits for Sensors and Instrumentation" by Prof Dr. Asad Abidi (University of California, Los Angeles), Lahore University of Management and Sciences (LUMS), Pakistan
- Dec 2011 "Professional Competency Enhancement Program for Teachers" by Higher Education Commission (HEC), Pakistan
- Apr 2007 "Workshop on Communication Equipment" by Electronica Venneta & IN. EL. SPA., Italy, at NED University of Engg. & Tech., Karachi, Pakistan
- Mar 2000 "Primavera Project Planner P3", NED University of Engg. & Tech., Karachi, Pakistan