

Full Curriculum Vitae

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1 Short Vitae

MOUHAMED ABDULLA received, respectively in 2002, 2005, and 2012, a B.Eng. (with Distinction) in Electrical Engineering, an M.Eng. in Aerospace Engineering, and a Ph.D. in Telecommunications all at Concordia University in Montréal, Québec, Canada. He is currently a Systems Engineering Researcher with the Department of Electrical and Computer Engineering at Concordia University. Moreover, for nearly 7 years since 2003, he worked at IBM Canada Ltd. as a Senior Technical Specialist. Dr. Abdulla holds several awards, honors and recognitions from international organizations, government, academia, and industry. He is professionally affiliated with IEEE, IEEE ComSoc, IEEE GOLD (S'02-GSM'09-M'12), ACM, AIAA, and OIQ. Currently, he is a member of the executive committee for IEEE Montréal Section, and serves as its Secretary. In addition, he is also the Secretary of IEEE ComSoc and ITSoc societies. Furthermore, he is an Associate Editor of the IEEE Technology News Publication, IEEE AURUM Newsletter; and Editor of Journal of Next Generation Information Technology, and Advances in Network and Communications Journal. Also, he regularly serves as a referee for a number of journal publications such as: IEEE, Springer, and EURASIP; and contributes as an examination item writer for the prominent IEEE/IEEE ComSoc WCET[®] Certification Program. Besides, he constantly serves as a Technical Program Committee (TPC) member for several IEEE international conferences. His fields of interests include: wireless communications, error control coding, DSP, and avionics. Presently, his research is focused on advancing the fundamentals and characteristics of wireless random networks. Moreover, he has a particular interest in philosophical factors and social aspects related to engineering education, and research innovation. Since 2011, his biography is listed in the distinguished Marquis Who's Who in the World publication.

2 Education

- **Doctor of Philosophy (Ph.D.), ECE Dept., Electrical Engineering (Telecommunications)**, Concordia University, Montréal, Québec, Canada. Completion Date: Sep.2012.
 - Main Courses:
 - * Digital Communications (Grade: A+)
 - * Advanced Digital Wireless Transmission (Grade: A)
 - Dissertation Title: *On the Fundamentals of Stochastic Spatial Modeling and Analysis of Wireless Networks and its Impact to Channel Losses.*
 - Thesis Keywords:
 - * Architecture: Cellular Systems, Network Planning, Network Modeling.
 - * Pattern: Spatial Deployment, Random Geometry.
 - * Transmission: Channel Propagation, Large-Scale Fading.
 - * QoS: Stochastic Inference, Network Performance.
 - * Computation: Random Generation, Monte Carlo Simulations.
 - Committee:
 - * Advisor: Prof. Yousef. R. Shayan.
 - * External: Prof. Benoit Champagne (McGill University).

- * Internal: Prof. Ahmed K. Elhakeem and Prof. Walaa Hamouda.
 - * External to Program: Prof. Javad Dargahi.
- **Master of Engineering (M.Eng.), MIE Dept., Aerospace Engineering (Avionics),** Concordia University, Montréal, Québec, Canada. Completion Date: Dec.2005.
 - Main Courses:
 - * Acoustics (Grade: A-)
 - * Avionic Navigation Systems (Grade: A)
 - * Avionic Systems Design (Grade: A)
 - * Industrial Stage and Training (Grade: A)
 - Specialization:
 - * Short-range NAVAIDS: ADF, VOR, DME, TACAN, VORTAC, RNAV.
 - * Long-range NAVAIDS: LORAN-C, OMEGA, INS/IRS, DNS, GPS.
 - * Approach/Landing: ALS, VASIS, MB, ILS, MLS, DGPS.
 - * Airborne Radars: RA, WXR, GPWS, TCAS.
 - * B747 Systems: EFIS (PFD/ND), EICAS, AFCS, FMCS, CDU.
 - * Data Bus Standards: ARINC-429, MIL-STD-1553.
 - * Airworthiness Certifications: TCCA/CAR (Canada), FAA/FAR (USA), JAA/JAR (EU).
 - Aerospace Engineering Book: *Avionics Made Simple (ISBN: 978-0-88947-908-1)*.
 - Advisor: Prof. Luis Rodrigues.
 - **Bachelor of Engineering (B.Eng.) “with Distinction”, ECE Dept., Electrical Engineering (Electronics),** Concordia University, Montréal, Québec, Canada. Completion Date: Dec.2002.
 - Specialization:
 - * VLSI Design.
 - * VLSI Process Technology (i.e. chip fabrication in clean-room environment).
 - * IC Technologies: BJT (NPN, PNP), MOSFET (NMOS, PMOS), TTL, ECL, CMOS, BiCMOS.
 - * Power Electronics: Power Supply Design, AC/DC.
 - * Processors/Boards: SB, DSP Board, FPGA Board.
 - * CAD Tools for EDA: Cadence, OrCAD, SIMetrix, Micro-Cap, CircuitMaker, Analog Workbench, B2SPICE, PSPICE, HSPICE.
 - Project Title: *Analysis of a SVPWM Scheme for a Three-Leg VSI using FPGA Technology.*
 - Advisors: Prof. Chunyan Wang, and Prof. Geza Joos (McGill University).
 - **Diplôme d’études collégiales (D.E.C.), Science Program (Health Sciences),** Dawson College, Montréal, Québec, Canada. Completion Date: Jun.1999.

- **Diplôme d'études collégiales (D.E.C.), Sciences de la nature (Sciences pures et appliquées)**, Cégep André-Laurendeau, Montréal, Québec, Canada. Transferred: Dec.1997.
- **Diplôme d'études secondaires (D.E.S.), Sciences de la nature (Sciences pures et appliquées)**, École secondaire Saint-Luc, Montréal, Québec, Canada. Completion Date: Jun.1997.
- **Certificat d'études de l'école primaire (C.E.P.), Formation générale**, École Westminster, Montréal, Québec, Canada. Completion Date: Jun.1992.

3 Additional Training

3.1 Audited Graduate Coursework at Concordia University

- Antennas, Fall-2009.
- Telecommunications Networks, Summer-2009.
- Information Theory and Source Coding, Fall-2008.
- Fundamentals and Applications of MIMO Communications, Fall-2007.

3.2 Graduate Coursework in Other Universities

- Théorie des communications, Winter-2005.
 - École Polytechnique, Université de Montréal (Grade: A)
- Études de cas en aérospatiale, Winter-2005.
 - École Polytechnique, Université de Montréal (Grade: A)
- Optimization and Optimal Control, Fall-2004.
 - McGill University (Grade: A-)

3.3 Certifications

- Ph.D. Seminar in University Teaching Certificate (10-weeks Training), Dec.2006.
 - Centre for Teaching and Learning Services, Concordia University.
- Teaching Assistant Orientation Certificate, Aug.2006.
 - Centre for Teaching and Learning Services, Concordia University.
- IBM PC Architecture Certificate (TXW02-R22), Jul.2005.
 - IBM Canada Ltd.

- IBM Secure Wireless Solutions Certificate (TXW15-R2), Sep.2003.
 - IBM Canada Ltd.
- IBM Security Solutions Certificate (TXW14-R2), Sep.2003.
 - IBM Canada Ltd.
- Professional Engineering License Certificate, Sep.2003.
 - Ordre des ingénieurs du Québec.

4 Experience

4.1 Academic Positions

- **Secretary, IEEE Montréal Section, IEEE ComSoc, and IEEE ITSoc, R7-Canada.** Time Period: Jan.2013–Present.
 - Member of the Executive Committee (ExCom) that decides on the overall management, direction, and financial decisions (\sim \$200,000.00/yr) of IEEE Montréal Section for its nearly 2,200 members composed of: academics, students, and professional engineers.
 - Responsible for planning with IEEE technical chairs all research-based activities being held in the city of Montréal and its surroundings, including: conferences, workshops, seminars, tutorials, distinguished lecturers, invited talks; where the aim of such interactions is to foster national and international research exposure and collaborations
 - Coordinate and organize IEEE sponsored events with universities and key corporations in the region, lead by: Concordia University, McGill University, École Polytechnique (University of Montréal), École de Technologie Supérieur (ETS), Sherbrooke University, Université du Québec à Montréal (UQAM), INRS, and local industries.
 - Oversee the documentation, communication and distribution of IEEE technical and administrative events to various committee members, affinity groups, technical chapters, and student branches.
 - Chair, IEEE Montréal: Prof. Roni Khazaka (McGill University).
 - President, IEEE Canada: Prof. Amir G. Aghdam (Concordia University).
- **Research Associate, ECE Dept., Concordia University.** Time Period: Sep.2006–Present.
 - Conduct research activity by analyzing, modeling, planning, deploying, designing, optimizing and simulating wireless systems and applications, with specific emphasis to link layer (PHY/MAC) aspects for a host of RF technologies, including 4G cellular networks.
 - Work on diverse wireless networking projects in communications theory and applications ranging from: system design, algorithm development, modulation techniques, error control coding, signal processing, interference/coexistence analysis, among others. Also, develop and improve various interactive and adaptable software simulator tools practical for precisely modeling the geometry of multi-coverage and multi-scale wireless networks.

- Prepare major NSERC grant proposals for various long-term research programs in the ECE department. And mentor the research progress of multilevel graduate students pursuing M.Eng., M.Sc. and Ph.D. degrees in wireless communications.
- Disseminate research results in technical reports and competitive peer-reviewed publications. And deliver research-based technical presentations/talks to diverse small/large audiences.
- Supervisor: Prof. Yousef R. Shayan.
- **Instructor, Dean of Students Office, Concordia University.** Time Period: Sep.2006–Present.
 - Instruct analytical courses to diverse multi-age/multi-level students majoring in: engineering, computer science, pure sciences, commerce, and social sciences.
 - Course Numbers:
 - * **Pure Mathematics:** MATH 200 (Fundamental Concepts of Algebra), 201 (Elementary Functions), 202 (College Algebra), 203 (Differential and Integral Calculus I), 204 (Vectors and Matrices), 205 (Differential and Integral Calculus II), 206 (Algebra and Functions), 208 (Fundamental Math I), 209 (Fundamental Math II), 251 (Linear Algebra I), 354 (Numerical Analysis), STAT 249 (Probability I).
 - * **Engineering Mathematics:** ENGR 213 (Ordinary Differential Equations), 233 (Advanced Calculus), 311 (Transform Calculus and Partial Differential Equations), 371 (Probability and Statistics in Engineering), 391 (Numerical Methods in Engineering).
 - * **Communications and Signal Processing:** ELEC 264 (Signals and Systems I), 363 (Fundamentals of Telecommunication Systems), 364 (Signals and Systems II), 365 (Complex Variables and Partial Differential Equations), 442 (Digital Signal Processing), 462 (Digital Communications), 464 (Wireless Communications).
 - * **Electronics:** ELEC 273 (Circuit Analysis), 275 (Principles of Electrical Engineering).
 - * **Computers:** COEN 231 (Discrete Mathematics), 312 (Digital Systems Design I).
 - Dean of Students: Mr. Andrew Woodall, M.M.
- **Teaching Assistant, ECE Dept., Concordia University.** Time Period: Sep.2006–Sep.2012 (~6 yrs).
 - Assisted in the teaching of various telecommunication courses by: preparing and reviewing course materials; writing and providing solutions to assignments, projects, midterms, and finals.
 - Undergraduate Courses:
 - * ELEC 462, Digital Communications (3.5 credits)
 - * ELEC 464, Wireless Communications (3.0 credits)
 - Graduate Courses:
 - * ELEC 6831, Digital Communications-I (4.0 credits)

- * ELEC 6141, Advanced Digital Wireless Transmission (4.0 credits)
- Reflected some of the thoughts and lessons experienced at this higher education institute via peer-reviewed pedagogical publications; where the topic of wireless networking was specifically explored by analyzing effective approaches for design-based teaching and researching methodologies and practices.
- These contributions have been published by the distinguished Canadian Engineering Education Association (CEEA), and the observations have been presented at: Dalhousie University (Halifax, NS, Canada), McMaster University (Hamilton, ON, Canada), and École Polytechnique (Montréal, QC, Canada).
- Supervisor: Prof. Yousef R. Shayan.
- **Research Assistant, MIE Dept., Concordia University.** Time Period: Jan.2005–Dec.2005 (~1 yr).
 - Was a member of the hybrid control systems (HYCONS) laboratory undertaking research work in Aerospace Engineering
 - Main field of interest were in avionic systems, and the various communication and navigation units/antennas located on aircrafts and ground-based stations.
 - Specialized in short/long NAVAIDS, approach/landing technologies, airborne radars, B747 Units, data bus standards, and airworthiness certifications.
 - Supervisor: Prof. Luis Rodrigues.
- **Science Instructor, Dawson College Learning Centre and Student Services.** Time Period: Feb.1998–Jun.1999 (~1.5 yrs).
 - Taught various analytical topics to students majoring in health, and pure and applied sciences.
 - Course Numbers:
 - * **Mathematics:** 201-103 (Cal. I), 201-203 (Cal. II), 201-303 (Cal. III), 201-105 (Linear Algebra).
 - * **Physics:** 203-101 (Mechanics), 203-201 (Electricity/Magnetism), 203-301 (Waves/Optics).
 - * **Chemistry:** 202-101 (Bonds/States), 202-201 (Solutions), 202-202 (Organic).
 - Director: Ms. Rozanne Goldman, M.Sc.

4.2 Professional Positions

- **Senior IT Support Specialist, CSC/POS Group, IBM Canada Ltd.** Time Period: Mar.2008–Dec.2009 (~2 yrs).
 - Provided technical consultations; performed system/network administration and support; recommended hardware and software solutions; conceptualized systematic and efficient methods; contributed and updated technical procedures to the knowledge base repository.

- Expertise involved multiple systems, such as: sophisticated interactive kiosks, computer platforms, and hand-held devices.
- Dealt with major governmental bodies and corporations, most importantly: Government of Ontario, Calgary Airport Authority, IBM Skills Onsite, Bell Hosting, Philip Morris USA, Abbott Laboratories, AstraZeneca, Schering-Plough, and Butterfield Bank.
 - Managers: Ms. Ginette Beaucage, and Mr. Christian Larose.
- **Senior IBM Product Specialist, IBM Canada Ltd.** Time Period: Feb.2003–Mar.2008 (~5 yrs).
 - Provided system support for various IBM hardware units and devices; and specialized in IBM software such as ThinkVantage Technologies. Also prepared technical documentations and administrative procedures; supervised the activity and progress of junior specialists; provided troubleshooting training to new employees; and conceptualized workaround solutions to complex anomalies.
 - Specialized in IBM ThinkPad Notebooks and Desktops; IBM Servers; IBM System Boards; IBM Handheld Devices; and IBM Removable Units.
 - Following the acquisition of IBM’s computer business, Lenovo (a Chinese multinational technology firm) became the primary client. Also supported other SMBs in North America and Worldwide.
 - Managers: Mr. Robert Gingras (retired), and Ms. Caroline Gauthier.

5 Honors and Awards

5.1 Recognitions from International Organizations

- Listed in “**Marquis Who’s Who in the World**” biographical publication.
 - 31st Edition (ISBN: 978-0-8379-1152-6) - 2014.
 - 30th Edition (ISBN: 978-0-8379-1150-2) - 2013.
 - 29th Edition (ISBN: 978-0-8379-1147-2) - 2012.
 - 28th Edition (ISBN: 978-0-8379-1145-8) - 2011.
- Invited to the “International Civil Aviation Agency (**ICAO**)” which is a “United Nations (**UN**) Specialized Agency”, and met the “President of the Council”. Mar.2010.
- Invited to present a technical talk to “**NATO** Research and Technology Organisation (**RTO**)”. Participated NATO Countries: Canada, US, UK, Germany, Netherlands, Italy, and Spain. Oct.2008.
- Selected to meet with “Expedition 9 Crew Members” of the “International Space Station (**ISS**)”, in collaboration with **NASA** and the **Russian Space Agency**. Mar.2005.

5.2 Academic Recognitions and Highlights

- Received “**Full Invitation**” by the Editor-in-Chief and the Executive Publication Editor of “**Advances in Network and Communications Journal**” (ISSN: 2093-4734) to submit a paper on my ongoing research in telecommunications. Aug.2013.
- “**Invited**” by IEEE Canada to attend the “**Engineering Institute of Canada (EIC)**” annual gala, celebrating the achievements and formal induction of Outstanding Canadian Researchers. May.2013.
- “**NSERC Discovery Grant**” (\$250,000.00) was awarded to my doctoral advisor for future research in Canada, founded entirely on the fundamentals conceptualized in my Ph.D. Dissertation. Nov.2011.
- “**Doctoral Thesis Completion Award**” (\$4,000.00), School of Graduate Studies, Concordia University. Jun.2011.
- “**Invited**” to present a “**Technical Talk on Random Networks**” at McGill University during JWCC’10. May.2010.
- “**Outstanding Scholastic Achievement and Excellence Award**” (top 15% of Ph.D.s), Golden Key International Honour Society. Nov.2009.
- “**Research Conference Award**” (\$500.00), School of Graduate Studies, Concordia University. Apr.2009.
- Nominated for the “**International Scholar Laureate Program**”, Golden Key International Honour Society. Dec.2008.
- My “**Avionics Made Simple**” textbook has been adapted as undergraduate/graduate coursepack for: ELEC 416, MECH 482 and ENGR 6461 (in use for the past 8+ yrs). Sep.2006–Present.
- Graduated in Aerospace Engineering with grades among the “**top 5% of M.Eng.s**”, ENCS Spring Convocation, Concordia University. Jun.2006.
- “**NTIC Bursary Award**” (\$3,000.00), Ministère de l’Education du gouvernement du Québec (Québec’s Ministry of Education). Sep.2005.
- Awarded B.Eng. in Electrical Engineering “**with Distinction**”, ENCS Spring Convocation, Concordia University. Jun.2003.
- “**Dean’s List for Academic Years: 1999, 2000, 2001, and 2002**”, Dean of Engineering, Concordia University (while completing a 4/5yrs program in only 3yrs). 1999–2002.
- “**Outstanding Scholastic Achievement and Excellence Award**” (top 15% of Bachelors), Golden Key International Honour Society. Mar.2001.
- “**Millennium Scholarship Award**” (\$3,500.00), Canada Millennium Scholarship Foundation (on behalf of the Canadian Parliament). Nov.2000.
- Obtained the “**Highest Grades in Pure Mathematics (96%) and EM Physics (92%)**” from all graduating Health/Pure and Applied Science Students, Dawson College. Jun.1999.

5.3 Professional Recognitions and Highlights

- **IBM Thanks Award for Excellent Support.** Dec.2009.
- **IBM Distinction as a Senior Specialist.** Feb.2008.
- **IBM Thanks Award for Extraordinary Assistance.** Jul.2007.
- **IBM Year-End Innovation Award.** Dec.2006.
- **IBM A&P Recognition as a Product Specialist.** Jan.2005.

6 Membership in Professional and Honorary Societies

- Member, Institute of Electrical and Electronics Engineers (**IEEE**) – (S'02-GSM'09-M'12)
- Member, IEEE Communications Society (**IEEE ComSoc**)
- Member, IEEE Graduates of the Last Decade (**IEEE GOLD**)
- Member, Association for Computing Machinery (**ACM**)
- Member, American Institute of Aeronautics and Astronautics (**AIAA**)
- Member, Ordre des ingénieurs du Québec (**OIQ**)
- Lifetime Member, Golden Key International Honour Society (**GK**)
- Lifetime Member, Concordia University Alumni Association (**CUAA**)

7 Technical Activities and Services

7.1 IEEE Executive Committees

- **Secretary**, IEEE Montréal Section, R7-Canada. Jan.2013–Present.
- **Secretary**, IEEE Montréal Communications Society (ComSoc), R7-Canada. Jan.2013–Present.
- **Secretary**, IEEE Montréal Information Theory Society (ITSoc), R7-Canada. Jan.2013–Present.
 - IEEE Canada Regional Meetings:
 - * IEEE Montréal Section Representative, IEEE R7-Canada Fall Board Meeting, Mississauga, Ontario, Canada, Oct. 18-20, 2013.
 - Record of IEEE ExCom Activities:
 - * Minutes of ExCom Meeting no.1, Jan.2013. Available online: http://drmoe.org/research/IEEE_ExCom_1.pdf.
 - * Minutes of ExCom Meeting no.2, May.2013. Available online: http://drmoe.org/research/IEEE_ExCom_2.pdf.

- * Minutes of ExCom Meeting no.3, Jul.2013. Available online: http://drmo.e.org/research/IEEE_ExCom_3.pdf.
- * Minutes of ExCom Meeting no.4, Aug.2013. Available online: http://drmo.e.org/research/IEEE_ExCom_4.pdf.
- Record of IEEE Board Activities:
 - * Minutes of Board Meeting no.1, Feb.2013. Available online: http://drmo.e.org/research/IEEE_Board_1.pdf.
 - * Minutes of Board Meeting no.2, May.2013. Available online: http://drmo.e.org/research/IEEE_Board_2.pdf.
 - * Minutes of Board Meeting no.3, Sep.2013. Available online: http://drmo.e.org/research/IEEE_Board_3.pdf.

7.2 Editorships

- **Editor**, Journal of Next Generation Information Technology (JNIT), ISSN: 2092-8637 (S. Korea). Jul.2012–Present.
- **Editor**, Advances in Network and Communications Journal (ANC), ISSN: 2093-4734 (USA). Jun.2012–Present.
- **Associate Editor**, IEEE ARUM Newsletter (Canada). Apr.2012–Present.
- **Associate Editor**, IEEE Technology News. Jan.2011–Present.

7.3 TPC Assignments

- **Technical Program Committee**, 26th IEEE Canadian Conference on Electrical and Computer Engineering (CCECE), Regina, SK, Canada, 2013 (ISBN: 978-1-4799-0031-2).
- **Technical Program Committee**, 3rd IEEE International Conference on Communications and Information Technology (ICCIT), Beirut, Lebanon, 2013 (ISBN: 978-1-4673-5306-9).
- **Technical Program Committee**, IEEE World Symposium on Computer Applications and Research (WSCAR), Sousse, Tunisia, 2014 (ISBN: **soon!**).
- **Technical Program Committee**, 3rd IEEE International Conference on Information Technology and e-Services (ICITeS), Sousse, Tunisia, 2013 (ISBN: 978-1-4799-0131-9).
- **Technical Program Committee**, 5th Springer Information and Communication Technologies Conference (ICT Innovations), Ohrid, Macedonia, 2013 (ISBN: 978-3-319-01465-4).

7.4 Referee Activities

- **Research Grants:**
 - Mitacs-Accelerate Funding Program (Canada).
- **Magazines:**

- IEEE Aerospace and Electronic Systems Magazine (AES) – (ISSN: 0018-9251).
- IEEE Vehicular Technology Magazine (VT) – (ISSN: 1556-6072).
- IEEE Potentials Magazine (POT) – (ISSN: 0278-6648).

• **Journals:**

- IEEE Transactions on Intelligent Transportation Systems (ITS) – (ISSN: 1524-9050).
- IEEE Transactions on Signal Processing (TSP) – (ISSN: 1053-587X).
- IEEE Transactions on Multimedia (TMM) – (ISSN: 1520-9210).
- IEEE Transactions on Vehicular Technology (TVT) – (ISSN: 0018-9545).
- IEEE Sensors Journal (SJ) – (ISSN: 1530-437X).
- IEEE Signal Processing Letters (SPL) – (ISSN: 1070-9908).
- IEEE Communications Letters (CL) – (ISSN: 1089-7798).
- IEEE Transactions on Parallel and Distributed Systems (TPDS) – (ISSN: 1045-9219).
- IEEE Transactions on Network and Service Management (TNSM) – (ISSN: 1932-4537).
- EURASIP Journal on Wireless Communications and Networking (JWCN) – (ISSN: 1687-1499).
- Springer Journal of Network and Systems Management (JNSM) – (ISSN: 1064-7570).
- Engineering, Technology and Applied Science Research Journal (ETASR) – (ISSN: 2241-4487).

• **Conference Proceedings, and Tutorial Proposals in Flagship Events:**

- 2014:
 - * IEEE International Conference on Communications (ICC), Sydney, Australia, 2014 (ISBN: **soon!**).
- 2013:
 - * IEEE Global Communications Conference (GLOBECOM), Atlanta, GA, USA, 2013 (ISBN: **soon!**).
 - * 77th IEEE Vehicular Technology Conference (VTC), Dresden, Germany, 2013-Spring (ISBN: **soon!**).
 - * 6th IEEE International Conference on Advanced Technologies for Communications (ATC), Hochiminh City, Vietnam, 2013 (ISBN: **soon!**).
 - * 5th IEEE International Conference on Computational Intelligence and Communication Networks (CICN), Mathura, India, 2013 (ISBN: **soon!**).
 - * 5th Springer-Verlag International Conference on Ad Hoc Networks (AdHocNets), Barcelona, Spain, 2013 (ISBN: **soon!**).
- 2012:
 - * 76th IEEE Vehicular Technology Conference (VTC), Québec City, QC, Canada, 2012-Fall (ISBN: 978-1-4673-1880-8).

- * 75th IEEE Vehicular Technology Conference (VTC), Yokohama, Japan, 2012-Spring (ISBN: 978-1-4673-0989-9).
 - * 4th IEEE Symposium on Industrial Electronics and Applications (ISIEA), Bandung, Indonesia, 2012 (ISBN: 978-1-4673-3004-6).
 - * 4th IEEE International Conference on Cyber-Enabled Distributed Computing and Knowledge Discovery (CyberC), Sanya, China, 2012 (ISBN: 978-1-4673-2624-7).
- 2011:
- * 74th IEEE Vehicular Technology Conference (VTC), San Francisco, CA, USA, 2011-Fall (ISBN: 978-1-4244-8328-0).
 - * 73rd IEEE Vehicular Technology Conference (VTC), Budapest, Hungary, 2011-Spring (ISBN: 978-1-4244-8332-7).
 - * 12th IEEE International Conference on Multimedia and Expo (ICME), Barcelona, Spain, 2011 (ISBN: 978-1-61284-348-3).
 - * 9th IEEE Student Conference on Research and Development (SCOReD), Cyberjaya, Malaysia, 2011 (ISBN: 978-1-4673-0099-5).
 - * 3rd IEEE Symposium on Industrial Electronics and Applications (ISIEA), Langkawi, Malaysia, 2011 (ISBN: 978-1-4577-1418-4).
 - * 3rd IEEE International Congress on Engineering Education (ICEED), Kuala Lumpur, Malaysia, 2011 (ISBN: 978-1-4577-1258-6).
 - * 2nd IEEE International Conference on Electrical Power and Energy Conversion Systems (EPECS), Sharjah, UAE, 2011 (ISBN: 978-1-4577-0804-6).
 - * 2nd IEEE Conference on Open Systems (ICOS), Langkawi, Malaysia, 2011 (ISBN: 978-1-61284-931-7).
 - * 2nd IEEE International Conference on Computer Applications and Industrial Electronics (ICCAIE), Penang, Malaysia, 2011 (ISBN: 978-1-4577-2058-1).
 - * 1st IEEE Symposium on Computers and Informatics (ISCI), Kuala Lumpur, Malaysia, 2011 (ISBN: 978-1-61284-689-7).
- 2010:
- * 72nd IEEE Vehicular Technology Conference (VTC), Ottawa, ON, Canada, 2010-Fall (ISBN: 978-1-4244-3573-9).
 - * 71st IEEE Vehicular Technology Conference (VTC), Taipei, Taiwan, 2010-Spring (ISBN: 978-1-4244-2518-1).
 - * 23rd IEEE Canadian Conference on Electrical and Computer Engineering (CCECE), Calgary, AB, Canada, 2010 (ISBN: 978-1-4244-5376-4).
 - * 4th IEEE International Conference on Signal Processing and Communication Systems (ICSPCS), Gold Coast, Australia, 2010 (ISBN: 978-1-4244-7908-5).
 - * 2nd IEEE International Congress on Engineering Education (ICEED), Kuala Lumpur, Malaysia, 2010 (ISBN: 978-1-4244-7308-3).
- 2009:
- * 70th IEEE Vehicular Technology Conference (VTC), Anchorage, AK, USA, 2009-Fall (ISBN: 978-1-4244-2514-3).
 - * 3rd IEEE International Conference on Signal Processing and Communication Systems (ICSPCS), Omaha, NE, USA, 2009 (ISBN: 978-1-4244-4473-1).

7.5 Other Responsibilities

- **IEEE Certification Program:**

- Examination Item Writer, IEEE ComSoc, Wireless Communication Engineering Technologies Certification (IEEE WCET®). Aug.2010–Present.

- **IEEE Technical Panel:**

- Member, IEEE Spectrum Technology Forecasters Panel. Jan.2013–Present.

- **IEEE Teacher In-Service Program (TISP):**

- IEEE R7-Canada Participant, 2nd TISP Training Workshop, Mississauga, Ontario, Canada, Apr. 28-29, 2011.
- IEEE R7-Canada Participant, 1st TISP Training Workshop, Montréal, Québec, Canada, May. 15-16, 2009.

- **IEEE Graduates of the Last Decade (GOLD):**

- Contributor, IEEE GOLD Program. Sep.2008–Present.

8 Research Programs

8.1 Research Overview

8.2 Research Interests

- **Communications and Network Engineering:**

- Spatio-Temporal Analytics
- Network Theory / Network Science
- Network Deployment / Emulation
- Random Network Geometry
- Complex Communication Networks
- Point Pattern Analysis / Stoc. Inference
- Network QoS / Performance Metrics
- Wireless Channel Characterization
- Green Communications
- Interference / Coexistence
- 4G Cellular Network
- Mobile Relay Network
- WMN (mesh) / WSN (sensor)
- Heterogeneous Network / Femtocells / Small-Cells
- Ad hoc / Multihop Transmission
- Cooperative Wireless Network
- Tactical / Mission Critical Radio Network
- Infrastructure Network Planning / Design

- **Engineering and Pedagogical Philosophy:**

- Teaching Philosophy
- Educational Projects
- Practical / Experimental Learning
- Research Philosophy
- Creativity Enhancement
- Innovation Skillset
- Knowledge Generation
- Research Program Creation
- Engineering Design
- Design Methods
- Feasible Modeling / Analysis
- Problem Solving Techniques

9 Research Results

9.1 Research Grants

9.2 Academic Book

1. **M. Abdulla**, J. V. Svoboda and L. Rodrigues, “Avionics Made Simple,” Dept. of Mechanical and Industrial Engineering, Concordia Univ., Montréal, Québec, Canada, 2005. ISBN: 978-0-88947-908-1. Available online: http://drmo.e.org/research/avionics_made_simple.pdf. (**Adapted as Coursepack** for: ELEC 416, MECH 482 and ENGR 6461)

9.3 Doctoral Dissertation

2. **M. Abdulla**, “On the Fundamentals of Stochastic Spatial Modeling and Analysis of Wireless Networks and its Impact to Channel Losses,” Ph.D. Dissertation, Dept. of Electrical and Computer Engineering, Concordia Univ., Montréal, Québec, Canada, Sep. 2012. Available online (ID Code 974847): <http://spectrum.library.concordia.ca/974847>.

9.4 Peer-Reviewed Journal Papers

3. **M. Abdulla**, “Perspectives for Interference Analysis of Wireless Systems,” *Advances in Network and Communications Journal*, 2013. ISSN: 2093-4734, forthcoming. (**Invited**)
4. **M. Abdulla** and Y. R. Shayan, “Simple and Generic Simulator Algorithm for Inhomogeneous Random Spatial Deployment,” ArXiv Technical Report, pp. 1-13, Mar. 2013. Draft available online (arXiv:1304.3059): <http://arxiv.org/abs/1304.3059>.
5. **M. Abdulla** and Y. R. Shayan, “Large-Scale Fading Behavior for a Multi-Cellular Network with Uniform Spatial Distribution,” *Wiley’s Wireless Communications and Mobile Computing Journal*, 2013 (accepted). ISSN: 1530-8677. Draft available online (arXiv:1302.0891): <http://arxiv.org/abs/1302.0891>.
6. **M. Abdulla** and Y. R. Shayan, “Analytical Coexistence Benchmark for Assessing the Utmost Interference Tolerated by IEEE 802.20,” *Journal of Information Processing Systems*, vol. 7, no. 1, pp. 43-52, Mar. 2011. DOI: 10.3745/JIPS.2011.7.1.043. ISSN: 1976-913X. Available online (arXiv:1306.1907): <http://arxiv.org/abs/1306.1907>.

9.5 Peer-Reviewed Conference Papers

7. **M. Abdulla** and Y. R. Shayan, “On the Peculiarities of Design: An Engineering Perspective,” In *Proc. of the 4th Conference on Canadian Engineering Education Association (CEEA’13)*, pp. 1-5, Montréal, Québec, Canada, Jun. 17-20, 2013. Available online (arXiv:1305.4148): <http://arxiv.org/abs/1305.4148>.
8. **M. Abdulla** and Y. R. Shayan, “Closed-Form Path-Loss Predictor for Gaussianly Distributed Nodes,” In *Proc. of IEEE International Conference on Communications (ICC’10)*, pp. 1-6, Cape Town, South Africa, May 23-27, 2010. DOI: 10.1109/ICC.2010.5502200. ISBN: 978-1-4244-6402-9. Available online (arXiv:1306.0946): <http://arxiv.org/abs/1306.0946>. (**Acceptance Rate \sim 35%**)

9. **M. Abdulla** and Y. R. Shayan, "An Exact Path-Loss Density Model for Mobiles in a Cellular System," In *Proc. of the 7th ACM International Symposium on Mobility Management and Wireless Access (MobiWac'09), held in conjunction with MSWiM'09*, pp. 118-122, Tenerife, Canary Islands, Spain, Oct. 26-30, 2009. DOI: 10.1145/1641776.1641797. ISBN: 978-1-60558-617-5. Available online (arXiv:1306.0944): <http://arxiv.org/abs/1306.0944>. (**Acceptance Rate ~ 30%**)
10. **M. Abdulla**, Y. R. Shayan and J. H. Baek, "Revisiting Circular-Based Random Node Simulation," In *Proc. of the 9th IEEE International Symposium on Communication and Information Technology (ISCIT'09)*, pp. 731-732, Incheon, South Korea, Sep. 28-30, 2009. DOI: 10.1109/ISCIT.2009.5341148. ISBN: 978-1-4244-4521-9. Available online (arXiv:1306.0291): <http://arxiv.org/abs/1306.0291>.
11. **M. Abdulla** and Y. R. Shayan, "Can Research be Taught?," In *Proc. of the 6th Conference on Canadian Design Engineering Network and the Canadian Congress on Engineering Education (CDEN/C2E2'09)*, pp. 288-292, Hamilton, Ontario, Canada, Jul. 27-29, 2009. Available online (arXiv:1306.1288): <http://arxiv.org/abs/1306.1288>.
12. **M. Abdulla** and Y. R. Shayan, "Cellular-Based Statistical Model for Mobile Dispersion," In *Proc. of the 14th IEEE International Workshop on Computer-Aided Modeling, Analysis and Design of Communication Links and Networks (CAMAD'09)*, pp. 1-5, Pisa, Tuscany, Italy, Jun. 12, 2009. DOI: 10.1109/CAMAD.2009.5161465. ISBN: 978-1-4244-3532-6. Available online (arXiv:1306.0162): <http://arxiv.org/abs/1306.0162>. (**Acceptance Rate ~ 35%**)
13. **M. Abdulla** and Y. R. Shayan, "Harnessing Simultaneously the Benefits of UWB and MBWA: A Practical Scenario," In *Proc. of the 22nd IEEE Canadian Conference on Electrical and Computer Engineering (CCECE'09)*, pp. 508-513, St. John's, Newfoundland and Labrador, Canada, May 3-6, 2009. DOI: 10.1109/CCECE.2009.5090185. ISBN: 978-1-4244-3509-8. Available online (arXiv:1305.7250): <http://arxiv.org/abs/1305.7250>.
14. Y. R. Shayan and **M. Abdulla**, "Design Based Teaching for Science and Engineering Students," In *Proc. of the 5th Conference on Canadian Design Engineering Network (CDEN'08)*, pp. 1-4, Halifax, Nova Scotia, Canada, Jul. 27-29, 2008. Available online (arXiv:1306.1604): <http://arxiv.org/abs/1306.1604>.

9.6 Technical Talks

15. **M. Abdulla**, "Quantifying the Channel Loss of a Gaussian Random Network," *Joint Workshop on Control and Communications (JWCC'10)*, McGill University, Montréal, Québec, Canada, May 27-28, 2010. (**Invited**)
16. **M. Abdulla** and Y. R. Shayan, "On the Influence of Terminals Spatial Location toward QoS," *The Centre for Advanced Systems and Communications Research Workshop (SYTA-Com'09)*, École de technologie supérieure (ÉTS), Montréal, Québec, Canada, Apr. 28, 2009.
17. Y. R. Shayan and **M. Abdulla**, "Terrestrial Wireless Communications," *NATO Research and Technology Organisation (RTO), Applied Vehicle Technology-Health Management for Munitions Task Group (AVT-160)*, CD-ROM, Montréal, Québec, Canada, Oct. 14-16, 2008. (**Invited**)

9.7 Technical Reports

18. **M. Abdulla**, “Digital Telecommunications: A Practical Engineering Approach,” Technical Report: TR-2007-14, Dept. of Electrical and Computer Engineering, Concordia Univ., Montréal, Québec, Canada, pp. 1-74, Oct. 2007. (Prof. Yousef. R. Shayan)
19. **M. Abdulla**, “Simulation of (2,1,2) Systematic Convolutional Code using HD-VA,” Technical Report: TR-2007-13, Dept. of Electrical and Computer Engineering, Concordia Univ., Montréal, Québec, Canada, pp. 1-43, Apr. 2007. (Prof. Ali Ghrayeb)
20. **M. Abdulla**, “Simulation of (8,4) Systematic and (24,12) Golay Codes in AWGN Channel,” Technical Report: TR-2007-12, Dept. of Electrical and Computer Engineering, Concordia Univ., Montréal, Québec, Canada, pp. 1-43, Mar. 2007. (Prof. Ali Ghrayeb)
21. **M. Abdulla**, “A Mobile Device with QPSK Signaling in a Flat Slow Rayleigh Fading Channel,” Technical Report: TR-2007-11, Dept. of Electrical and Computer Engineering, Concordia Univ., Montréal, Québec, Canada, pp. 1-40, Mar. 2007. (Prof. Yousef R. Shayan)
22. **M. Abdulla**, “History and Applications of ECC: Over 50-years of Research and Innovation,” Technical Report: TR-2007-10, Dept. of Electrical and Computer Engineering, Concordia Univ., Montréal, Québec, Canada, pp. 1-14, Jan. 2007. (Prof. Ali Ghrayeb)
23. **M. Abdulla**, “Simulation of a Digital Communication System using PSK/QAM Modulation Schemes,” Technical Report: TR-2006-09, Dept. of Electrical and Computer Engineering, Concordia Univ., Montréal, Québec, Canada, pp. 1-35, Jun. 2006. (Prof. Ali Ghrayeb)
24. **M. Abdulla**, X. Jia, E. Torres, B. Tudor, and T. Xu, “Preliminary Design for the Bell Helicopter Textron M-412 Composite Tailboom,” Technical Report: TR-2005-08, École Polytechnique and Bell Helicopter Textron, Montréal, Québec, Canada, pp. 1-164, Apr. 2005. (Academic-Industry Partnership)
25. **M. Abdulla**, “Unconstrained and Constrained Optimization Techniques,” Technical Report: TR-2004-07, Dept. of Electrical and Computer Engineering, McGill Univ., Montréal, Québec, Canada, pp. 1-80, Dec. 2004. (Prof. Hannah Michalska)
26. **M. Abdulla**, “Design of a Satellite Attitude Control System,” Technical Report: TR-2004-06, Dept. of Electrical and Computer Engineering, Concordia Univ., Montréal, Québec, Canada, pp. 1-59, Dec. 2004. (Prof. Khashayar Khorasani)
27. **M. Abdulla**, “Simulation of a Frequency Division Multiplexer,” Technical Report: TR-2003-05, Dept. of Electrical and Computer Engineering, Concordia Univ., Montréal, Québec, Canada, pp. 1-34, Mar. 2003. (Prof. Wei-Ping Zhu)
28. **M. Abdulla**, “Fabrication of Different Size Transistors on a Si Wafer using CMOS Technology,” Technical Report: TR-2002-04, Dept. of Electrical and Computer Engineering, Concordia Univ., Montréal, Québec, Canada, pp. 1-50, Apr. 2002. (Mr. Radu M. Marinescu, M.Eng. - Manager at PerkinElmer)
29. **M. Abdulla**, “Interpretation of the Discrete Hartley Transform using Algebraic Integers Scheme,” Technical Report: TR-2001-03, Dept. of Electrical and Computer Engineering, Concordia Univ., Montréal, Québec, Canada, pp. 1-24, Dec. 2001. (Prof. William Lynch)

30. **M. Abdulla**, “Analysis of a SVPWM Scheme for a Three-Leg VSI using FPGA Technology,” Technical Report: TR-2001-02, Dept. of Electrical and Computer Engineering, Concordia Univ., Montréal, Québec, Canada, pp. 1-104, May. 2001. (Prof. Geza Joos and Dr. Su Chen)
31. **M. Abdulla**, “Hardware Design of a Multiplexer using CMOS Pass-Transistor Logic Technology,” Technical Report: TR-2001-01, Dept. of Electrical and Computer Engineering, Concordia Univ., Montréal, Québec, Canada, pp. 1-52, Apr. 2001. (Prof. Chunyan Wang)

10 Teaching Qualifications

10.1 Summary of Teaching Experience

10.2 Teaching Interests

10.3 Teaching Training and Workshops

10.4 Capacity to Transfer Knowledge

10.5 Sample of Student Testimonials

- *“I just wanted to take a moment to express my gratitude for your effort in tutoring me and for preparing me to the final exam in signals-and-systems course. During the course I have changed three tutors until I met you. Unlike the other tutors, your way of teaching made this complex course very clear and understandable. You were my last chance and I was pretty much sure I will fail. Nonetheless, I have passed the course with good grade. Without your help it wouldn’t happen. Thank you very much and I hope you will be available for tutoring me again in the future.”*

– *Shahar Gour, B.Eng. Student*

- *“Mouhamed has a way of identifying my weaknesses quickly. He then adapts his teaching method to me, rather than re-presenting the same material in the same way that it was in class.”*

– *Mike McAlpine, B.Eng. Student*

- *“I have never had any other tutor as down to earth and as friendly as Mr. Abdulla. His knowledge in the subject matter is excellent; he can prove everything and anything! He provides a relaxed learning atmosphere and will make sure you understand the subject before you leave. After all is done he will even provide you with after hours support if need be. Great guy!”*

– *Michael Kawall, B.Eng. Student*

- *“My tutor explained the material in a way that I could understand and provided additional examples to make sure I understood. He was very helpful, patient, and friendly. He showed me how to find perspective in approaching the problem and how to build on previous work. I was encouraged to ask a lot of questions. The best part was that he made me feel smart!!”*

– April B., B.Comm. Student

11 Other Activities

11.1 Mentorship Program

11.2 Canadian Forces

12 Personal Data

- Citizenship: Canadian.
- Languages: Fully fluent in English and French.

13 Pertinent Skills

13.1 Programming/Computer Skills

- **Assembly Language:**
 - Motorola 68000
- **High-Level Languages:**
 - C/C++
 - MATLAB®
 - HTML
 - L^AT_EX, T_EX/L^AT_EX
- **Operating Systems:**
 - Windows 95, NT, 98, 2000, ME, XP, Vista, 7, 8, RT
 - MS-DOS
 - OS/2
 - UNIX

13.2 Telecommunication Skills

13.3 Communicating Skills

13.4 Interpersonal Skills

14 References

- Prof. Yousef R. Shayan, Concordia University (Ph.D. Advisor)

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