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Academic Background

Ph.D. Telecom ParisTECH (ex ENST – Paris), 2004
M.Sc. University Saint Joseph – EZIB (Lebanon) and the Lebanese University, Lebanon, Networking, 2001
B.Sc. Lebanese University, Lebanon, Computer Science, 1999

WORK EXPERIENCE

Academic Experience

Associate Professor, Zayed University (August, 2015 - Present), Dubai, United Arab Emirates.
Assistant Professor, Zayed University (August, 2013 - July, 2015), Dubai, United Arab Emirates.
Assistant Professor, College of Applied Science (October, 2012 - August, 2013), Sohar, Oman.
Assistant Professor, Dhofar University (September, 2009 - August, 2012), Salalah, Oman.
Assistant Professor / Associate Researcher, CNRS (National Center for Scientific Research) (September, 2006 - August, 2009), Clermont Ferrand, France.
Postdoctoral Research Associate, ENST Paris (September, 2005 - September, 2006), Paris, France.
Lecturer, University Paris V René Descartes (September, 2004 - August, 2005), Paris, France.

Memberships

WiMax Consortium, 2006-2007
ESRGroups, 2005-2011
IEEE, 2003-Current

Teaching Activities

2013 - CIT 335 – Information Security Technologies

SERVICE:

Service to the University

Department Assignments

Chair:

2009-2010 – 2011-2012: Research Committee at Computer Science Department of Dhofar University: Evaluate so many research proposals from faculty. Organize seminars and promote research.

Department Assignments

Member:

2008-2009 – 2012-2013: Research Council of LIMOS Laboratory – CRNS France: Take all action needed to assist CNRS headquarter and VC of the university in performing their duties in service of the university and laboratory mission and its goals.

College Assignments

Member:

2013-2014 – 2015-2016: Search Committee: Assist the Committee with the recruitment process by evaluating many CVs, interviewing many candidates, and providing feedback and recommendations on the candidates' suitability.

2013-2014 – 2015-2016: Research Committee: Evaluate so many research proposals from faculty. Organize seminars and promote research. I send an email called "Faculty Publication Report" every month during the academic year; that email includes a faculty publications list and other research related activities. The purpose is to increase the cohesiveness of our collegial community and to alert our faculty activities and highlight their achievements. I am planning to eventually expand it to include alumni of the college.

2013-2014 – 2014-2015: Faculty Committee: Oversee faculty concerns regarding issues of interest related to faculty professional development, research, faculty morale, salary compression issues, faculty evaluation policies and implementation, faculty recruitment and retention, or any faculty policy changes.

University Assignments

Member:

2011-2012: University Research Board at Dhofar University: Formulate policies and guidelines for the allocation of funds for Research and Faculty Development applications. Consider policies to be followed in seeking grants support from external agencies. Act in an advisory capacity to the Vice Chancellor in the implementation of faculty development. Approve applications for conducting research or other works in DU that involve data collection, interviews with DU community, and filling questionnaires. Edit and publishing the Research Report of the University every two years.

Dissertation Assignments

Chair:

2014-2015 – 2015-2016: Ijaz Khan: A New Self-Detection Scheme for Wireless Sensor Networks Hole Detection and Boundary Recognition

2008-2009 – 2011-2012: Hilal Hussain: Security of Wireless Sensor Networks

2008-2009 – 2011-2012: Ismail Mansour: Security in Grid Computing

Service to the Profession

Academic Conference: Moderator / Facilitator

2014: IFIP International Conference on New Technologies, Mobility and Security.

2006: The future of Smart Cards, Paris, France.

Board Member: PRJ Editorial Review Board

2010 – 2012: Information Security Journal.

Chair: Conference / Track / Program

2015: SaSeIoT2015.

2015: WSN-ADT2015.

2015: SmartCity2015.

2014: Undergraduate Research Conference.

2014: IFIP International Conference on New Technologies, Mobility and Security.

2009: IFIP N2S.

Reviewer - Article / Manuscript

2014: TPC Member and Journal Reviewer.

- Communications and Networking Simulation Symposium (CNS), since s007
- IEEE Global Communications Conference, since 2007

- IEEE International Conference on Communications (ICC), since 2007
 - Smart City Workshop, since 2014
 - International Symposium on Security in Computing and Communications, since 2015
 - International Conference on Connected Vehicles & Expo (ICCVE), since 2015
 - International Biometrics & Smart Government Summit, since 2015.
 - IEEE Security & Privacy
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- IEEE computer
 - IEEE Transaction on Smart Grid
 - IEEE Transactions on Dependable and Secure Computing
 - IEEE Transactions on Vehicular Technology
 - IEEE Transactions on Parallel and Distributed Systems
 - Transactions on Computers
 - ACM/Springer Mobile Networks and Applications (MONET)
 - Elsevier Computer Communications
 - IT Professional
 - Journal of Network and Computer Applications
 - Journal on Wireless Communications and Networking (EURASIP JWCN).

Editor: Conference Proceedings

2008 – 2014: IFIP International Conference on New Technologies, Mobility and Security.

2009: N2S 2009. International Conference on Network and Service Security

Member: Committee/Task Force

2005 – 2014: IETF TLS.

Reviewer: Ad Hoc Reviewer for a Journal

2011 – 2014: Journal of Network and Computer Applications.

2010 – 2013: IEEE Computer.

2012: EURASIP.

2011 – 2012: Elsevier Computer Communications.

Reviewer: Conference Paper

2008 – 2014: IEEE Globecom.

2007 – 2014: IEEE ICC.

Service to the Community

Chair of a Committee

2014: NTMS - Steering Committee Chair, I have a key role to play at the different steps of the organization of NTMS Conference. After consulting the other Steering Committee member, I appoint the conference general chair and specify the dates and the location of the conference. Further, and in collaboration with the appointed general chair, I appoint the committee program and the other committees' chairs. I also take care of ensuring the technical support endorsement of several scientific associations such as of IEEE, COMSOC and IFIP. I also take care of editing the conference proceedings and of the camera-ready submissions to IEEE Xplore.

Other Community Service Activities

2014: faculty chaperone on students field trips such as GITEX, students' trips to GITEX 2013 and GITEX 2014 in Dubai. The students appreciated the opportunity to interact with so many professionals in their field. I also accompanied students to the annual ethical hacking competition organized by DU and I helped them in their preparation for this competition.

2014: Mobile application supervisor, Supervising 2 teams for the Mobile-App competitions

- Smart Parking: MAKANI app provides users with the availability of parking spaces and gives them the possibility of booking these places in advance and online. The app aims at solving parking issues and thus, reducing traffic congestion. It would help the government and transport authorities in the UAE implement a more accurate and efficient system to manage parking spaces. It also aims to reduce congestion and optimize parking spaces by directing drivers to areas that have more free parking spaces and are closed to the users' destinations. Finally, the app minimizes the time required to find a free parking space and reduces the reduced CO2 emission, which makes the application an eco-friendly alternative.
- Blood Donation: The goal of the application is to help blood donors and hospitals to coordinate the blood donation in case of urgent need of blood, e.g. car accidents and other emergencies. It puts the power to save lives in the palm of the user's hand. Based on the donors' geo-localisations, the app will find blood donors quickly and easily; especially in the emergencies cases where the app will send an emergency donation message to the donors who are nearest to the hospital.

INTELLECTUAL CONTRIBUTIONS:

Refereed Articles

- Bello, O., Shelrali, Z., & Badra, M. (2017). Network layer inter-operation of Device-to-Device communication technologies in Internet of Things (IoT). *Ad Hoc Networks*.
- Badra, M. & Zeadally, S. (2016). An Improved Privacy Solution for the Smart Grid. *International Journal on Network Security*.
- Marco Alaez, R. (2016). Towards an open source architecture for multi-operator LTE core networks. *Journal of Network and Computer Applications*.
- Sahli, N., Jabeur, N., & Badra, M. (2015). Agent-based framework for sensor-to-sensor personalization. *Journal of Computer and System Sciences*.
- Badra, M. & Zeadally, S. (2014). Design and Performance Analysis of a Virtual Ring Architecture for Smart Grid Privacy. *IEEE Transactions on Information Forensics and Security*.
- Zeadally, S., Khan, A., AlKaraz, C., & Badra, M. (2013). Towards Privacy Protection in Smart Grid. *Springer Wireless Personal Communications*.
- Hussein, H., Badra, M., & T. Al-Somani, T. (2012). Elliptic Curve Cryptoprocessor Implementation on a Nano FPGA: Interesting for Resource-Constrained Devices. *International Journal of RFID Security and Cryptography*.
- Hussein, H., Badra, M., & T. Al-Somani, T. (2012). Software Implementations of Elliptic Curve Cryptography in Wireless Sensor Networks. *Journal of Communication and Computer*.
- Badra, M., Hajjeh, I., & Urien, P. (2007). A Flexible and Fast Security Solution for Wireless LAN. *Elsevier Pervasive and Mobile Computing journal*.
- Badra, M. (2007). Alternative wireless client authentication and key distribution. *Elsevier Network Security*.
- Badra, M. & Hajjeh, I. (2006). Key-Exchange Authentication Using Shared Secrets. *IEEE Computer*.
- Badra, M. & Hajjeh, I. (2006). Le protocole SSH. *Techniques de l'ingénieur*.
- Badra, M., Serhrouchni, A., & Urien, P. (2004). A Lightweight Identity Authentication Protocol for Wireless Networks. *Elsevier Computer Communications*.

Refereed Proceedings

Full Paper

- AlFandi, O. & Badra, M. (2016). Dynamic and Efficient Brokering of Energy Suppliers and Consumers in a Smart Grid. *International Conference on Intelligent Green Building and Smart Grid (IGBSG)*.
- Badra, M. (2016). A Lightweight Security and Authentication Protocol for NFC-Based Mobile Payments. *The 7th International Conference on Ambient Systems, Networks and Technologies*.
- Msahli, M., Serhrouchni, A., & Badra, M. (2016). Extending TLS with KMIP Protocol for Cloud Computing. *IFIP NTMS International Workshop on Cybercrime Investigation and Digital forensics (CID), Cyprus*.

Badra, M. & Ben Hamida, E. (2015). A Novel Cryptography based Privacy Preserving Solution for Urban Mobility and Traffic Control. *IFIP International Conference on New Technologies, Mobility and Security*.

Belqasmi, F. (2015). NGNaaS: NGNs as Cloud Computing Services. *IFIP International Conference on New Technologies, Mobility and Security*.

Sahli, N., Jabeur, N., & Badra, M. (2013). Agent-based Framework for Sensor-to-Sensor Personalization. *ANT/SEIT 2013*.

Badra, M. & Zeadally, S. (2013). Key Management Solutions in the Smart Grid Environment. *IFIP/IEEE Wireless and Mobile Networking Conference, WMNC 2013*.

Badra, M., Sahli, N., Jabeur, N., & Borghol, R. (2012). Extending TLS to Secure Multi-host Applications Exchanges. *IEEE International Symposium on Personal, Indoor and Mobile Radio Communications (IEEE PIMRC 2012)*.

Badra, M., Ben Hamida, E., & Hajjeh, I. (2012). MTLs: A Multiplexing TLS/DTLS based VPN Architecture for Secure Communications in Wired and Wireless Networks. *EuroITV'2012*.

Badra, M. (2011). Securing Communications between Multiple Entities Using a Single TLS Session. *NTMS 2011*.

Sahli, N., Jabeur, N., & Badra, M. (2011). Agent-Based Approach to Plan Sensors Relocation in a Virtual Geographic Environment. *NTMS 2011*.

Badra, M., Hussein, H., & Al-Somani, T. (2011). Hardware Implementations of Elliptic Curve Cryptography in Wireless Sensor Networks. *International Conference on Internet Technology and Secured Transactions, ICITST2011*.

Sahli, N., Jabeur, N., Khan, I., & Badra, M. (in press, 2011). Towards a Generic Framework for Wireless Sensor Network Multi-Criteria Routing. *Workshop on Wireless Sensor Networks: Architectures, Deployments, and Trends, WSN-ADT*.

Badra, M., Serhrouchni, A., & Guillet, T. (2009). Random Values, Nonce and Challenges: Semantic Meaning versus Opaque and Strings of Data. *IEEE VTC*.

Badra, M. & Urien, P. (in press, 2008). TLS Tandem. *NTMS 2008*.

Guillet, T., Serhrouchni, A., & Badra, M. (in press, 2008). Mutual Authentication for SIP: A semantic meaning for the SIP opaque values. *NTMS 2008*.

Badra, M. (in press, 2008). An Efficient Password Based-Authentication and Key Agreement Protocol for WLAN EAP. *ICISTM 2008*.

Badra, M., Hajjeh, I., & Demerjian, J. (in press, 2007). Hiding User Credentials during the TLS authentication phase. *NTMS 2007*.

Badra, M. & Urien, P. (in press, 2007). Adding Client Identity Protection to EAP-TLS SmartCards. *IEEE Wireless Communications and Networking Conference, IEEE WCNC*.

Badra, M. & Hajjeh, I. (in press, 2007). Phishing Attacks and Solution. *International Conference on Mobile Multimedia Communications*.

Urien, P. & Badra, M. (in press, 2007). Secure Access Modules for Identity Protection over the EAP-TLS: Smartcard benefits for user anonymity in wireless infrastructures. *SECRYPT 2007*.

Urien, P., Dandjinou, M., & Badra, M. (in press, 2006). Introducing Trusted EAP Module for Security Enhancement in WLANs and VPNs. *International Conference on Communication, Network, and Information Security (CNIS)*.

Badra, M. & Hajjeh, I. (in press, 2006). Enabling VPN and Secure Remote Access using TLS Protocol. *IEEE International Conference on Wireless and Mobile Computing, Networking and Communications, IEEE WiMob*.

Hajjeh, I., Badra, M., & Serhrouchni, A. (in press, 2005). Building a Secure and Extensible Protocol for wired and wireless environments. *IEEE 61st Vehicular Technology Conference*.

Demerjian, J., Hajjeh, I., & Badra, M. (in press, 2005). Network Security using E-DHCP over NAT/IPSEC. *Web Technologies, Applications and Services, WTAS*.

Hajjeh, I., Demerjian, J., Badra, M., & Ferraz, S. (in press, 2005). A Secure Way to Combine IPSec, NAT & DHCP. *Mathematical Methods, Models, and Architectures for Network Security Systems*.

Urien, P., Dandjinou, M., Badra, M., & Pujolle, G. (in press, 2005). Introducing Micro-Authentication Server in Emerging Pervasive Environments. *IADIS WWW/Internet Conference*.

Badra, M., Hajjeh, I., & Demerjian, J. (in press, 2005). Supporting Multiple Data Types under the same TLS Session. *IADIS WWW/Internet Conference*.

- Badra, M., Urien, P., & Dandjinou, M. (in press, 2004). EAP-TLS Smartcards, from Dream to Reality. *IEEE workshop on Applications and Services in Wireless Networks*.
- Badra, M. & Urien, P. (in press, 2004). Introducing Smartcards to Remote Authenticate Passwords using Public Key Encryption. *IEEE Symposium on Advances in Wired and Wireless Communications*.
- Badra, M. & Urien, P. (in press, 2004). Toward SSL integration in SIM Smartcards. *IEEE Wireless Communications and Networking Conference, IEEE WCNC*.
- Badra, M. & Urien, P. (in press, 2004). Enhancing WLAN Security by Introducing EAP-TLS Smartcards. *IADIS WWW/Internet Conference*.
- Badra, M., Urien, P., Serhrouchni, A., & Godlewski, P. (in press, 2004). Une methode comparative pour etablir des solutions de securite basees sur SSL-WTLS. *IEEE SETIT 2004*.
- Badra, M. & Serhrouchni, A. (in press, 2003). Light TLS: Extended Handshake for Wireless Communications. *International Conference on Mobile and Wireless Communications Networks*.
- Badra, M. & Serhrouchni, A. (in press, 2003). A New Secure Session Exchange Key Protocol For Wireless Communications. *IEEE International Symposium on Personal, Indoor and Mobile Radio Communications, IEEE PIMRC*.
- Badra, M., Serhrouchni, A., & Godlewski, P. (in press, 2003). Extended Wireless Transport Layer Security. *IEEE workshop on Applications and Services in Wireless Networks, IEEE ASWN*.
- Badra, M. & Godlewski, P. (in press, 2002). SSL et WTLS: Etude Analytique et Comparative. *Conference on Security and Network Architectures*.

Book

- Mandler, B. (2016). *Proceedings of Internet of Things - Second International Summit, IoT 360°*.
- Zeadally, S. & Badra, M. (2015). *Privacy in a Digital, Networked World - Technologies, Implications and Solutions* Springer [B].
- Badra, M., Boukerch, A., & Urien, P. (2015). *Proceedings of New Technologies, Mobility and Security Conference and Workshops* IEEE.
- Badra, M. & Alfandi, O. (2014). *Proceedings of New Technologies, Mobility and Security Conference and Workshops* IEEE.
- Badra, M. & Sklavos, N. (2009). *Proceedings of Network and Service Security* IEEE.
- Al Agha, K., Badra, M., & Massacci, F. (2008). *Proceedings of New Technologies, Mobility and Security Conference and Workshops* IEEE.
- Labioud, H. & Badra, M. (2007). *Proceedings of New Technologies, Mobility and Security Conference and Workshops* Hermes Science Publications.

Book Chapters

Refereed

- Badra, M. & Zeadally, S. (2016). Security Issues in WiMAX Networks. *Handbook of Research on Wireless Security*. Encyclopedia of Information Systems and Technology.
- Badra, M., Zeadally, S., & Uludag, S. (2015). Techniques, Taxonomy, and Challenges of Privacy Protection in Smart Grid. In Press, In Springer (Ed.), *Privacy in a Digital, Networked World - Technologies, Implications and Solutions*.
- Badra, M. & Hecker, A. (2007). Security in Wireless Local Area Network (WLAN). *Handbook of Research on Wireless Security*. Information Science Reference.
- Hecker, A. & Badra, M. (2007). Security in 4G. *Handbook of Research on Wireless Security*. Information Science Reference.

Articles-in-Progress

- Badra, M. (2015). "A Lightweight Security and Authentication Protocol for NFC-Based Mobile Payments."
- Badra, M. (2013). "Passive Transport Layer Security (TLS) Clients."
- Badra, M. (2013). "Transport Layer Security (TLS) Client authentication Using IEEE 1609-2 Certificate."

Badra, M. & Hajjeh, I. (2011). "Multiplexing Single-Application Multiple-Connection over TLS."

Badra, M. & Hajjeh, I. (2011). "MTLS: Multiplexing TLS."

Badra, M. (2011). "SCSV for TLS Client Credential Protection."

Honors-Awards-Grants

Award

2015: , Zayed University.

Research Incentive Fund (RIF). Zayed University. As a Principle Investigator, I was awarded a RIF research for the amount of AED 96,000 for a research project entitled: "A New Privacy Solution for Urban Mobility and Traffic Control in Smart Cities"

2013: Start-up, Zayed University. As a Principle Investigator, I was awarded a start-up research for the amount of AED 4,000 for a research project entitled "Personalization in Wireless Sensor Networks."

2013: Research Incentive Fund (RIF), Zayed University. As a Principle Investigator, I was awarded a RIF research for the amount of AED 78,000 for a research project entitled "A Security Approach for Smart Grid Environments."

2012: , TRC Oman. As a co-Principle Investigator with Dr. Nafaa Jabeur and Dr Nabil Sahli, we were awarded a DHS 370,000 faculty research grant from the Omani Research Council for a research project entitled "SNEPMURE - Sensor Networks for an Enhanced and Personalized Management and Use of Resources" for the academic years 2009-2011..

2008 – 2009: , OSEO ANVAR. As a co-Principle Investigator with Dr. Ibrahim Hajjeh (INEOVATION, France), we were awarded a research proposal for developing a new security solution for secure virtual private networks. This was a very competitive request for proposals, and we won against top researchers from France. OSEO received 1,161 proposals and only 171 have been selected, which indicates that the selection committee was very impressed with the quality of our proposal and the expertise of the team members. The duration for this project was from 2008 to 2010 and the total compensation was 300,000 Euros. This award has contributed to co-funding the French society INEOVATION.

Grants & Gifts

Research

2009 [Year 1 of 2]: Badra, M. & Hajjeh, I., New security solution for virtual private networks, Co-Principal Investigator, OSEO ANVAR (French competition).

2009 [Year 1 of 2]: Badra, M., Jabeur, N., & Sahli, N., SNEPMURE - Sensor Networks for an Enhanced and Personalized Management and Use of Resources, Co-Principal Investigator, The Research Council - Oman.

2008: Badra, M. & Hajjeh, I., New security solution for virtual private networks, Principal Investigator, OSEO ANVAR (French competition).

IC Grid:

Category	DBS	CTP	LPS	Total
Articles in Refereed Journals	1	11		12
Articles in Refereed Journals (in Press)		1		1
Articles-in-Progress (All)	1	5		6
Publications in Refereed Conference Proceedings	2	35		37
Publications of Non-refereed or Invited Papers		4		4
Books, Monographs, Compilations, Manuals, Supplements, Chapters, Cases, Readings	4	7		11
Research Report, Non-Refereed	3			3
Grants - Funded (both refereed and non-refereed)	3	4		7
Grants - Pending (both refereed and non-refereed)	1			1

Other Research, Non-refereed		1		1
Totals	15	68		83

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