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RESEARCH INTEREST

Heterogeneous networks (HetNets); urban and outdoor small cell deployments and placements; mobile data offloading frameworks and techniques; smart city-enabling technologies; Internet of Things (IoT); machine learning in the IoT.

EDUCATION

- **Ph.D. in Computing** Sept 2009 – Oct 2014
School of Computing, Queen's University, Kingston, ON, Canada
 - **Dissertation:** *Mobile Small cells in Heterogeneous Cellular Networks*
 - **Advisor:** Prof. Hossam S. Hassanein
- **M.Sc. in Telecommunications Systems** Sept 2005 - Jan 2008
College of Computing and Digital Media, DePaul University, Chicago, IL, USA
- **B.Sc. in Computer Information Systems** Oct 2000 – Sept 2004
Faculty of Information Technology, Applied Science University, Amman, Jordan

ACADEMIC EXPERIENCE

- **Assistant Professor, Computer Science Dept.,** Oct 2019 to current
Faculty of Information Technology, Applied Science University, Amman, Jordan
 - **Teaching grad course;** introduction to scientific research
 - **Supervising and mentoring MSc students**
 - **Teaching undergrad courses include:**
 - *Data communications and computer networks*
 - *Discrete Structures (1)*
 - **Supervising final-year projects and academic advising for undergraduate students**
 - **Educational services:** participating in different committees at the department, faculty, and university levels:
 - *Head of scientific research committee - faculty of information technology 2019-2020*
 - *Head of external and industry affairs committee - faculty of information technology 2019-2020*
 - *Head of the faculty of information technology website committee 2019-2020*
 - *Member of computer skills competency exam, faculty of information technology 2019-2020*
- **Visiting Assistant Professor, School of Computing,** Sept 2018 to Aug 2019
Queen's University, Kingston, ON, Canada
 - **Teaching undergrad courses**
 - *CISC 435 Computer Networks (Fall 2018)*
 - *CISC P81 Computers: Applications and Implications (Fall 2018, Winter 2019)*
 - *CISC 234 Introduction to Computing and the Creative Arts (Winter 2019)*
 - **Mentoring grad students**

- **Developing a new undergrad course about the digital world (Internet of things (IoT), smart cities, and big data). This course will be offered in Fall 2019.**
- **Assistant Professor, Computer Science Dept.,** **Oct 2014 to Feb 2017**
 Faculty of Information Technology, Applied Science University, Amman, Jordan
 - **Teaching grad course;** introduction to scientific research
 - **Supervising and mentoring MSc students**
 - **Teaching undergrad courses include:**
 - *Data communications and computer networks (3 times)*
 - *Introductions to data communications and computer networks (2 times)*
 - *Computer networks (1) and computer networks (1) Lab (2 times)*
 - *Computer networks (2) Lab (2 times)*
 - *Networks management and monitoring Lab*
 - *Computer skills 1 and Computer skills 2 (several times)*
 - *Wireless and Mobile Computing (3 times)*
 - *Networks Security (2 times)*
 - **Supervising final-year projects and academic advising for undergraduate students**
 - **Educational services:** participating in different committees at the department, faculty, and university levels:
 - *Member of the Faculty of Information Technology Council, 2016, 2017*
 - *Head of Silver Jubilee Committee, university level, 2016*
 - *Member of the replacement committee, Faculty of Information Technology, 2016*
 - *Head of external affairs committee, Faculty of Information Technology, 2016, 2017*
 - *Member of community outreach committee, university level, 2016*
- **Visiting Assistant Professor, School of Computing,** **Mar 2017 to Feb 2018**
 Queen's University, Kingston, ON, Canada
 - **Teaching undergrad courses**
 - *CISC 435 Computer Networks (Fall 2017)*
- **Head of Computer Networks Systems Dept.,** **Sept 2016 to Feb 2017**
 Faculty of Information Technology, Applied Science University, Amman, Jordan
- **Founder and Lead, Cisco Networking Academy,** **Jan 2016 to Feb 2017**
 Faculty of Information Technology, Applied Science University, Amman, Jordan
- **Teaching Assistant (TA),** **Sept 2011 to Dec 2013**
 School of Computing, Queen's University, Kingston, ON, Canada
 - **CISC 435 computer networks course** (three terms), marked assignments and exams.
- **Lecturer, Dept. of Computer Science,** **Sept 2007 to Aug 2009**
 Faculty of Information Technology, Applied Science University, Amman, Jordan
 - **Undergrad courses taught include:**
 - *Data communications and computer networks and its lab (4 terms)*
 - *Computer networks (1) lab*
 - *Advanced Computer Networks (2 terms)*
 - *Computer Skills (1) and (2) (4 terms)*
 - *Visual Programming (VB.Net) (2 terms).*
 - **Final-year projects supervised, titled:**
 - *Court Customhouse System*
 - *Shopping Mall Mapping APP*
 - *E-clinic University System*
 - *Arabic Search Engine (2nd Place Winning Prize)*
 - *Charging Mobile's Credit by GPRS Service*
 - *Video, Voice, and Chat Mobile App*
 - *Content Management System*
 - **Mentoring and visiting undergraduate students in their replacement/internship training sites.**

- **Academic advising for undergraduate students.**
- **Academic services:** participating in different committees at the department, faculty, and university levels:
 - *Faculty and departmental level committees: exams, faculty website (chair), field training, and final-year graduation project*
 - *University-level committee: university website*

RESEARCH EXPERIENCE

Research Associate, Telecommunication Research Lab (TRL)

Mar 2017 to current

School of Computing, Queen's University, Kingston, ON, Canada

- Researching in the area of Internet of Things (IoT) and next-generation mobile networks
- Writing grants and research proposals
- Mentoring grad students

Research Assistant (RA), Telecommunication Research Lab (TRL)

Jan 2010 to Sept 2014

School of Computing, Queen's University, Kingston, ON, Canada

- Thesis on Mobile Small cells in LTE Heterogeneous Networks
 - *Quantifying and analyzing the performance gains of using LTE small cells in vehicles (aka, mobile small cells) by deriving closed-form expressions.*
 - *Proposing a novel mobile data offloading framework for LTE networks using mobile small cells and urban Wi-Fi; exploiting Wi-Fi coverage maps and dynamic user history profiling.*
 - *Devising several placement strategies of outdoor small cells via optimization formulations and greedy heuristics to achieve different objectives (maximizing offloading and minimizing power consumption and macro base stations airtime).*
- Conducted a comprehensive survey on femtocells mobility management and the proposed mobility schemes in literature.
- Developed system-level simulators in MATLAB and C++ to evaluate proposed small cell models.
- Disseminated research findings in journal and conference papers.
- Researcher in the international project: "bandwidth management in wireless broadband networks with economic considerations project", with over \$100,000 funding.
- Involved in submitting cellular-related funding grant proposals to various industry/government agencies.
- Delivered several presentations and tutorials on topics related to my research area and the new technological trends.

PROFESSIONAL EXPERIENCE

Network and Web Admin (Volunteer)

Jan 2010 to Oct 2014

Queen's Telecommunications Research Lab (TRL), QueensTRL.ca, Kingston, ON, Canada

Install and support LAN network segments and intranet systems.

Install and maintain network facilities, hardware, and software.

Assign routing protocols and routing table configuration.

Administer servers, desktop computers, printers, routers, switches, firewalls, smartphones, and software.

Design, develop and maintain websites using HTML and PHP.

Course Evaluation Assistant, Office of the University Registrar (Part-time)

Oct 2011 to May 2012

Queen's University, Kingston, ON, Canada

Administrator, Learning and Teaching Centre

Sept 2004 to Aug 2005

Faculty of Information Technology, Applied Science University, Amman, Jordan

- Head of a team consisting of 15 lab supervisors and one lecture rooms' supervisor.
- Responsible for technology planning for the faculty's 15 laboratories and 16 lecture rooms.

- Responsible for reporting to the faculty's Dean regarding the team's performance and the faculty's technological requirements.

TECHNICAL SKILLS

- **Networking:** Expert in dealing with networking (configuration, maintenance, design, operating and control) and solid knowledge at different layers of the TCP/IP suite.
- **Wireless Communications:** Deep understating of 3GPP technologies including LTE /LTE-A, HetNets, and small cells. Good understanding of Wi-Fi and its amendments.
- **Internet of Things (IoT):** Excellent knowledge and broad understanding of the Internet of Things (IoT) technologies and deployments.
- **Programming Languages:** C++, MATLAB, HTML, JavaScript, VB/VB.Net, and Assembly.
- **Tools:** Latex, MS Visio, Smart Draw, Gurobi Optimizer, Eclipse, Wireshark, Visual Studio, Adobe Acrobat Pro, GNS3, and Cisco Packet Tracer, Office 365.
- **Concepts:** Computer/Network systems design and analysis; object-oriented programming.

PUBLICATIONS

- A. Shaban, F. Almasalha, **M. Qutqut**, A Hybrid User Action Prediction System for Automated Home using Association Rules and Ontology, *IET Wireless Sensor Systems Journal*, Vol. 9, No. 2, pp. 85 – 93, 2019.
- R. Watheq, F. Almasalha, **M. Qutqut**, A New Steganography Technique using JPEG Images, (*IJACSA*) *International Journal of Advanced Computer Science and Applications*, Vol. 9, No. 11, pp. 751-760, 2018.
- **M. Qutqut**, A. Al-Sakran, F. Almasalha, and H. S. Hassanein, Comprehensive Survey of the IoT Open-Source OSs, *IET Wireless Sensor Systems Journal*, Vol. 8, No. 6, pp. 323 – 339, 2018.
- M Al-Janabi, **M. Qutqut**, and M. Hijjawi Machine Learning Classification Techniques for Heart Disease Prediction: A Review, *International Journal of Engineering and Technology (UAE)*, Vol. 7, No. 4, pp. 5373-5379, 2018.
- M. Majthoub, **M. Qutqut**, and Y. Odeh, Software Re-engineering: An Overview, *the 8th International Conference on Computer Science and Information Technology (CSIT)*, Amman, Jordan, July 2018, pp. 266 – 270.
- A. Al-Sakran, **M. Qutqut**, F. Almasalha, H. S. Hassanein, and M. Hijjawi, An Overview of the Internet of Things Closed Source Operating Systems, *14th International Wireless Communications and Mobile Computing Conference (IWCMC)*, Limassol, Cyprus, June 2018, pp. 291-297.
- M. Hamoudy, **M. Qutqut**, and F. Almasalha, Video Security in the Internet of Things (IoT): An Overview, *IJCSNS International Journal of Computer Science and Network Security*, Vol. 17, No. 8, pp 199-205, 2017.
- **M. Qutqut** and H. S. Hassanein, Mobility Management in Femtocell Networks, in *Future Wireless Networks: Architecture, Protocols, and Services*, edited by M. Guizani, Hsiao-Hwa Chen and C. Wang, CRC Press, 2016.
- **M. Qutqut**, H. Abou-zeid, H.S. Hassanein, A. Rashwan, and F. Al-Turjman, "Dynamic Small Cell Placement Strategies for LTE Heterogeneous Networks," *IEEE Symposium on Computers and Commun. (ISCC)*, Madeira, Portugal, June 2014.
- **M. Qutqut**, M. Feteiha, and H. S. Hassanein, "Outage Probability Analysis of Mobile Small cells over LTE-A Networks", *International Wireless Communications & Mobile Computing Conf. (IWCMC)*, Nicosia, Cyprus, Aug. 2014, pp 1045-1050.
- M. Feteiha and **M. Qutqut** and H. Hassanein, "Pairwise Error Probability Evaluation of Cooperative Mobile Femtocells", *In Proc. of the IEEE Global Communications (GLOBECOM)*, Atlanta, USA, Dec. 2013, pp. 4588-4593.
- **M. Qutqut**, F. Al-Turjman, and H. Hassanein, "HOF: A History-based Offloading Framework for LTE Networks Using Mobile Small Cells and Wi-Fi", *In Proc. of the IEEE Local Computer Networks (LCN) workshops*, Sydney, Australia, 2013, pp. 77-83.

- **M. Qutqut**, F. Al-Turjman, and H. Hassanein, "MFW: Mobile Femtocells utilizing WiFi", *In Proc. of the IEEE International Conf. on Communications (ICC)*, Budapest, Hungary, 2013, pp. 5020-5024.
- **M. Qutqut** and H. S. Hassanein, "Mobility Management in Wireless Broadband Femtocells", School of Computing, Queen's University, Technical Report 2012-590, July 2012.
- **M. Qutqut** and F. Al-Turjman, "MFW: Mobile Femtocells utilizing WiFi", (Poster) *in the fourth annual Queen's Graduate Computing Society Conf. (QGCSC)*, Kingston, ON, May 8-9, 2013.
- **M. Qutqut** and H. S. Hassanein, "Dynamic Small Cell Placement Strategies for HetNets", (Poster) *in the 5th Annual WiSense Workshop*, Ottawa, Ontario, Aug 29-30, 2014

PROFESSIONAL TRAINING

- Teaching Matters workshops, Centre for Teaching and Learning, Queen's University, 2019:
 - Active learning strategies
 - Decolonizing the curriculum
 - Group work: teaching students to work effectively and assessing their ability to do so.
 - Inclusion and accommodation
 - How to research your teaching through the scholarship of teaching and learning (SoTL)
- Cisco Networking Academy Introduction to the Internet of Things, Oct 2018.
- Cisco Networking Academy Introduction to Packet Tracer, 2018.
- Cisco Networking Academy Introduction to Cybersecurity course, 2017.
- [**MITACS STEP**](#) intensive workshops on:
 - Managing Projects (2011)
 - Foundations of Project Management I (2011)
 - Effective Networking (2012)
 - Business Conduct Excellence and Dining Etiquette (2012)
- Leadership Workshop, Institute of Management Consultants of Jordan (2005)
- Introduction to VB.Net and ASP.Net Programming, and Programming with Microsoft ADO.Net (2004)

PROFESSIONAL MEMBERSHIPS & ACTIVITIES

- Member of IEEE and IEEE Communications Society
- Member of ACM
- Research Associate, Queen's Telecommunications Research Lab, Canada
- **Publicity Co-Chairs** of the 8th International Conference on Computer Science and Information Technology (CSIT 2018).
- **Technical Program Committee (TPC) Co-Chair** of the 6th International Conference on Computer Science and Information Technology (CSIT 2016).
- **Technical Program Committee (TPC) member of:**
 - *IEEE International Conference on Communications (ICC) 2019*
 - *IEEE Wireless Communications and Networking Conference (WCNC) 2019*
 - *IEEE Middle East & North Africa COMMunications Conference (MENACOMM) 2019*
 - *Digital Image & Signal Processing Conference (DISP) 2019*
 - *International Conference on Computer Applications & Information Security (ICCAIS) 2019*
 - *IEEE International Conference on Communications (ICC) 2018*
 - *20th International Conference on Cybernetics and Intelligent Systems (ICCIS) 2018*
 - *International Conference on Computer Intelligent Systems & Networking (ICCISN) 2018*

- *IEEE Symposium on Personal, Indoor and Mobile Radio Communications (PIMRC) 2017*
- *IEEE International Conference on Communications (ICC) 2017*
- *International Conference on Computers, Data Management and Technology Applications (ICCDMTA) 2017*
- *IEEE International Symposium on Signal Processing and Information Technology (ISSPIT) 2015*
- *International Conference on Signal Processing & Data Mining (ICSPDM) 2015*
- *International Wireless Communications and Mobile Computing Conference (IWCMC) 2014*
- *Global Summit on Computer & Information Technology (GSCIT) 2014*
- *IEEE Symposium on Personal, Indoor and Mobile Radio Communications (PIMRC) 2013*
- **Referee for:**
 - *IEEE Access*
 - *IEEE Transactions on Wireless Communications*
 - *IET Communications*
 - *IEEE Global Communications Conference (GLOBECOM) 2018*
 - *World Symposium on Computer Applications & Research (WSCAR) 2017*
 - *IEEE Global Communications Conference (GLOBECOM) 2017*
 - *IEEE Wireless Communications and Networking Conference (WCNC) 2014*
 - *IEEE Local Computers and Networks (LCN) 2013*
 - *IEEE Student Conference Research and Development (SCOReD) 2013*
 - *IEEE Global Communications Conference (GLOBECOM), Green IoT Workshop 2012*
- President of Students Society, Applied Science University, 2003-2004
- Students' Representative at University Council, Applied Science University, 2003-2004
- President of Engineering & Computer Club, Applied Science University, 2001-2002
- Representative participant in the 2nd Youth Forum of Jordan, 2004

AWARDS & SCHOLARSHIPS

- Nominated for the Faculty of Arts and Science W.J. Barnes Teaching Excellence Award, Queen's University, Fall 2017.
- Supervisor of 1st and 2nd Place Winning final-year student projects of Faculty of Information Technology at Applied Science University, 20016/2017.
- Supervisor of 2nd Place Winning student project, 20th Middle East Exhibition of Information Technology, 2009, Jordan.
- Queen's School of Computing Students Travel Award, 2014
- Queen's Work Study Entitlement Award, 2011, 2012
- Supervisor of 2nd Place Winning student project, 20th Middle East Exhibition of Information Technology, 2009
- Ph.D. Scholarship from Applied Science University, 2009

REFERENCES

To be supplied upon request.