

# MOHAMAD HAIDAR

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## PROFILE

Highly qualified and tenacious professional armed with broad-based background and skills in the areas of teaching, classroom control, lesson planning, curriculum planning, student assessment/evaluation, research and many more. Displays outstanding ability to plan, coordinate, and implement practices and procedures to bring significant improvements in students and processes towards the successful attainment of goals. Primarily striving to understand students' needs and provide them exceptional results through a cognitively flexible and positive approach. Determined to implement earned skills and knowledge for the rapid growth of the prospective institution by working effectively and consistently with the faculty and department. Strong ties with leading tech companies in the industry that will be put to use to benefit students.

## EDUCATION AND CERTIFICATION

**Ph.D. in Applied Science** | University of Arkansas at Little Rock, Little Rock, AR **Dec. 2007**  
**Dissertation Title:** "Load-Balancing and Channel Assignment in IEEE 802.11 Indoor Wireless LANs" GPA: 4.00/4.00

**M.S. in Telecommunication** | Roosevelt University, Chicago Illinois **May 2002**  
**Thesis Title:** "Examining the Performance of Voice Packets over IP based Local Area Networks" GPA: 3.92/4.00

**B.E. in Electrical Engineering** | Lebanese American University, Beirut, Lebanon **July 2000**  
**Project Title:** "Location of Transmission Lines Faults using Digital Fault Recorders"

## RESEARCH INTERESTS

- Bandwidth Allocation in Satellite Communication Systems
- Sensor Networks
- Cognitive Wireless Mesh Networks
- Ad Hoc Networks
- WIFI, WLAN, IEEE 802.11 a/b/g/ac/ad/ah
- Network Planning and Optimization (Wireless And Cellular Networks)
- Distributed Antenna Systems and Small Cells

## HONORS AND AWARDS

- UALR Graduate Institute of Technology GA Award, 2003-2007.
- UALR Graduate Institute of Technology Scholarship, 2003-2007.
- UALR Donaghey Cybercollege Award for overall 4.0 GPA, 2005.
- UALR Donaghey Cybercollege Award for overall 4.0 GPA, 2004.
- Distinction Award GPA, Roosevelt University, 2002.
- GA Award, Roosevelt University, 2000-2002.

## EXPERTISE AND QUALIFICATIONS

- **Ph.D.** in Applied Science (Wireless Communications), **M.S.** in Telecommunications, and **B.Eng.** in Electrical Engineering.
- Ability to thrive under pressure and handle multiple tasks simultaneously; Great presentation and teaching skills.
- Deliver lectures, seminars and tutorials; Present lessons in a comprehensive manner and use visual/audio means to facilitate learning. Provide individualized instruction to each student by promoting interactive learning.
- Create and distribute educational content (notes, summaries, assignments etc.)
- Assess and record students' progress and provide grades and feedback.
- Collaborate with other teachers, parents and stakeholders and participate in regular meetings.
- Plan and execute educational in-class and outdoor activities and events.
- Observe and understand students' behavior and psyche and report suspicions of neglect, abuse etc.
- Develop and enrich professional skills and knowledge by attending seminars, conferences etc.
- Develop and implement new methods of teaching to reflect changes in research.
- Undertake personal research projects and actively contributing to the institution's research profile.
- Completing continuous professional development (CPD) and participating in staff training activities.

- Work with colleagues to develop or modify the curriculum for a degree or certificate program involving a series of courses. Advise students about which classes to take and how to achieve goals.
- Establish collaborative links outside the university with industrial, commercial and public organizations.

## ACADEMIC EXPERIENCE

**Benedictine University/University of the People | Adjunct Professor (Computer Science Dept.)** **Aug. 2017-Dec. 2017**

### **Key Responsibilities and Achievements:**

- Taught and motivated students to excel in their academics. Monitored students' progress throughout the courses (CMSC365/366- Computer Networks and Data Communications with Lab) and MATH095- Algebra.
- Demonstrated commitment to the institutional mission, goals, and objectives.
- Developed lesson plans, instructional materials, Wireshark labs and other strategies to ensure that every student has a thorough knowledge of the subject.
- Lead faculty training on course material and Learning Management System.
- Held and participated in faculty meetings on a regular basis to discuss department goals and objectives.
- Proficient and expert in the use of Learning Management Systems such as Moodle and others.

**Varsity Tutors, Tutorme, Chegg, Wyzant | Math Tutor (Online & In-person)** **Jul. 2014- Present**

### **Key Responsibilities and Achievements**

- Tutor Algebra, Arithmetic, Geometry, Trigonometry, and Calculus from 5<sup>th</sup> grade to college level.
- Address students' weak areas and develop strategies to improve understanding and self-sufficiency.
- Prepare study lessons, practice worksheets, and sample exams tailored specifically to the student.
- Guaranteed increase in student overall grade between 10%-20%.
- Maintain a customer satisfaction rating of 98%-100%.

**DeVry University | Adjunct Professor in the College of Engineering and Information Science** **Sep. 2010-Jun. 2016**

### **Key Responsibilities and Achievements:**

- Taught and motivated students to excel in their academics. Monitored students' progress throughout the courses (NETW360- Wireless Technologies and Services with lab, NETW320- Converged Networks with Lab, and NET561/562/563/589-Wireless Technologies (Graduate level), MATH062- Beginning Algebra, MATH114-Algebra for College Students).
- Designed course material (curriculum development) and assisted other professors in teaching and motivating students.
- Assisted students achieve their academic goals and objectives. Demonstrated teaching excellence.
- Lead several training sessions for new hires on our Learning Management System.
- Interviewed potential candidates for the College of Engineering.
- Ensure compliance of university policy and procedure guidelines. Document all academic processes.

**University of Quebec:Ecole de Technologie Superieure | Post-Doctoral Fellow** **Feb.2008-Jan. 2009**

### **Key Responsibilities and Achievements:**

- Proposed a PHY layer and MAC layer architecture for Cognitive Wireless Mesh Networks (CWMNs).
- Analyzed QoS Continuity Protection models for CWMNs.
- Simulated several resource management algorithms using OPNET.
- Developed a power management approach for secondary users to join a primary user network.
- Provided technical assistance and direct supervision for Ph.D. and M.S. students.
- Presented my progress in front of the professors involved in the CWMN project monthly.

**University of Arkansas at Little Rock | Research Assistant** **Aug. 2003-Dec. 2007**

### **Key Responsibilities and Achievements:**

- Simulated the effect of channel assignment and signal coverage in indoor and outdoor environments using Matlab, LINGO, OPNET, and Wireless InSite by Remcom.
- Simulated indoor and outdoor wireless channels using PROP Lab simulation tool by Elektrobit.
- Modeled Octagonal waveguide heating applicator for high-power microwave heating applications using HFSS.
- Modeled a strip-line fed microstrip antenna using HFSS
- Modeled a horn antenna using HFSS
- Modeled the rectangular patch antenna using HFSS
- Modeled the TM<sub>010</sub> cavity resonator: Parameterization and optimization using HFSS.

**University of Arkansas at Little Rock | Teaching Assistant**

**Aug. 2003-Dec. 2007**

**Key Responsibilities and Achievements:**

Developed and taught the following courses and labs to undergraduate and graduate students and graded Labs and assignments

- Mobile Multimedia Internet
- Antenna Theory and Design
- Electromagnetics
- Introduction to Wireless Communications
- Senior Capstone Design I&II
- Electrical Circuits I & II
- Programmable Logic Circuits

Provided training for undergraduate and graduate students on the following software tools:

- Designed and simulated several antennas using HFSS.
- Simulated several network topologies using OPNET.
- Performed indoor and outdoor signal propagation analysis using Wireless InSite by Remcom.

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**Roosevelt University | Graduate Assistant and Tutor**

**Aug. 2000-May 2002**

**Key Responsibilities and Achievements:**

- Taught students the following; Local Area Networks, Wireless Communications Systems, Network Design and Analysis.
- Assisted students in the Telecommunications lab,
- Tutored undergraduate and graduate students in various academic disciplines including Math, Physics, and Statistics.
- Provided in-depth feedback on tutoring sessions and reporting on students' progress.

**WORK EXPERIENCE**

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**Black and Veatch | Lead RF Engineer**

**Jun. 2019-Present**

**Key Responsibilities and Achievements:**

- Design, plan, and optimize PtMP WiMax/LTE links using EDX for a Field Area Network (FAN) project of all upstate NY.
- Perform pre-installation surveys and radio path surveys.
- Lead field testing and construction efforts for the WiMax BSs and LTE eNBs.
- Meeting weekly with the client, along with Project Managers, to provide feedback on RF progress.
- Coordinate tasks among path validation providers (Tilson, Council Rock, Airosmith).
- Troubleshoot construction and radio network design issues in the field.
- Write Methods of Procedures (MOPs).
- Leading a team of 4 RF Engineers (3 Jr. and 1 Sr.)
- SME in WiFi including 802.11ax (WIFI 6-unlicensed 6 GHz)
- Member of the multi-stakeholders group of WiFi 6.

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**Engineering Wireless Services | Principal RF Engineer**

**Dec. 2017-Apr. 2019**

**Key Responsibilities and Achievements:**

- Utilized IBWAVE to create new designs and evaluate vendor designs.
- Experienced in various IB DAS architecture solutions: Public Safety DAS, DRAN, Cel-Fi, Ericsson DOT, Commscope ION-E, SpiderCloud, SoLiD (Express and Alliance), and others.
- Utilized my knowledge in GSM, LTE, UMTS and microwave to contribute in network design.
- Proficient and experienced in RF tools such as scanners (PCTel), Spectrum Analyzers (Anritsu), and post-processing software (Wind Console).
- Performed and lead drive test teams (Indoor/Outdoor) to collect QoS, benchmarks, and CW data.

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**Global Patent Solutions | Research Analyst**

**Jul. 2016-Oct. 2017**

**Key Responsibilities and Achievements:**

- Communicate with clients to effectively review and gain an understanding of technical aspects of client inventions and technical search concepts.
- Perform extensive database research into US patents, Published US Patent Applications, International (PCT/WO) Publications, Foreign Patents, Foreign Published Applications, and Published Technical Literature.
- Perform PCT search, examination, and written opinions.
- Review, gather, and analyze technical literature.
- Prepare detailed reports regarding research findings in a timely and high-quality manner.

**Mobinets, Mobile Network Solutions | Product Manager**

Mar. 2012-Aug. 2015

**Key Responsibilities and Achievements:**

- Oversaw the planning and execution of R&D related projects.  
Created product lines' roadmaps established R&D department structure, personnel and budget according to management-approved roadmaps and lead the R&D team.
- Participated in the enhancement of an existing Radio and Microwave tool, NEP, (experienced in Atoll, Pathloss, iQlinkXG, PQM) and start the development of new tool in the SONET/SDH/OTN field. Planning, designing, and optimizing algorithms related to Frequency Planning, interference analysis, and Transmit Power optimization in MW. Moreover, modeled equipment and port configuration for Alcatel-Lucent and Huawei equipment. Performed chromatic dispersion, Polarization Mode Dispersion, OSNR, Power Budget, Link Budget calculation analysis. Full understanding of ITU norms (ITU G.821/826/828 P.530-9/12/13/14, P.837-3/5/6/7) related to Rain intensity/Rain loss, E-to-E performance calculations, propagation data and prediction methods used in MW planning as well as ITU norms (ITU G.651/652/655/...) related to Fiber cabling, attenuation, Link budget, Power Budget, OSNR, Chromatic Dispersion, and Polarization Mode Dispersion.
- Planned and optimized huge Microwave networks at customer premises, such as Vodafone UK, Wataniya Kuwait, Meditel/INWI Morocco, IndoSat Indonesia, OCI Kenya.

**University of Quebec: Ecole de Technologie Superieure & Ultra Electronics Inc. | Wireless Network Simulations Specialist**

Oct. 2010-Feb. 2012

**Key Responsibilities and Achievements:**

- Simulated different wireless technologies using Qualnet (Exata) for various military wireless infrastructures.
- Responsible for defining specifications, network components modeling, and documenting.
- Managed a small team of engineers and participated in implementing new PHY/MAC protocols that meet military constraints.

**Ecole de Technologie Superieure and Intelligent Software Radio Inc. | Wireless Research Engineer**

Jul. 2009-Oct. 2010

**Key Responsibilities and Achievements:**

- Developed a dynamic bandwidth allocation algorithm in a satellite communication network (Centralized and Distributed approaches).
- Implemented algorithm in NS-2 simulator. Tested and demonstrated the full intelligent bandwidth allocation functionalities on a testbed platform and simulator. Technically guided project team and defined strategic goals.
- Maintained a balanced portfolio of existing and new tasks.
- Directed project management responsibilities for systems project.
- Prepared technical goals for the project team, reviewed the progress, and participated in the relevant parts of associates' performance reviews. Participated in writing fund proposals for the project milestones.

**UALR-ALTEL-MOTOROLA Project | RF Engineer**

Aug.2006-Jul. 2007

**Key Responsibilities and Achievements:**

- Analyzed GSM and UMTS trials on university campus (indoor and outdoor). Simulated real-time indoor and outdoor environments and what-if scenarios using OPNET, MATLAB, and RF propagation tools.
- Performed RF coverage predictions and RF capacity planning for indoor and outdoor environments. Provided feedback concerning network optimization procedures (optimal channel assignment, optimal site selection, better antenna configurations).
- Lead and trained more than 20 students during site-surveying tests everyday (different building materials, several floors, etc...). Participated in designing, documenting and testing of digital radio system components
- Collected, organized, and analyzed data collected from site-survey tests using MS Excel sheets. Submitted proposals and reports to higher management for further study.

**IBM supplemental (Coop) | Development Engineer in Blade Server Development**

May 2006-Aug. 2006

**Key Responsibilities and Achievements:**

- Developed new concepts for applying wireless technology to IBM eServer products.
- Conducted brief indoor RF site-surveying to asset the environment.
- Assisted Senior Technical Staff Member in developing several invention disclosures.

## CONSULTING EXPERIENCE

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**BluNexus Inc. | RF Consultant (Microwave Backhaul Planning)**

**Nov. 2015-Jul. 2016**

**Key Responsibilities and Achievements:**

- Planned, designed and optimized RF Microwave Backhaul networks for various operators' networks using PQM Tool (Developed by BluNexus).
- Engaged in technical debates with current and prospective customers about enhancing and developing the current tool. Researched competitor's products and new cutting edge technologies to enhance current BluNexus product.

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**SAR Insight & Consulting | Sr. Research Analyst**

**Aug. 2015-Jun. 2016**

**Key Responsibilities and Achievements:**

- Researched and analyzed new technologies, such as IEEE 802.11ac/ad/ay/ah and 5G to present in a market analysis report. Conducted primary and secondary research. Collected and analyze quantitative research.
- Interpreted data, formulated reports and made recommendations.
- Evaluated key data to ensure that data on the releases are accurate and the angle of the release is correct.
- Remained fully informed on market trends, other parties' researches and implement best practices.

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**HighTech Solutions | Patent Analyst**

**Apr.2008-Aug. 2008**

**Key Responsibilities and Achievements:**

- Provided technical and intellectual property consulting in the fields of Wireless Networking, Cellular Communications, IT, Telecommunications, and many others.
- Evaluated and analyzed patent infringement, patent applications, and quality of claims.
- Developed business cases for portfolios of interest.

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## PROFESSIONAL AFFILIATIONS

IEEE Member, WiFi Groups, Telecommunications groups

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## PUBLICATIONS

### Market Research Reports

1. **M. Haidar**, "WiGig Technology, Chipsets, and Future Market Adoption," April 5, 2016.

### Journal Papers

1. J. Kouraogo, Z. Dziong, **M. Haidar**, and F. Gagnon, "Rate Management in Multi-User Detection based MAC for Ad Hoc Networks," *Ad Hoc Networks Journal*, Elsevier, Vol. 11, Issue 1, pp. 1-18, January 2013.
2. **M. Haidar**, H. M. Al-Rizzo, R. Akl, and Z. Elbazzal, "The Effect of an Enhanced Channel Assignment Algorithm in an IEEE 802.11 WLAN," *World Scientific and Engineering Academy and Society*, WSEAS, Vol. 8, Issue 12, December 2009.
3. R. Akl, P. Kadiyala, and **M. Haidar**, "Non-Uniform Grid-Based Coordinated Routing in Wireless Sensor Networks," *Journal of Sensors*, Hindawi, Volume 2009, Article ID 491349, 11 pages.
4. **M. Haidar**, H. M. Al-Rizzo, R. Akl, and Y. Chan, "User-Based Channel Assignment in a Load-Balanced IEEE 802.11 WLAN," *International Journal of Interdisciplinary Telecommunications and Networking*, Vol.1, Issue 2, April-June, 2009, pp. 66-81.
5. Z. Elbazzel, M. Kadoch, A. Basili, **M. Haidar**, and F. Gagnon, "A Quality of Service Driven Approach for Clustering in Mobile Ad hoc Networks Based on Metrics Adaptation: Looking Beyond Clustering," *Journal of Communication Software and Systems*, Vol. 6, Issue 6, February 2009.

### Refereed Conference Papers

1. J. Kouraogo, Z. Dziong, **M. Haidar**, and F. Gagnon, "A Cross-Layer MAC/PHY Framework for PER Guarantee in Multiuser Detection Based Ad Hoc Networks," *35th IEEE Sarnoff 2012* May 21-22, 2012, Newark, NJ, USA.
2. R. Akl, K. Pasupathy, and **M. Haidar**, "Anchor Nodes Placement for Effective Passive Localization," *International Conference on Selected Topics in Mobile and Wireless Networking, iCOST'11*, Oct. 10-12, 2011, Shanghai, China.
3. R. Akl, P. Kadiyala, and **M. Haidar**, "Non-Uniform Grid-Based Coordinated Routing in Wireless Sensor Networks," *9th IEEE Malaysia International Conference on Communications, MICC'09*, Dec 14-17, 2009, Kuala Lumpur, Malaysia.
4. **M. Haidar**, Z. Dziong, and M. Msakni, "Power Management and Bandwidth Allocation in a Cognitive Wireless Mesh Network," *7th Annual conference on Communication Networks and Services Research Conference, CNSR'09*, May 11-13, 2009, Monton, New Brunswick, Canada.

5. **M. Haidar**, H. M. Al-Rizzo, R. Akl, Y. Chan, and M. Bouharras, "Throughput Validation of an Advanced Channel Assignment Algorithm in an IEEE 802.11 WLAN," *International Conference on Communication Software and Networks, ICCSN'09*, February 20-22, 2009, Chengdu, Sichuan, China.
6. M. Bouharras, Z. Dziong, F. Gagnon, and **M. Haidar**, "Multi-Objective Scheduling for MUD Based Ad-Hoc Networks," *4th International Wireless Internet Conference, WICON*, November 17-19, 2008, Maui, HI, USA.
7. M. Bouharras, Z. Dziong, F. Gagnon, and **M. Haidar**, "Scheduling Optimization in Multiuser Detection based MAC Design for Ad-Hoc Networks," *4th IEEE International Workshop on Performance and Management of Wireless and Mobile Networks, P2MNET*, October 14-17, 2008, Montreal, QC, Canada.
8. **M. Haidar**, R. Akl, H. M. Al-Rizzo, and Y. Chan, "Enhanced Channel Assignment in an IEEE 802.11 Balanced WLAN Based on Signal-to-Interference Ratio," *21<sup>st</sup> IEEE Canadian Conference on Electrical and Computer Engineering*, May 4-7, Niagara Falls, ON, Canada 2008.
9. H. M. Al-Rizzo, **M. Haidar**, R. Akl, and Y. Chan, "Enhanced Channel Assignment and Load Distribution in IEEE 802.11 WLANs," *IEEE International Conference on Signal Processing and Communications*, 24-27 November, 2007, Dubai, UAE.
10. **M. Haidar**, H. M. Al-Rizzo, R. Akl, and Y. Chan, "Channel Assignment and Load Distribution in a Power-managed WLAN," *18th Annual IEEE International Symposium on Personal, Indoor and Mobile Radio Communications*, 3-7 September, 2007, Athens, Greece.
11. **M. Haidar**, R. Akl, H. M. Al-Rizzo, Y. Chan and R. Adada, "Optimal Load Distribution in Large Scale WLAN Networks Utilizing a Power Management Algorithm," *IEEE Sarnoff Symposium 2007*, April 30-May 2<sup>nd</sup>, 2007, Princeton, NJ, USA.
12. H. M. Al-Rizzo, A. Al Habsi, **M. Haidar** and R. Adada, "Design, analysis and optimization of a hexagonal cavity applicator at 915 MHz," *The 39<sup>th</sup> Annual Symposium, International Microwave Power Institute*, 13-15 July, 2005, Seattle, USA.
13. H. M. Al-Rizzo, A. Al Habsi, **M. Haidar** and R. Adada, "Finite-difference time domain modeling of waveguide-coupled resonators using locally conformal overlapping grids," *The Second IEEE GCC Conference*, 23-25 November, 2004, Manama, Bahrain.
14. H. M. Al-Rizzo, A. Al Habsi, **M. Haidar** and R. Adada, "An interdisciplinary simulation based laboratory for undergraduate wireless communications education," *The Second IEEE GCC Conference*, 23-25 November, 2004, Manama, Bahrain.
15. H. M. Al-Rizzo, A. Al Habsi, **M. Haidar**, and R. Adada, "Multiple Access Interference Issues in 3G WCDMA Cellular Systems," *1st International Conference on Wireless and Optical Communications Networks*, 7-9 June, 2004, Muscat, Oman.
16. **M. Haidar**, R. Alrifai, and J. Kenevan "Examining the Performance of Voice Packets over IP based Local Area Networks," *IASTED*, 4-6 November, 2002, Cambridge, USA.

#### Book Chapters

1. R. Akl, Y. Saravanos, and **M. Haidar**, "Hybrid Approach for Energy-Aware Synchronization in Sensor Networks," *Sustainable Wireless Sensor Networks*, Intech, 2011.

#### GENERAL SKILLS AND COMPETENCIES

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- Achieving goals, creative/strategic thinking and problem solving.
- Excellent ethics, hardworking, focus minded and sound organizational ability.
- Possesses a positive, mature and professional attitude. Excellent sense of initiative, tidiness, adaptability and networking. Ability to communicate effectively and build relationships with clients and colleagues.
- Excellent clients' service manner and interpersonal skill. Highly motivated to learn more.
- Excellent organization and time management skills demonstrated by ability to work both autonomously and as a positive team player. Detail and result oriented.
- Computer Skills: RF Engineering Software Tools- iBwave, PCTel Scanners, Fieldfox Spectrum Analyzer, BTS Master Spectrum analyzer, AirMagnet, NetSurveyor, inSSIDer, Atoll (MW), Pathloss, OPNET, Wireless InSite (Indoor/Outdoor Propagation Tool, similar to EDX and planet EV) by Remcom, Qualnet (EXATA), PropLAB by Elektrobit, ATDI (RF Simulation tool), Mobinets NEP (Microwave Module).
- Programming Languages- MATLAB, Turbo Pascal, HTML, working knowledge in Visual Basic, and LINGO by LINDO systems.
- Technical Knowledge of (but not limited to)- LTE, WiMAX, 3GPP, GPRS, GSM, Ad Hoc, Wireless Mesh Networks(802.11a/b/g/n/ac/ad/ay), Cognitive Radio Systems, Bluetooth SIG Technology, Sensor Networks