Khaled M. Matrouk

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School of Engineering
Computer Engineering Department
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PERSONAL DATA

Nationality: Jordanian
Date of Birth: March 13, 1973
Place of Birth: Ma'an, Jordan
Marital Status: Married with Four Children; Leen, Abdurahman, Laith and Kenan

MAIN RESEARCH INTEREST

Computer Networking	Modelling and Simulations
Wireless Sensor Networks	Ad-Hoc Networks
Internet of Things (IoT)	Cloud and Fog Computing

MAIN TEACHING INTEREST

Data Communication and the Internet	Computer Networks
Network Protocols and Programming	Wireless Networks
Java Programming	Algorithms
Distributed Systems	Analog Communication
Digital Communication	Digital Electronics
Digital logic design	Engineering Mathematics
Special Topics in Computer Networks (IoT)	Real-Time Systems

EDUCATION

PhD in Computer Engineering, University of Sydney, Australia, May 2004-November 2007.
Thesis Title: RETT: Equalising Energy Routing Algorithm for Wireless Sensor Networks.

Master in Computer Engineering, University of Newcastle, Australia, October, 2002 – February 2004.

Master in Electrical Engineering, Jordan University of Science and Technology, Jordan, September 1999 – September 2001.

Bachelor in Telecommunication Engineering, Yarmouk University, Jordan, September 1991 – May 1996.

RESEARCH EXPERIENCE

- **Master Thesis Supervision (Principal Supervision):**

Students:
1- Batool Alaya (conducting a research in Load balancing in Fog Computing)
2- Kholood Eltoon (conducting a research in Scheduling in Fog Computing)
3- Abir Al-Esa (conducting a research in Fog Computing Security)
4- Malak Abu Helala (conducting a research in Cloud computing Security)

Alumni
1- Walaa Ghazawi
Thesis title: An Energy Efficient Routing Protocol in Wireless Sensor Networks (2019)
2- Manar Daseen
Thesis title: Enhancement of Security Services for WSN (2020)

- **Researching the field of Computer Engineering areas such as:**
  Routing in Wireless Sensor Networks, Protocols, Parallel Computing, Neural Networks, Cloud Computing, Fog Computing, and Delay Tolerant Networks.

- **Reviewing many international conference papers in the field of wireless computer networks and routing algorithms.**

- **Reviewing many international journal papers in the field of wireless computer networks and routing algorithms.**

- **Presented many research papers at international conferences.**

- **Giving many talks in the area of Cloud Computing Fog Computing and the Internet of Things.**

PROFESSIONAL EXPEREINCES

August, 2014
Associate Professor in Wireless Computer Networks at Al-Hussein Bin Talal University, Ma'an – Jordan.

November 2008 – August, 2014
Assistant Professor at Al-Hussein Bin Talal University, Department of Computer Engineering. During this period I've been working as:

   I. **Vice Dean of Engineering Faculty, August 2013 up to September 2015.**

  II. **Head of Computer Engineering Department, September 2009 up to September 2011.**

 III. **Head of Communication Engineering Department, September 2010 up to September 2011.**

 IV. **A lecturer for several courses:** Computer Networks (I), Computer Networks (II), Advanced Computer Networks (Postgraduate level), Digital Integrated Circuits, Digital Logic Design, Real-Time Systems, Advanced Real-Time Systems (Postgraduate level), Distributed Systems, Advanced Distributed Systems (Postgraduate level), Electric Circuits I, Electric Circuits II, Engineering Analysis, Analogue and Digital communication systems, Engineering Mathematics, Special Topics in Computer Engineering (Internet of Things), Digital Communication, Digital Electronic Circuits Lab, Digital Logic Design Lab and supervising many Graduation projects**.**

  V. **Curriculums and courses development**

   1. Curriculum development of Computer Engineering Department (2009 & 2014)

   2. Curriculum development of Communication Engineering Department (2010)

   3. Established the Electrical Engineering Department along with its curriculum development (2014)

   4. Established the Computer Engineering and Networks Master Degree Program along with its curriculum development (2016).

November 2007 – November 2008.

I.   Lecturer, the University of Ballarat at IIBIT, Sydney, Australia

I have been hired by Synergy Consultancy Services for lecturing at the University of Ballarat at IIBIT, Sydney. The courses that I have taught include Operating Systems, Computer Networks, Networks Protocols and Services. Further, I was responsible for marking the student's assignments, marking the mid-semester and final exams.

II.   Lecturer, *Sydney University, Sydney, Australia.*

I have been hired by Sydney University for lecturing. The course that I have taught was Data Communications and the Internet. Moreover, I was responsible for marking the student's assignments, marking the mid-semester and final exams.

October 2002 – November 2007.

Postgraduate studies (Master and Ph.D.) at the University of Newcastle and the University of Sydney, during this period I've been employed as:

I.   Tutor in The School of Electrical Engineering, 2004 – 2007:

Tutored various subjects in the school's undergraduate program, including Data Communications and the Internet, Engineering Electromagnetic, and Advanced Communication Networks. A tutor who had the responsibility for the Preparation of the experimental procedure, setup of the experimental apparatus, providing the introduction of the experiment, responding to students' questions they encountered in the experiment, and grading their reports.

II.   Research Assistant in the School of Electrical Engineering, March 2006 – July 2007.

III.   System Engineer, IT Interactive Services PTY LTD, Chifley, NSW, 2002-2003.
Main responsibilities: Implementing data backup and other system housekeeping procedures, coordinating the system update and replacement of the old version, assisting in testing new equipment and systems.

September 1999 – October 2002.

Postgraduate studies (Master) at Jordan University of Science and Technology, during this period I've been employed as:

- Tutor in the School of Electrical Engineering:

Tutored various subjects in the school's undergraduate program, including Linear Algebra, Digital Signal Processing, and Digital Electronic Circuits. The tutor who had the responsibility for the Preparation of the experimental procedure, setup of the

experimental apparatus, providing the introduction of the experiment, responding to students.

October 1996 – September 1999

Telecommunications Engineer, Telecommunications Regulatory Commission (TRC), Amman, Jordan.

Main Duties:
- Participating in the inspection activities carried out to ensure the proper operation and compliance of the licensees with their granted authorizations/ Licenses.
- Carrying out different technical measurements for different types of radio equipment and evaluating their performance and compliance with national and international standards.
- Maintaining periodical reports and updating inspection records for the operating radio stations in Jordan.
- Working with other engineers in the Radio Spectrum Management department to locate and resolve interference problems**.**

COMPUTER SKILLS
Computer Languages: MATLAB/Simulink, JAVA, Python

TRAINING COURSES
- **Tutor and Demonstrator Training - Management of Small Group Teaching and Learning Course**, School of Electrical and Information Engineering and Institute for Teaching and Learning, The University of Sydney, Sydney, Australia, 2004
- **Laboratory Techniques in Support Equipment Authorization Programs**, sponsored by Federal Communications Commission and the United States for Telecommunications and Training Institute (USTTI), Columbia, Maryland, USA, 1998
- **Practical Application of Spectrum Management and Spectrum Monitoring**, sponsored by Technology for Communication International (TCI) and the United States for Telecommunications and Training Institute (USTTI), Sunnyvale, California, USA, 1998
- **Operating and maintaining Radio Equipment, Communication Systems (Motorola equipment and RF Tel Radio Link)**, Amman, Jordan, 1998
- **Introduction to Synchronous Digital Hierarchy System (SDH)**, Training Centre of the Jordan Telecommunications Company (JTC), Amman, Jordan, 1997
- **Skills of Dealing with Others** (Communication Skills), Centre of Consultation, Technical Services, and Studies, University of Jordan, Amman, Jordan, 1997

AWARDS

- National ICT Australia Research Project Award scholarship (NICTA-NRPA) 2005-2006
- Research Al-Hussein Bin Talal University (AHU) scholarship 2002-2006
- Norman I Price scholarship (NIP), University of Sydney, 2003-2006
- Cochlear Prize for Next-Generation Applications, 2005

PROFESSIONAL AFFILIATIONS

Member of the Institute of Electrical and Electronics Engineers (IEEE)
Member of Jordan Engineers Association (JEA)

PUBLICATIONS
Journals articles:

1. K. Matrouk and B. Landfeldt, " RETT-gen: a globally efficient routing protocol for wireless sensor networks by equalising sensor energy and avoiding energy holes," *Ad Hoc Networks Journal (Elsevier),* 7 (3), 2009.

2. K. Matrouk and B. Landfeldt, "Prolonging the system lifetime and equalizing the energy of heterogeneous sensor network using RETT protocol" *International Journal of Sensor Networks (IJSNet)*, 6 (2), 2009.

3. H. Alasha'ary, K Matrouk, A. Al-Hasanat, Z. Al-Qadi, H. Al-Shalabi,' Improving Matrix Multiplication Using Parallel Computing" *International Journal on Information Technology (IREIT)*, 1 (6), 2013.

4. K Matrouk, A. Al-Hasanat, H. Alasha'ary, Z. Al-Qadi, H. Al-Shalabi, " Speech Fingerprint to Identify Isolated Word-Person", *World Applied Sciences Journal*, 31 (10): 1767-1771, 2014.

5. K Matrouk, H. Alasha'ary, A. Al-Hasanat, Z. Al-Qadi, H. Al-Shalabi, "Investigation and Analysis of ANN Parameters", *European Journal of Scientific Research*, 121 (2), 2014.

6. K Matrouk, A. Al-Hasanat, H. Alasha'ary, Z. Al-Qadi, H. Al-Shalabi, "Analysis of Matrix Multiplication Computational Methods", *European Journal of Scientific Research*, 121 (3), 2014.

7. A. Al-Hasanat, H. Alasha'ary, K Matrouk, Z. Al-Qadi, H. Al-Shalabi, "Experimental Investigation of Training Algorithms Used in Back propagation Artificial Neural Networks to Apply Curve Fitting" *European Journal of Scientific Research*, 121 (4), 2014.

8. H. Alasha'ary, A. Al-Hasanat, K Matrouk, Z. Al-Qadi, H. Al-Shalabi, "A Novel Digital Filter for Enhancing Dark Gray Images", *European Journal of Scientific Research*, 122 (1), 2014.

9. A. Alhasanat, K. Matrouk, H. Alasha'ary, and Z. Al-Qadi, "Connectivity-Based Clustering Algorithm for Data Gathering with Path-Constrained Mobile Sink in Wireless Sensor Networks", *Wireless Sensor Network*, 6(1), 118-128, 2014.

10. Haitham Alasha'ary, Abdullah Al-Hasanat, Khaled Matrouk, Ziad Al-Qadi," Analysis and Optimization of PID Controller Parameters for a Second-Order Transfer Function", *Middle-East Journal of Scientific Research,* 23 (8): 1685-1691, 2015.

11. Abdullah Alhasanat, Mohanad Al-Hasanat, Saud Althunibat, Khaled M. Matrouk, "A Probabilistic Home-based Routing Scheme for Delay Tolerant Networks", *Wireless Networks,*1-12, 2019.

Conferences:

1. K. Matrouk and B. Landfeldt, " Energy-conservation clustering protocol based on heat conductivity for wireless sensor networks," in *Proceedings of the IEEE International Conference on Intelligent Sensors, Sensor Networks and Information Processing,* Melbourne, Australia, December, 2004, pp.19-24.
2. K. Matrouk and B. Landfeldt, " Equalising sensor energy and maximizing sensor network lifespan using RETT," in *Proceedings of the International Workshop on Algorithmic Aspects of Wireless Sensor Networks,* LNCS, Springer Verlag, Venice, Italy, July, 2006, pp. 200-207.
3. K. Matrouk and B. Landfeldt, " Equalising sensor energy and maximizing sensor network lifespan using RETT-generalised," in *Proceedings of the ACoRN Early Career Researcher Workshop on Wireless Multihop Networking,* Sydney, Australia, July,2006.

TECHNICAL REVIEWER

JOURNALS
1. EURASIP Journal on Wireless Communications and Networking.
2. Journal of Parallel and Distributed Computing.
3. International Journal of Computer Communication.
4. International Journal of Sensor Networks (IJSNet).
5. International Journal of Pervasive Computing and Communications.
6. International Journal of Information Sciences.
7. Jordan Journal of Electrical Engineering (JJEE).
8. International Journal of Networked and Distributed Computing (IJNDC)

CONFERENCES
1. IEEE Vehicular Technology Conference (VTC).
2. Mosharaka Multi-Conference on Communications, Propagation, and Electronics (MM-CPE).
3. IEEE International Conference on Communications (ICC).
4. International Conference on Innovations in Information Technology.
5. IEEE Global Telecommunications Conference (GLOBECOM).
6. IEEE Wireless Communications & Networking Conference (IEEE WCNC).
7. The 10th Jordan International Electrical & Electronics Engineering Conference (JIEEEC 2017).

CONFERENCE SESSIONS CHAIRED

International Conference on Modelling and Simulation 2008 (MS '08), AMSE Organization, Petra, Jordan 2008.

COMMITTEES
1. The 10th Jordan International Electrical & Electronics Engineering Conference (JIEEEC 2017), Jordanian Engineering Association, Amman, Jordan 2017.
2. Member of the organizing committee of the international conference on Modelling and Simulation (MS'08), AHU, 2008.
3. Chair, many tenders' committees, AHU.
4. Chair, installation of Engineering College laboratories committee, AHU, 2013.

REFERENCES will be furnished upon request.