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Khalifa University of Science, Technology & Research, Abu Dhabi, UAE

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PROFILE

I hold an associate professor position in the department of ECE at Khalifa University. Also, I hold an affiliate assistant professor in the Concordia Institute for Information Systems Engineering at Concordia University, Montreal, Canada. Moreover, I hold an affiliate associate professor in the electrical department at École de technologie supérieure (ETS), Montreal, Canada. I received my Ph.D. in ECE from Concordia University. My PhD thesis was on “*Intrusion Detection System (IDS)*” using Game Theory and Mechanism Design. I worked as a postdoctoral on “*Security issues and resource management for virtual private networks*” at ETS. I have co-supervised to accomplishment one Post-Doctoral and two PhD at the *ETS*, and seven master students at Khalifa University, Lebanese American University (LAU), and Concordia University. I am officially co-supervising three PhD students at the *ETS* and *Concordia University*. I am senior member at IEEE and editor of the IEEE communication letters. Moreover, I am a TPC member of several prestigious conferences and reviewer of several highly ranked journals. Also, I co-chaired several tracks. In addition, I am member of several admin and university committees and founder of several contests. Additionally, I was the organization chair of several national and regional contests.

RESEARCH INTERESTS

- Applications of Mechanism Design & Game Theory
- Web Services: Security & Game Theory
- Resource Management: Virtual Private Networks and Wireless Networks
- Mobile Ad-hoc Network & VANET Security
- Network Security: Intrusion Detection Systems, Botnets & Honeypots.

TEACHING INTERESTS

- Advanced computer networks
- Computer Security and network security
- Other courses that I previously taught (Listed below)

EDUCATION

Concordia University	PhD in Electrical and Computer Engineering	2004 – 2008
Lebanese American University	Masters degree in Computer Science	2001 – 2003
Beirut Arab University	B.S in Computer Science	1996 – 2000

PUBLICATIONS (my Masters, PhD. *students and post-doctoral fellow are underlined*)

Book Chapter:

- 1- H. Otrok, M. Mehrandish, C. Assi, P. Bhattacharya, M. Debbabi. *Mobile Security: Game Theory*. In the Encyclopedia of Wireless and Mobile Communications Book, CRC Press, Taylor & Francis Group, 2007.

International Journals (Impact factor 2013):

- 2- H. Jebbaoui, A. Mourad, H. Otrok, R. Haraty, *Semantics-Based Approach for Detecting Flaws, Conflicts and Redundancies in XACML Policies*. Accepted at the **Computers and Electrical Engineering**, Dec. 2014, Elsevier. (Impact Factor: 0.992, 5-year: 1.008).
- 3- E. Khosrowshahi Asl, J. Bentahar, H. Otrok, R. Mizouni, *Efficient Community Formation for Web Services*. Accepted at **IEEE Transactions on Services Computing**, Feb. 2014, IEEE. (Impact factor: 1.985)
- 4- O. Abdel Wahab, H. Otrok, A. Mourad, *A Dempster-Shafer based Tit-for-Tat Strategy to Regulate the Cooperation in VANET using QoS-OLSR Protocol*. In the **Wireless Personal Communications**, Vol. 75(3), April 2014, Springer. (Impact Factor: 0.979, 5-year: 0.939)
- 5- N. Moati, H. Otrok, A. Mourad, Reputation-Based Cooperative Detection Model of Selfish Nodes in Cluster-based QoS-OLSR Protocol. In the **Wireless Personal Communications**, Vol. 75(3), April 2014, Springer. (Impact Factor: 0.979, 5-year: 0.939)
- 6- R. Estrada, H. Otrok, Z. Dziong, H. Barada, *Spectrum Sharing Model for OFDMA Macro-Femtocell Networks*. Accepted at the special issue “*Dynamism and Mobility Handling in Mobile and Wireless Networking*” of the **International Journal of Ad hoc and Ubiquitous Computing**, March 2014, Inderscience. (Impact Factor: 0.900, 5-year 0.981)
- 7- A. Al Dhanhani, R. Mizouni, H. Otrok, A. Al-Rubaie, *A Game Theoretical Model for Collaborative Groups in Social Applications*. In the **Journal of Expert Systems & Applications**, Feb. 2014, Elsevier. (Impact factor: 1.965, 5-year: 2.254)

- 8- E. Khosrowshahi Asl, J. Bentahar, R. Mizouni, B. Khosravifar, H. Otrok, *To Compete or to Cooperate? This is the Question in Communities of Autonomous Services*. In the **Journal of Expert Systems & Applications**, Feb. 2014, Elsevier. (Impact factor: 1.965, 5-year: 2.254)
- 9- O. Abdel Wahab, H. Otrok, A. Mourad, *A Cooperative Watchdog Model Based on Dempster-Shafer for Detecting Misbehaving Vehicles*. In the **Computer Communications Journal**, Jan. 2014, Elsevier. (Impact Factor: 1.352, 5-year: 1.330)
- 10- H. Marshoud, H. Otrok, H. Barada, *Macrocell-Femtocells Resource Allocation with Hybrid Access Motivational Model*. In the **Physical Communications**, Dec 2013, Elsevier. (Established in 2008)
- 11- O. Abdel Wahab, H. Otrok, A. Mourad, *VANET QoS-OLSR: QoS-based Clustering Protocol for Vehicular Ad hoc Networks*. In the **Computer Communications Journal**, Vol. 36 (13), July 2013, Elsevier. (Impact Factor: 1.352, 5-year: 1.330)
- 12- A. Quttoum, A. Jarray, H. Otrok, Z. Dziong, *An Optimal Dynamic Resources Partitioning Auction Model for Virtual Private Networks*. In the **Telecommunication Systems Journal**, June. 2013, Springer. (Impact Factor: 1.163, 5-year: 1.201)
- 13- O. Hayatle, H. Otrok, A. Youssef, *A Markov Decision Process Model for High Interaction Honeypots*. Accepted at the **Information Security Journal: A Global Perspective**, May 2013, Taylor & Francis Group. (Journal title changed in 2008)
- 14- R. Estrada, A. Jarray, H. Otrok, Z. Dziong, H. Barada, *Energy-efficient Resource Allocation Model for OFDMA Macrocell/Femtocell Networks*. In the **IEEE Transactions on Vehicular Technology (TVT)**, April, 2013, IEEE. (Impact Factor: 2.642, 5-year 2.667)
- 15- R. Estrada, A. Jarray, H. Otrok, Z. Dziong, *Base Station Selection and Resource Allocation in Macro-Femtocell Networks under Noise Scenario*. In the **Wireless Networks**, April 2013, Springer. (Impact Factor: 1.055, 5-year: 1.167)
- 16- S. Ayoubi, A. Mourad, H. Otrok and A. Shahin, *New XACML-AspectBPEL Approach for Composite Web Services Security*. In the **International Journal of Web and Grid Services (IJWGS)**, Vol. 9(2), April. 2013, Inderscience. (Impact Factor: 1.579, 5-year: 1.137)

- 17- H. Tout, A. Mourad, H. Otok, *XrML-RBLicensing Approach Adapted to the BPEL process of Composite Web services*. In the **Service Oriented Computing and Applications** journal, Vol. 7(3), Sep. 2013, Springer.
- 18- B. Khosravifar, J. Bentahar, R. Mizouni, H. Otok, M. Alishahi, P. Thiran, *Agent-based Game-Theoretic Model for Collaborative Web Services: Decision Making Analysis*. Accepted in the **Expert Systems with Applications** journal, Vol. 40(8), June 2013, Elsevier. (Impact factor: 1.965, 5-year: 2.254)
- 19- A. Mourad, S. Ayoubi, H. Yahyaoui, and H. Otok, *A Novel Aspect-Oriented BPEL Framework for the Dynamic Enforcement of Web Services Security*. In the **International Journal of Web and Grid Services (IJWGS)**, Vol. 8(4), Sep. 2012, Inderscience. (Impact Factor: 1.579, 5-year: 1.137)
- 20- O. Hayatle, A. Youssef, H. Otok, *Dempster-Shafer Evidence Combining for (Anti)-Honeypot Technologies*. In the **Information Security Journal: A Global Perspective**, Vol. 21(6), Dec. 2012, Taylor & Francis Group. (Journal title changed in 2008)
- 21- S. Boyer, J-M. Robert, H. Otok, C. Rousseau, *An Adaptive Tit-for-Tat Strategy for IEEE 802.11 CSMA/CA Protocol*. In the **International Journal of Security and Networks (IJSN)**, Vol. 7(2), 2012, Inderscience.
- 22- A. Jarray, A. Quttoum, H. Otok, Z. Dziong, *DDP: A Dynamic Dimensioning and Partitioning Model of Virtual Private Networks Resources*. In the **Computer Communications Journal**, Vol. 35(8), 2012, Elsevier. (Impact Factor: 1.352, 5-year: 1.330)
- 23- J-M. Robert, H. Otok, A. Quttoum, R. Boukhris, *A Distributed Resource Management Model for Virtual Private Networks: Tit-for-Tat Strategies*. In the **Computer Networks Journal**, Vol. 56(2), 2012, Elsevier. (Impact Factor: 1.282, 5-year: 1.871)
- 24- J-M. Robert, H. Otok, A. Chriqi, *RBC-OLSR: Reputation-based Clustering OLSR Protocol for Wireless Ad hoc Networks*. In the **Computer Communications Journal**, Vol. 35(4), 2012, Elsevier. (Impact Factor: 1.352, 5-year: 1.330)
- 25- N. Mohammed, H. Otok, L. Wang, M. Debbabi, P. Bhattacharya, *Mechanism Design-Based Secure Leader Election Model for Intrusion Detection in MANET*. In the **IEEE Transactions on Dependable and Secure Computing (IEEE-TDSC)**, vol. 8(1), Jan-Feb 2011, IEEE. (Impact Factor: 1.137, 5-year: 1.276)

- 26- A. Mourad, H. Otrok, L. Baajour, *New Approach Targeting Security Patterns Development and Deployment*. In the **Information Security Journal: A Global Perspective**, Vol. 20(4-5), Oct. 2011, Taylor & Francis. (Journal title changed in 2008)
- 27- A. Quttoum, H. Otrok, Z. Dziong, *Collusion Resistant Mechanism for Autonomic Resource Management in Virtual Private Networks*. In the special issue of the **Computer Communications journal** on “Applied Sciences in Communication Technologies”, Vol. 33(17), Nov. 2010, Elsevier. (Impact Factor: 1.352, 5-year: 1.330)
- 28- H. Otrok, B. Zhu, H. Yahyaoui, P. Bhattacharya, *An Intrusion Detection Game Theoretical Model*. In the **Information Security Journal: A Global Perspective**, Vol.18(5), 2009, Taylor & Francis. (Journal title changed in 2008)
- 29- A. Rachedi and A. Benslimane, H. Otrok, N. Mohammed, M. Debbabi, *A Secure Mechanism Design-Based and Game Theoretical Model for MANETs*. In **Mobile Networks & Applications (MONET) Journal**, Vol. 15(2), April 2010, ACM/Springer. (Impact Factor: 1.496, 5-year: 1.449)
- 30- H. Otrok, M. Mehrandish, C. Assi, M. Debbabi, P. Bhattacharya, *Game Theoretic Models for Detecting Network Intrusions*. In the **Computer Communications Journal**, Vol. 31(10), June 2008, Elsevier. (Impact Factor: 1.352, 5-year: 1.330)
- 31- H. Otrok, N. Mohammed, L. Wang, M. Debbabi, P. Bhattacharya, *A Game-Theoretic Intrusion Detection Model for Mobile Ad-hoc Networks*. In the special issue of the **Computer Communications Journal** on “**Algorithmic and Theoretical Aspects of Wireless Ad Hoc and Sensor Networks**”, Vol. 31(4), March 2008, Elsevier. (Impact Factor: 1.352, 5-year: 1.330)
- 32- R. Haraty, A. N. El-Kassar, H. Otrok, *A Comparative Study of ElGamal Based Cryptographic Algorithms*. Journal of **RITA**, Vol. 12(1). June 2005.
- 33- R. Haraty, A. N. El-Kassar, H. Otrok, *A Comparative Study of RSA-Based Cryptographic Algorithms*. **International Journal of Infonomics**. July 2005, pp: 1-8.

International Conferences and Workshops:

- 34- N. Abura'ed, H. Otrok, R. Mizouni, J. Bentahar, *Mobile Phishing Attack for Android Platform*. Accepted in the 10th International Conference on Innovations in Information Technology (IIT 2014), Al Ain, UAE, Nov. 9 – 11, 2014.

- 35- R. Estrada, H. Otrok, Z. Dziong, *Clustering and Dynamic Resource Allocation for Macro-Femtocell Networks*. In the 16th International Telecommunications Network Strategy and Planning Symposium (Networks 2014), Madeira Island, Portugal, Sep. 17 – 19, 2014.
- 36- R. Al-Dalky, K. Salah, M. Al-Qutayri, H. Otrok, *Framework for a NetFPGA-based Snort NIDS*. In the 9th IEEE/IET International Symposium on Communication Systems, Networks & Digital Signal Processing (CSNDSP 2014), Manchester, UK, July 23 – 25, 2014.
- 37- R. Al-Dalky, O. Abduljaleel, K. Salah, H. Otrok, M. Al-Qutayri, *A Modbus Traffic Generator for Evaluating the Security of SCADA Systems*. In the 9th IEEE/IET International Symposium on Communication Systems, Networks & Digital Signal Processing (CSNDSP 2014), Manchester, UK, July 23 – 25, 2014.
- 38- R. Baiad, H. Otrok, S. Muhaidat, J. Bentahar, *Cooperative Cross Layer Detection for Blackhole Attack in VANET-OLSR*. In the 10th International Wireless Communications and Mobile Computing Conference (IWCMC 2014), Nicosia, Cyprus, Aug. 4 – 8, 2014.
- 39- R. Al-Dalky, K. Salah, H. Otrok, M. Al-Qutayri, *Accelerating Snort NIDS using NetFPGA-based Bloom Filter*. In the 10th International Wireless Communications and Mobile Computing Conference (IWCMC 2014), Nicosia, Cyprus, Aug. 4 – 8, 2014.
- 40- R. Estrada, H. Otrok, Z. Dziong, *Resource Allocation Model based on Particle Swarm Optimization for OFDMA Macro-Femtocell Networks*. In the IEEE International Conference on Advanced Networks and Telecommunication Systems (ANTS 2013), Chennai, India, Dec 15 – 18, 2013.
- 41- R. Estrada, H. Otrok, Z. Dziong, H. Barada, *Joint BS Selection and Resource Allocation Model for OFDMA Macro-Femtocell networks incorporating mobility*. In the 3rd International Conference on Selected Topics in Mobile and Wireless Networking 2013, (MoWNet'2013), Montreal, Canada, August 19 – 21, 2013.
- 42- A. AlDhanhani, H. Otrok, R. Mizouni, A. Al-Rubaie, *Enhanced Reputation-based Tit-for-Tat Strategy for Collaborative Social Applications*. In the 16th International Conference on Interactive Collaborative Learning (ICL), Kazan, Russia, 25-27 Sep. 2013, IEEE.

- 43- H. Sanadiki, H. Otrok, A. Mourad, J-M. Robert, *Detecting Attacks in QoS-OLSR Protocol*. In the 9th International Wireless Communications and Mobile Computing Conference (IWCMC 2013), Cagliari, Sardinia, Italy, July 1 – 5, 2013.
- 44- E. Khosrowshahi Asl, J. Bentahar, H. Otrok, R. Mizouni, *Efficient Coalition Formation for Web Services*. In the 10th IEEE International Conference on Services Computing (SCC 2013), Santa Clara Marriott, CA, USA, June 27-July 2, 2013.
- 45- N. Al Ebri, H. Otrok, A. Mourad, Y. Al-Hammadi, *Botnet Detection: A Cooperative Game Theoretical Correlation-Based Model*. In the 3rd International Conference on Communications and Information Technology (ICCIT-2013), Beirut, Lebanon, June 19 – 21, 2013.
- 46- H. Marshoud, H. Otrok, H. Barada, R. Estrada, Z. Dziong, *Genetic Algorithm Based Resource Allocation and Interference Mitigation For OFDMA Macrocell-Femtocells Networks*. In the 6th IEEE/IFIP Wireless and Mobile Networking conference (WMNC 2013), Dubai, UAE, April 23 – 25, 2013.
- 47- H. Marshoud, H. Otrok, H. Barada, R. Estrada, A. Jarray, Z. Dziong, *Resource Allocation in Macrocell-Femtocell Network using Genetic Algorithm*. In the 8th IEEE International Conference on Wireless and Mobile Computing, Networking and Communications (WiMob 2012), Barcelona, Spain, Oct. 8 – 10, 2012.
- 48- A. Al Dhanhani, R. Mizouni, H. Otrok, A. Al-Rubaie, *Game Theoretical Analysis of Collaborative Social Applications*. In the 8th IEEE International Conference on Collaborative Computing: Networking, Applications and Worksharing (CollaborateCom), Pittsburgh, Pennsylvania, USA, Oct. 14–17, 2012.
- 49- B. Khosravifar, M. Alishahi, E. Khosrowshahi Asl, J. Bentahar, R. Mizouni, H. Otrok, *Analyzing Coopetition Strategies of Services within Communities*. In the 10th International Conference on Service Oriented Computing, (ICSOC 2012), Shanghai, China, Nov. 12 – 15, 2012, Springer Press.
- 50- H. Tout, A. Mourad, H. Yahyaoui, C. Talhi, H. Otrok, *Towards a BPEL Model-Driven Approach for Web Services Security*. In the 10th Annual Conference on Privacy, Security and Trust (PST 2012), Paris, France, July 16-18, 2012.
- 51- H. Al Housani, H. Otrok, R. Mizouni, J-M. Robert, A. Mourad, *Towards Smart Anti-Malwares for Battery-Powered Devices*. In the 5th International Conference on New

- Technologies, Mobility and Security (NTMS 2012), Istanbul, Turkey, May 7 – 10, 2012, IEEE Press.
- 52- O. Hayatle, H. Otok, and A. Youssef, *A Game Theoretic Investigation for High Interaction Honeypots*. In the IEEE ICC 2012 workshops – The First IEEE International Workshop on Security and Forensics in Communication Systems (ICC'12 WS - SFCS), Ottawa, Canada, June 15, 2012, IEEE Press.
- 53- S. Boyer, J-M. Robert, C. Rousseau and H. Otok, *A Novel Reputation-Based Tit-for-Tat Strategy for IEEE 802.11 CSMA/CA Protocol*. In the 7th Annual IEEE Consumer Communications and Networking Conference (CCNC 2012) – Security and Content Protection Track, Las Vegas, USA, January 14 – 17, 2012, IEEE Press.
- 54- A. Mourad, H. Otok, H. Yahyaoui and L. Baajour, *Toward an Abstract Language on Top of XACML for Web Services Security*. In the 6th International Conference for Internet Technology and Secured Transactions (ICITST-2011), Abu Dhabi, UAE, December 12 – 14, 2011, IEEE Press.
- 55- Y. Snoussi, J-M. Robert and H. Otok, *Novel Detection Mechanisms for Malicious Attacks Targeting the Cluster-based OLSR Protocol*, In the 7th IEEE International conference on Wireless and Mobile Computing, Networking and Communications (WiMob 2011), Shanghai, China, October 10 – 12, 2011, IEEE Press.
- 56- A. Mourad, H. Otok and S. Ayoubi, *Aspect-Oriented Approach for WSPL Security Policies*. In the European Intelligence and Security Informatics Conference (EISIC 2011), Athens, Greece, September 12 – 14, 2011, IEEE Press.
- 57- H. Otok, A. Mourad, J-M. Robert, N. Moati, H. Sanadiki, *A Cluster-Based Model for QoS-OLSR Protocol*. In the 7th International Wireless Communications and Mobile Computing Conference (IWCMC 2011), Istanbul, Turkey, July 5 – 8, 2011, IEEE Press.
- 58- A. Al Dhanhani, R. Mizouni, H. Otok and J. W.P. Ng, *Smart Mobile Assessment Tool*, In the International IC'11 Workshop on the Intelligent Campus (iCampus), Nottingham, UK, July 25 – 26, 2011.
- 59- A. Mourad, S. Ayoubi, H. Yahyaoui, H. Otok, *New Approach for the Dynamic Enforcement of Security into Web Services*. In the 8th Annual Conference on Privacy, Security and Trust (PST 2010), Ottawa, Canada, Aug. 17 – 19, 2010, IEEE.

- 60- A. Mourad, H. Otok, L. Baajour, *A Novel Approach for the Development and Deployment of Security Patterns*. In the International Symposium on Secure Computing (SecureCom-10). In conjunction with the 2nd IEEE International Conference on Privacy, Security, Risk & Trust (PASSAT-2010), Minneapolis, USA, Aug. 20 – 22, 2010, IEEE.
- 61- A. Quttoum, H. Otok, Z. Dziong, *ARMM: An Autonomic Resource Management Mechanism for Virtual Private Networks*. In the 7th Annual IEEE Consumer Communications & Networking Conference (CCNC 2010), Las Vegas, Nevada, USA. January 9 - 12, 2010, IEEE Press.
- 62- A. Chriqi, H. Otok, J-M. Robert, *SC-OLSR: Secure Clustering-Based OLSR Model for Ad hoc Networks*. In the 5th IEEE International conference on Wireless and Mobile Computing, Networking and Communications (WiMob 2009), Marrakech, Morocco, October 12 – 14, 2009, IEEE Press. **Awarded the best paper award.**
- 63- M. Cao, H. Otok, B. Zhu, N. Mohammed, P. Bhattacharya, *EVCCM: An Efficient VOIP Congestion Control Mechanism*. Proceedings of the 2nd IEEE Workshop on Enabling the Future Service-Oriented Internet, in Global Communications Conference (IEEE GLOBECOM 2008), November 2008, New Orleans, USA, IEEE Press.
- 64- S. Liu, D. Y. Zhang, X. Chu, H. Otok, P. Bhattacharya, *A Game Theoretic Approach to Optimize the Performance of Host-Based IDS*. Proceedings of the 4th IEEE International conference on Wireless and Mobile Computing, Networking and Communications (Resource Management and QoS Workshop - HWN(RMQ)-WiMob'2008), October 2008, Avignon, France, IEEE Press.
- 65- A. Rachedi and A. Benslimane, H. Otok, N. Mohammed, M. Debbabi, *A Mechanism Design-Based Secure Architecture for Mobile Ad hoc Networks*. Proceedings of the 4th IEEE International conference on Wireless and Mobile Computing, Networking and Communications (WiMob 2008), October 2008, Avignon, France, IEEE Press.
- 66- H. Otok, N. Mohammed, L. Wang, M. Debbabi, P. Bhattacharya, *A Moderate to Robust Game Theoretical Model for Intrusion Detection in MANETs*. Proceedings of the 4th IEEE International conference on Wireless and Mobile Computing, Networking and Communications (Security and Privacy Workshop - SecPri_WiMob 2008), October 2008, Avignon, France, IEEE Press.
- 67- N. Mohammed, H. Otok, L. Wang, M. Debbabi, P. Bhattacharya, *A Mechanism Design-Based Multi-Leader Election Scheme for Intrusion Detection in MANET*. Proceedings of

- IEEE Wireless Communications & Networking Conference (IEEE WCNC 2008), Las Vegas, March 2008, IEEE Press.
- 68-H. Otok, N. Mohammed, L. Wang, M. Debbabi, P. Bhattacharya, *An Efficient And Truthful Leader IDS Election Mechanism for MANET*. Proceedings of the 3rd IEEE International conference on Wireless and Mobile Computing, Networking and Communications (WiMob 2007), New York, USA, October 8 - 10, 2007, IEEE Press.
- 69-H. Otok, M. Debbabi, C. Assi, P. Bhattacharya, *A Cooperative Approach for Analyzing Intrusions in Mobile Ad hoc Networks*. Proceedings of the 27th International Conference on Distributed Computing Systems - Workshops (ICDCS Workshops 2007), Toronto, Canada, June 25 - 29, 2007, IEEE Press.
- 70-H. Otok, J. Paquet, M. Debbabi, P. Bhattacharya, *Testing Intrusion Detection Systems in Mobile Ad-hoc Networks: A Comprehensive Study*. Proceedings of the Communication Networks and Services Research Conference (CNSR 2007), Fredericton, New Brunswick, Canada, May 14 - 17, 2007, IEEE Press.
- 71-M. Mehrandish, H. Otok, C. Assi, M. Debbabi, P. Bhattacharya, *A Game Theoretic Approach to Detect Network Intrusions: The Cooperative Intruders Scenario*. Proceedings of the IEEE GlobeCom 2006, San Francisco California, USA, Nov 27-Dec 1, 2006, IEEE Press.
- 72-H. Otok, R. Haraty, A. N. El-Kassar, *Improving the Secure Socket Layer Protocol by modifying its Authentication function*. Proceedings of the World Automation Congress (WAC 2006) - IFMIP Symposium, Budapest, July, 2006, IEEE Press.
- 73-P. Bhattacharya, M. Debbabi, H. Otok, *Improving the Diffie-Hellman Secure Key Exchange*. Proceedings of the 2005 International Conference on Wireless Networks, Communications, and Mobile Computing, Wirelesscom'2005, Pages 193 -197, Maui, Hawaii, USA, June 2005, IEEE Press.
- 74-H. Otok, A. Mourad, M. Debbabi, C. Assi, *Improving the Security of SNMP in Wireless Networks*. Proceedings of the 2005 International Conference on Wireless Networks, Communications, and Mobile Computing, Wirelesscom'2005, Pages 198 - 202, Maui, Hawaii, USA, June 2005, IEEE Press.
- 75-R. Haraty, H. Otok, A. N. El-Kassar, *Attacking El Gamal Based Cryptographic Algorithms Using Pollard's Rho Algorithm*. Proceedings of the ACS/IEEE International Conference on Computer Systems and Applications. Egypt. Jan. 2005, IEEE Press.

76- R. Haraty, A. N. El-Kassar and H. Otrok, *A Comparative Study of RSA Based Cryptographic Algorithms*. Proceedings of the 13th International Conference on Intelligent and Adaptive Systems and Software Engineering (IASSE-2004). Nice, France. July 2004, 183-188.

77- R. Haraty, H. Otrok and A. N. El-Kassar, *A Comparative Study of ElGamal Based Cryptographic Algorithms*. Proceedings of the 6th International Conference on Enterprise Information Systems (ICEIS 2004). Porto, Portugal. April 2004.

National Conferences: (Course project publications and students are underlined)

78- D. Atia, F. Mohamed, M. Hafez, H. Otrok, *Malicious Dialer for Android Smartphones*. In the Secure – Abu Dhabi Conference 2013, March 2013, Abu Dhabi, UAE, (ISC)².

79- R. Ashour, H. Otrok, Y. Al-Hammadi, *Draining the Battery of Android Smart-Phones*. In the Secure – Abu Dhabi Conference 2013, March 2013, Abu Dhabi, UAE, (ISC)².

80- A. Alhammadi, M. Al-Hameeri, H. Otrok, R. Mizouni, *Tic Tac Toe: A safe game?* In the Secure – Abu Dhabi Conference 2013, March 2013, Abu Dhabi, UAE, (ISC)².

PROFESSIONAL EXPERIENCE

Associate Professor

July 2014 – Crurent

Khalifa University of Science, Technology & Research (KUSTAR), Department of Electrical and Computer Engineering. CMPE 433: Computer Security. ECCE 630: Advanced Computer Networks

Affiliate Associate Professor

September 2014 – August 2017

ETS (University of Quebec), Electrical Department, supervised one Ph.D. Student and currently supervising two Ph.D. students.

Affiliate Assistant Professor

January 2014 – December 2016

Concordia University, Concordia Institute for Information Systems Engineering (CIISE), supervised one Master student and supervising two Ph.D students.

Assistant Professor

August 2009 – June 2014

Khalifa University of Science, Technology & Research (KUSTAR), Department of Electrical and Computer Engineering. CMPE 111: Principles of Computer Programming (C++). CMPE 211: Object Oriented Programming. E615: Computer and Network Security. ENGR 112: Introduction to Computing (C++ and Matlab). CMPE/SOFE 495: Computer Security. ECCE 630: Advanced Computer Networks.

Postdoctoral

January 2009 – July 2009

University of Québec (École de technologie supérieure): Worked on the project “Security issues and

resource management for virtual private networks” funded by Bell Canada and Natural Sciences and Engineering Research Council of Canada (NSERC).

Teaching Assistant

January 2007 – December 2008

Concordia University: COMP 445: Data Communication and Computer Networks, COEN 445: Communication Network and Protocol. COMP 248: Introduction to programming (Java). COMP 346: Operating System. COEN 243: Programming methodology I. COEN 346: Operating system.

Teaching Fellow

September 2006 – April 2008

Concordia University: INSE 6120: Crypto-Protocol and Network Security and INSE 6140: Middleware and Application Security.

Research Assistant

September 2004 – December 2008

Computer Security Laboratory at Concordia Institute for Information Systems Engineering (CIISE), Concordia University. Worked on the Intrusion Detection project.

Lecturer

September 2003 – June 2004

Lebanese International University, Beirut, Lebanon. I taught the following courses: Visual Basic. Net, Internet Programming, and Computer Architecture.

Lecturer

September 2001 – June 2004

Arts, Sciences & Technology University in Lebanon, formerly was, *Business and Computer University College*, Beirut, Lebanon. I taught the following courses: Programming I (C & C++), Programming II (OOP in C++ & Data Structure), Algorithms and Data Structure, Logic Design, and Computer Architecture.

Teaching Assistant

September 2000 – June 2004

Beirut Arab University, Beirut, Lebanon. I taught the following courses in the computer Lab: Programming I and II, Advanced Programming, Algorithms and Data Structure, Data Base, Networking essentials (Network I), Logic Design, and Computer Architecture.

GRADUATE STUDENTS SUPERVISION

Post-Doctoral at ETS University, Montreal, Canada:

- Dr. Abdallah Jarray was jointly supervised with Prof. Z. Dziong, “*Resource Management for Virtualized Networks and Macro-Femtocells Networks*”. From **March 2010** to **May 2012**.

PhD Students at ETS University, Montreal, Canada:

- Ahmad Quttoum was jointly supervised with Prof. Z. Dziong, “*Resource Management for Virtualized Networks*”. **Defended on October 5, 2011**.

- Rebeca Estrada was jointly supervised with Prof. Z. Dziong, “*Optimization Models for Resources Management in Two-Tier Cellular Networks*”. **Defended on Nov. 19, 2014.**
- Katty Rohoden-Jaramillo is jointly supervised with Prof. Z. Dziong, “*Resources Optimization for D2D Networks*”. Started on February, 2014.

PhD Student at Concordia University, Montreal, Canada:

- Omar AbdelWahab is jointly supervised with Dr. Jamal Bentahar, “*Web Services Security in Communities*”. Started on January 2014.
- Ehsan Khosrowshahi Asl is jointly supervised with Dr. Jamal Bentahar, “*Game-theoretic and learning framework for communities of web services*”. Started on June 2012.

Master Student at Concordia University, Montreal, Canada:

- Osama Hayatle was jointly supervised with Prof. Amr Youssef, “*Analytical Models for the Interaction between Botmasters and Honeypots*”. **Defended on March 1, 2013.**

Master Students at Khalifa University:

- Ahmed Al Dhanhani was jointly supervised with Dr. Rabeb Mizouni. He worked on “*Game Theory Based Motivation Model for Social Learning Platforms*”. **Defended on June 2013.**
- Hanaa Marshoud was jointly supervised with Prof. Hassan Barada. She worked on “*Resources Management for Femto-Macrocells Networks*”. **Defended on June 2013.**

Master Students at Lebanese American University, Beirut, Lebanon:

- Nadia Moati is jointly supervised with Dr. Azzam Mourad, “*A Cooperative Detection Model of Selfish Nodes in Cluster-based QoS-OLSR Protocol*”. **Defended on May 19, 2014.**
- Hiba Sanadiki is jointly supervised with Dr. Azzam Mourad, “*Detecting Malicious Attacks in Cluster-based QoS-OLSR Protocol*”. **Defended on May 5, 2014.**
- Omar AbdelWahab was jointly supervised with Dr. Azzam Mourad, “*Cooperative Clustering Models in Vehicular Ad hoc Networks*”. **Defended on June 2013.**
- Sara Ayoubi was jointly supervised with Dr. Azzam Mourad, “*A BPEL-based Framework for the Enforcement of Web Services Security*”. **Defended on April, 2012.**

RESEARCH GRANTS

1. Khalifa University Internal Research Fund (KUIRF) 2015: *Privacy and Energy Aware Mobile Crowd Sensing*. Co-PI for AED 196,000.
2. Khalifa University Internal Research Fund (KUIRF) 2013: *Hardware-Assisted Snort IDS for SCADA Systems*. Co-PI for AED 199,675.
3. Khalifa University Internal Research Fund (KUIRF) 2013: *Cross-Layer Design for Secure Land Transport Systems*. Co-PI for AED 198,900.

4. Khalifa University Internal Research Fund (KUIRF) 2013: *New methods for screening cardiac autonomic neuropathy in the diabetic population of UAE (Stage 2)*. Co-PI for AED 196,000.
5. Khalifa University Internal Research Fund (KUIRF) 2012: *New methods for screening heart diseases in diabetic patients*. Co-PI for AED 193,200.
6. CNRS 2010 – 2012: *A Multi-Level Aspect-Oriented Based Framework for the Enforcement of Web Services Security*. Co-PI for \$11,000 (L.L.16,000,000), Lebanon. The PI is Dr. Azzam Mourad from LAU.
7. CNRS 2012 – 2013: *Towards the Elaboration of a Framework Targeting Various Problems Related to the Adoption of Service Oriented Platform and Web services into Intelligent Transportation Systems*. Co-PI for \$7275 (L.L. 11,000,000), Lebanon. The PI is Dr. Azzam Mourad from LAU.

AWARDS

1. Outstanding reviewer award– Computer Communications, Elsevier, 2014.
2. Faculty excellence award for outstanding teaching, Khalifa University, 2013.
3. Best paper award, WIMOB conference, 2009.

ADMIN & UNIVERSITY SERVICES

Active Member of the following committees:

- 1- Search committee of: Computer, Software and Lab instructor positions.
- 2- Interview committee of: Computer, Software and Lab instructor positions.
- 3- EBTIC Interview committee. (2009 – 2011)
- 4- Senior lecturer promotion committee. (2011 – 2012)
- 5- Graduate & undergraduate interview committees.
- 6- Educational experience committee. (2010 – 2011)
- 7- Computer engineering curriculum committee. (2011 – 2012).
- 8- Internship committee and coordinator. (2011 – 2012).
- 9- Department award, research, and student search committees.
- 10- Courses' evaluation development and administration committee.

Organization chair and member of the following contests:

- 1- Khalifa Programming Contest – KPC: Founder & Chair (2010 – 2011)
- 2- Gulf Programming Contest – GPC: Chair (2012)
- 3- Mobile Application Contests – MAC: Member (2010 – 2012)

Coordinator of the following courses:

- 1- CMPE 111: Principles of Programming (2009 – 2012)
- 2- ENGR 112: Introduction to Computing (2012 – up to now)

COMMUNITY SERVICES

Founder and organization chair of the following contests at Emirates Skills 2013:

- 1- Cyber Security (Chief Expert).
- 2- Programming.

Founder and organization chair of the Smart Devices Security and Privacy Contest (SmartSec 2015).

EXAMINATION COMMITTEE

Name	Institute	Thesis	Role	Year
Ahmad Quttoum	ETS	Ph.D.	Thesis Examiner	Oct. 2011
Rebeca Estrada	ETS	Ph.D.	Thesis Examiner Comprehensive Examiner Proposal Examiner	Nov. 2014 March 2011 July 2011
Ehsan K. Asl	Concordia University	Ph.D.	Proposal Examiner	Dec. 2013
Salwa Alzahmi	Khalifa University	Masters	Thesis Examiner	Dec. 2014
Osama Hayatle	Concordia University	Masters	Thesis Examiner	March 2013
Sara Ayoubi	Lebanese American University	Masters	Thesis Examiner Proposal Examiner	April 2012 July 2011
Omar Abdelwahab	Lebanese American University	Masters	Thesis Examiner Proposal Examiner	June 2013 March 2013
Nadia Moati	Lebanese American University	Masters	Proposal Examiner Thesis Examiner	June 2013 May 2014
Hiba Sanadiki	Lebanese American University	Masters	Proposal Examiner Thesis Examiner	June 2013 May 2014

PROFESSIONAL ACTIVITIES

Editorial Board:

1. IEEE Communications Letters. (March 2015)

Conference Co-Chair in:

1. The 11th IEEE International Conference on Wireless and Mobile Computing, Networking and Communications (WiMob 2015). **Publicity chair**, IEEE.

2. The 12th International Conference on Mobile Web and Intelligent Information Systems (MobiWis 2015), **Pervasive and ubiquitous applications** track chair, LNCS.
3. The 4th International Conference on Communications and Information Technology (ICCIT-2015), **Networks & Internet Technologies**, track chair.
4. The International Conference on Information and Communication Technology Research (ICTRC 2015). **Publicity chair**, IEEE.
5. The 9th International Conference on Innovations in Information Technology (IIT'13), **Computer and Information Security** track chair, IEEE.
6. The 6th International Conference for Internet Technology and Secured Transactions (ICITST-2011). **Publicity chair and local arrangement chair**, IEEE.

Technical program committee (TPC) member of the following conferences:

1. The 11th IEEE International Conference on Wireless and Mobile Computing, Networking and Communications (WiMob 2015).
2. The IEEE INFOCOM 2015 Workshop on Mobile Cloud and Virtualization (MCV'15).
3. The IEEE Global Communications Conference 2015 (GC'15 – Security and GC'15 – WN).
4. The 3rd International Conference on Future Internet of Things and Cloud (FiCloud 2015).
5. The 11th International Wireless Communications and Mobile Computing Conference (IWCMC 2015 Security Symposium).
6. The 7th IFIP International Conference on New Technologies, Mobility, and Security 2015 (NTMS 2015) – Mobility and Wireless Networks Track.
7. The 10th International Conference on Future Networks and Communications (FNC 2015).
8. The IEEE Wireless Communications and Networking Conference – IEEE WCNC 2015. Mobile and Wireless Networks Track.
9. The IEEE International Conference on Communications 2015 (ICC'15 – CISS). Communications and Information System Security Symposium (CISS).
10. The 3rd International Conference on Connected Vehicles & Expo (ICCVE 2014).
11. The 10th IEEE International Conference on Wireless and Mobile Computing, Networking and Communications (WiMob 2014).
12. The 4th International Conference on Selected Topics in Mobile and Wireless Networking 2014, (MoWNet'2014).
13. The IEEE Global Communications Conference 2014 (GC'14). Wireless Networking Symposium and Cognitive Radio and Network Symposium.
14. The IEEE INFOCOM 2014 Workshop on Mobile Cloud Computing.
15. The IEEE Wireless Communications and Networking Conference – IEEE WCNC 2014. Mobile and Wireless Networks Track.
16. The 11th Annual IEEE Consumer Communications & Networking Conference 2014 – CCNC 2014. Multimedia Networking & Services & Applications Symposium.
17. The 11th International Conference on Wireless Information Networks and Systems” - WINSYS 2014

18. The IEEE International Conference on Communications 2014 (ICC'14 – CISS). Communications and Information System Security Symposium (CISS).
19. The 6th IFIP/IEEE International Conference on New Technologies, Mobility, and Security 2014 (NTMS 2014) – Mobility and Wireless Networks Track.
20. The 2nd International Conference on Connected Vehicles & Expo (ICCVE 2013).
21. The 3rd International Conference on Selected Topics in Mobile and Wireless Networking 2013, (MoWNet'2013).
22. The 9th IEEE International Conference on Wireless and Mobile Computing, Networking and Communications (WiMob 2013).
23. The 10th Annual IEEE Consumer Communications & Networking Conference 2013 – CCNC 2013. Multimedia Networking & Services & Applications Symposium.
24. The IEEE Global Communications Conference 2013 (GC'13). Wireless Networking Symposium (GC-WN 2013) and Cognitive Radio and Networks Symposium (GC-CogRN 2013).
25. The IEEE International Conference on Communications 2013 – ICC'13-WN. Wireless Networking Symposium.
26. The IEEE Wireless Communications and Networking Conference – IEEE WCNC 2013.
27. The first IEEE International Conference on Communications in China 2012 – ICC-CQR 2012. Communications QoS and Reliability Symposium.
28. The IEEE Global Communications Conference 2012 (GC12). Communications and Information System Security Symposium (GLOBECOM-CISS 2012).
29. The 23rd Annual IEEE International Symposium on Personal, Indoor & Mobile Radio Communications (PIMRC2012-NET).
30. The 8th IEEE International Conference on Wireless and Mobile Computing, Networking and Communications (WiMob 2012).
31. The International Wireless Communications & Mobile Computing Conference (IWCMC 2012-WMCS).
32. The 5th IFIP International Conference on New Technologies, Mobility, and Security (NTMS 2012).
33. The 2nd Workshop on Bio-inspired Approaches to Advanced Computing and Communications (Bionetics 2011).
34. The IEEE International Conference on Communications 2012 – ICC 2012. Wireless Networks Symposium.
35. The 9th Annual IEEE Consumer Communications & Networking Conference 2012 – CCNC 2012. Multimedia & Entertainment Networking and Services Symposium.
36. The 6th International Conference for Internet Technology and Secured Transactions (ICITST-2011).
37. The 3rd International Workshop on RFID/USN Security and Cryptography 2011 (RISC'11).
38. The 5th International Conference on Internet Multimedia Systems Architecture and Application (IMSAA-11).
39. The 7th IEEE International Conference on Wireless and Mobile Computing, Networking and Communications (WiMob 2011).
40. The 1st International Conference on Advances in Computing and Communications (ACC-2011).

41. The 4th IFIP International Conference on New Technologies, Mobility, and Security (NTMS 2011).
42. The 7th International Conference on Innovations in Information Technology (IIT 2011).
43. The 6th IEEE GCC Conference & Exhibition for Sustainable Ubiquitous Technology (GCC 2011).
44. The 2nd International Workshop on RFID/USN Security and Cryptography 2010 (RISC'10).
45. The IEEE International Conference on Communications 2011 - ICC-2011. Communications and Information System Security Symposium (CISS).
46. The 6th IEEE International Conference on Wireless and Mobile Computing, Networking and Communications (WiMob 2010).
47. The 8th Annual IEEE Consumer Communications & Networking Conference 2011- CCNC 2011. Multimedia & Entertainment Networking and Services Symposium.
48. The 7th Annual IEEE Consumer Communications & Networking Conference 2010- CCNC 2010. Multimedia communication and Services Symposium.
49. The IEEE Global Communications Conference (IEEE GLOBECOM 2009).
50. The 5th IEEE International Conference on Wireless and Mobile Computing, Networking and Communications (WiMob 2009).
51. The IEEE International Conference on Communications 2009 - ICC-2009. Communication and Information Systems Security (CISS) Symposium.
52. The 4th IEEE International Conference on Wireless and Mobile Computing, Networking and Communications (WiMob 2008).
53. The IEEE Global Communications Conference (IEEE GLOBECOM 2008).
54. The 2nd International Conference on New Technologies, Mobility and Security (NTMS'2008).
55. The 2008 International Symposium on Computer Science and its Applications (CSA-08)
56. The IEEE International Conference on Communications 2007 - ICC-2007.

Reviewer of the following conferences:

1. The IEEE 71st Vehicular Technology Conference: VTC2010-Spring.
2. The IEEE International Conference on Communications 2008 - ICC-2008. (Wireless networking).
3. The 3rd IEEE International Conference on Wireless and Mobile Computing, Networking and Communications (WiMob 2007).

Technical Reviewer of the following journals and magazines:

1. IEEE Transactions on Industrial Informatics, IEEE.
2. IEEE Transactions on Service Computing, IEEE.
3. Evolving Systems Journal, Springer.
4. International Journal of Communication Systems, Wiley.
5. IEEE Wireless Communications Magazine, IEEE.
6. The Computer Journal, Oxford
7. International Journal of Ad hoc and Ubiquitous Computing, Inderscience.

8. Journal of Wireless Personal Communications, Springer.
9. Journal of Computers & Security, Elsevier.
10. Journal of Network and Computer Applications, Elsevier.
11. IEEE Transactions on Vehicular Networks, IEEE.
12. IEEE Communications Letters, IEEE.
13. IEEE Transactions on Communications, IEEE.
14. IEEE Transactions on Wireless Communications, IEEE.
15. The Arabian Journal for Science and Engineering (AJSE), Springer.
16. Information Security Journal: A Global Perspective, Taylor & Francis.
17. Ad hoc Networks, Elsevier.
18. Computer communications, Elsevier.
19. Journal of Systems and Software, Elsevier.
20. Mobile Networks and Applications, ACM/Springer.
21. International Journal of Network Security (IJNS).
22. IEEE Transactions on Systems, Man and Cybernetics - Part B.
23. Wiley Wireless Communications and Mobile Computing (WCM).
24. Security and Communication Networks Journal. Wiley