KHALED ALMUSTAFA

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EDUCATION:

- PhD (Electrical Engineering), October 2007
  Specialization: Multiple Input Multiple Output Communication Systems and Their Performance in the Presence of Imperfect Channel State Information (CSI).
  Cumulative Courses Average: 93.00 %
  The University of Western Ontario, London Canada
- M.E.Sc (Electrical Engineering), December 2004
  Specialization: Numerical Solutions of Stochastic Differential Equations and Their Applications in Wireless Communication.
  Cumulative Courses Average: 90.00 %
  The University of Western Ontario, London Canada
- B.E.Sc (Electrical Engineering), April 2003
  Specialization: Wireless Communication
  Cumulative Average: 84.79 %
  The University of Western Ontario, London Canada

HONOURS AND AWARDS:

- Outstanding Presentation in Graduate Symposium in Communication Systems and Data Networking, University of Western Ontario 2007
- Teaching Assistant Award, Department of Electrical and Computer Engineering, University of Western Ontario, 2005-2006.
- Ontario Graduate Scholarship (OGS) Award 2006-2007.
- Top ten graduate, Department of Electrical Engineering, 2003.
- Dean's Honour Lists, 2000, 2001 and 2003.
- University of Western Ontario in-course Scholarship, 2000 and 2001.
- Natural Sciences and Engineering Research Council of Canada (NSERC) Undergraduate Research Scholarship, 2002.

PUBLICATIONS:

- Khaled Almustafa, "Performance of Multiple Input Multiple Output Communication System in Partially Known Channels," *Ph.D. Thesis.* The University of Western Ontario. 2007.
- Serguei Primak, Khaled Almustafa, Jeff Weaver and Valeri Kontorovich, "On Moment Analysis of Stochastic Differential Equations with Random Structure," *Dynamics of Continuous, Discrete and Impulsive Systems* journal, 2007.
- Khaled Almustafa, "Numerical Solutions of Stochastic Differential Equations (SDE) and Their Applications in Wireless Communication," *Master Thesis.* The University of Western Ontario. 2005.

- Primak S, Almustafa K, Willink T and Baddour K, "On Achievable Data Rates and Optimal Power Allocation in Fading Channels with Imperfect Channel State Information," *Wireless Personal Communication Journal*, 2008.
- Serguei Primak and Khaled Almustafa, "On the Covariance Function of a Mobile to Mobile Communication Link," Submitted to the *USCWC Journal on Wireless Communication.*

CONFERENCES:

- Hasan R. Obeid, Khaled Almustafa, Rached N. Zantout, Fakhry Khellah, "Saudi License Plate Localization Using Object Adjacency Properties, " Proceeding ICCIT2011, Aqabah, Jordan.
- Khaled Almustafa, Rached N. Zantout, Hasan R. Obeid, "Peak Position, Recognizing Characters in Saudi License Plates," Proceedings GCC2011 Dubai, UAE.
- Khaled Almustafa, Rached N. Zantout, Hasan R. Obeid, "Pixel Density: Recognizing Characters in Saudi License Plates," Proceeding ISDA2010 Egypt.
- Eltayeb Abuelyaman, Atikan Teber and Khaled Almustafa "Extension of Diffie-Hellman's Secure Key Distribution Technique to Multipoint Broadcasting," Proceeding of the 2010 World Congress in Computer Science, Computer Engineering, and Applied Computing (WORLDCOMP'10: July 12-15, 2010, USA).
- Serguei Primak and Khaled Almustafa, "Optimization of Pilot Locations in Adaptive M-PSK Modulation in Rayleigh Fading Channel in Imperfect CSI," *Proceeding IEEE-GCC09*. Kuwait, 2009.
- Primak S, Almustafa K, Willink T and Baddour K, "On Achievable Data Rates and Optimal Power Allocation in Fading Channels with Imperfect CSI," the *ISWCS* 2007.
- Serguei Primak and Khaled Almustafa, "On the Covariance Function of a Mobile to Mobile Communication Link," the *IASTED* International Conference on Modelling and Simulation (MS 2007). Montreal, Canada.
- Serguei Primak, Khaled Almustafa and T. Willink, "On Alamouti Scheme Performance in Spatially Correlated Fading and Pilot Assisted Channel Prediction," the *IASTED* International Conference on Modelling and Simulation (MS 2007). Montreal, Canada.

TECHNICAL SKILLS:

- Simulation of numerical solutions to SDE (Stochastic Differential Equations) in communication applications using MATLAB.
- Statistical methods of random processes in wireless communication.
- Simulation of Probability of Error in term of signal to noise ratio in a communication systems using CPFSK and OFDM coding schemes.
- Simulation of the Log-normal shadowing model for wireless mobile communication.
- Generation of non-Gaussian random processes in the form of SDE.
- Wireless Secure Data Transmission and Encryption.
- Design of RF receiver.

PROFESSIONAL PROFILE:

- Dedicated scholar with exceptional academic state of mind.
- Demonstrated ability to clarify difficult concepts.
- Multifaceted technical, business, and personal communication skills.
- Self motivated with a strong desire for success and accomplishment.
- Received outstanding evaluations from students and supervising administrators.

WORK EXPERIENCE:

- 9/2008 – present
    - Assistant Professor, Department of Information Systems, College of Computer and Information Sciences, Prince Sultan University, Riyadh, Kingdom of Saudi Arabia.
        - Teaching Information Systems and Computer Science courses.
        - Member of the Enrollment Improvement Committee.
        - Chairman of the Marketing and PR Committee.
        - Chairman of the Students' Assessment and Recognition Committee.
        - Director of the Public Speaking Club.
        - Interim Counsellor for the PSU's IEEE students' branch.
    - General Supervisor, Information Technology and Computer Services for Men and Women Colleges, (ITCS), Prince Sultan University, Riyadh, Kingdom of Saudi Arabia.
- 1/2008 – 7/2008
    - Assistant Professor, Department of Communication and Electronic Engineering, University of Kalamoon, Deratiah, Syria.
        - Teaching Communication Engineering courses for higher undergraduate levels.
        - Supervising students with their graduation's design projects.
        - Program development for the Communication Engineering with the cooperation of Dr. Serguei L. Primak, the Department of Electrical and Computer Engineering, University of Western Ontario, Canada, under the supervision of the Dean of Engineering at Kalamoon University, Dr. Shawki El-Batal.

- 12/2004- 11/2007
    - Research Assistant, Department of Electrical and Computer Engineering, University of Western Ontario, London. Under the supervision of Dr. S.L. Primak with a formal cooperation with Dr. T. Willink; Communication Research Centre Canada (CRC).
        - Investigating the effect of channel estimation and channel parameters on the performance of the 2x1 Alamouti space time coding (STC).
        - The capacity of a MIMO link subjected to a random change in the visibility of the antenna elements through numerical simulations.
        - Effect of the channel estimation's error on the diversity of MIMO systems.

        - Covariances function of the mobile to mobile communication link.
        - Achievable Data Rates and Optimal Power Allocation in Fading Channels with Pilot Assisted Estimation.
    - Teaching Assistant, Department of Electrical and Computer Engineering, University of Western Ontario, London.
        - Third year undergraduate level course, Communication Electronic I.
        - Fourth year undergraduate level course, Communication Electronic II.
        - Third year undergraduate level course, Electro Magnetic Theory II

- 05/2003-12/2004
    - Research Assistant, Department of Electrical and Computer Engineering, University of Western Ontario, London. Under the supervision of Dr. S.L. Primak.
        - Numerical simulation of applications in wireless communication, involving the generation of non-Gaussian probability density functions using stochastic differential equations. Simulations done in MATLAB.
- 04/2002-04/2003
    - Undergraduate Researcher, Department of Electrical and Computer Engineering, University of Western Ontario, London.
        - Computer simulation of the effect of noise and channel fade on a wireless channel.
        - Wireless interface for secure data transmission.

COURSES AT PRINCE SULTAN UNIVERSITY:

- CS 101 Computer Programming I.

    - The objective of this course is to provide the student with a clear overview of how to solve real-life problems and provide a computer solution to them using the C programming language and to acquaint students with computer terminology commonly used in the computer discipline.

- CS 151 Introduction to Digital Design.

    - The objective of this course is to enables the student to understand how the basic components of computers are specified, optimized and implemented using current digital electronics technology. This knowledge is a key factor in preparing the student to understand how computers work in subsequent courses.

- CS 285 Discrete Mathematics.

    - This course is designed for a one semester course in discrete mathematics for sophomore or junior level students. The text covers the mathematical concepts that students will encounter in many disciplines such as computer science, Information Systems, Business, and the sciences. These concepts are and not in any preferable order, Sets, functions, logic, truth tables, Boolean algebra,

Algorithms, Integers and matrices, Mathematical reasoning, discrete probability and probability theory.

COURSES TAUGHT AT THE UNIVERSITY OF KALAMOON:

- ECEN 5600 Advanced Communication.
    - The objective of this course is to provide students with basic understanding of some of the modern communication systems used in wireless communication. Such systems are used in cellular networks and data transmission.

- ECEN 4305 Radio Circuit.
    - The basic objective of this course is to provide students with the knowledge and understanding how to analyze and design the radio frequency circuit of wireless communication equipments, and the related circuits of modulators, mixers, IF amplifiers and demodulators.

- ECEN 3305 Electromagnetic Theory.
    - The basic objective of this course is to provide the students with knowledge of understanding the concept of equations of stationary electric and magnetic fields, Solution to static field problems, Maxwell's equations, Circuit Concepts and Impedance elements, and Propagation and reflection of plane waves.

COURSES TAUGHT AS A TEACHER ASSISTANT AT THE UNIVERSITY OF WESTERN ONTARIO:

- ECE 370a Communication Electronic I.
    - This course is an introduction to the concepts associated with the transmission and reception of modulated signals. It provides sufficient background in devices and circuits employed in radio communication systems to enable the student to design and build basic communication circuitry.
- ECE 451b Communication Electronic II.
    - This course is an introduction to understanding modern wireless communication. Strengthened ability in researching and self learning. Ability to work individually and in teams.
- ECE 336b Electromagnetic Theory II.
    - This course is concerned with the study of electromagnetic phenomena arising in engineering applications. The phenomena are explored via a mathematical treatment of the laws governing electromagnetic fields. The main objective of this course is to learn how to apply these laws to the many and widely ranging applications, which arise in electrical engineering and gain a fundamental understanding of the phenomena occurring therein.