

# Heba A. Kurdi

King Saud University | Computer Science Department | Assistant Professor

Tel: +966 (0) 555669791, hkurdi@ksu.edu.sa

MIT | Aeronautics and Astronautics Department | Research Fellow

Tel: 8579981776, hakurdi@mit.edu

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## SUMMARY

A highly organized and goal-oriented Assistant Professor in Computer Engineering with more than ten years of academic and administrative experience. Excellent skills in problem solving and critical thinking. Particular ability in establishing affinity and communicating effectively with people from diverse backgrounds. Natural leader and enthusiastic compelling team member. Highly passionate engineer with history of productivity and successful outcomes.

## EDUCATION

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|------------|---|
| 2005-2010  | PhD – Computer Engineering – Wireless Networks & Communication – School of Engineering and Design - Brunel University (Brunel Engineering was ranked 5th in the UK in the Guardian University Guide 2010)– Uxbridge – UK. |
| 2001- 2003 | Master Degree - Applied Computer Sciences – College of Computer & Information Science - King Saud University – Riyadh – KSA.  |
| 1997- 1999 | Bachelor Degree - Computer Applications – College of Computer & Information Science - King Saud University – Riyadh – KSA.  |

## CERTIFICATES

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| 2015 | Executive Certificate in Management and Leadership, MIT Sloan School of Management, MIT, MA. |
| 2015 | Executive Certificate in Strategy and Innovation, MIT Sloan School of Management, MIT, MA.   |
| 2015 | Human Resource Management, Harvard Business School, Harvard University, MA.                  |
| 2015 | Kauffman Teaching Certificate, MIT, MA.  |
| 2010 | Associate Fellow– Higher Education Academy - UK.   |

## PROFESSIONAL TRAINING

I have attended several training courses. Here are few examples:

- Taking the challenge of big data
- Leading academics effectively
- Project Management Professionals (PMP)
- Project management using MS Project
- Professional presentation skills
- Public speaking
- Understanding political messages

- Business and academic writing
- Strategic planning
- Handling negative feelings

## **ACADEMIC POSITIONS**

2014- Present	Research Fellow- Department of Aeronautics and Astronautics – MIT, Cambridge, MA.
2015 – Present	Assistant Professor - Computer Science Department - College of Computer and Information Sciences – King Saud University – Riyadh – KSA.
2010 – 2015	Assistant Professor - Computer Science Department - College of Computer and Information Sciences – Al-Imam Muhammad Ibn Saud Islamic University – Riyadh – KSA.
2004 – 2010	Lecturer – Computer Science Department - College of Computer and Information Sciences - Al- Imam Muhammad Ibn Saud Islamic University – Riyadh – KSA.
2003 – 2004	Teacher assistant – Computer Science Department - College of Computer and Information Sciences - Al- Imam Muhammad Ibn Saud Islamic University – Riyadh – KSA.

## **MANAGEMENT AND CONSULTING EXPERIENCES**

2012- 2014	Project Manager for the Cloud Computing Research Project (24 Months project) funded by National Plan for Science, Technology and Innovation, Riyadh, KSA.
2013- 2014	Academic Consultant, Princess Nora Bint Abdul Rahman University, Riyadh.
2011- 2013	Vice Dean of Business career and Entrepreneurship, Al-Imam Muhammad Ibn Saud Islamic University – Riyadh – KSA.
2010 – 2011	Head of the Girls’ Section Computer Science Department - College of Computer and Information Sciences – Al-Imam Muhammad Ibn Saud Islamic University – Riyadh – KSA.
2004 – 2005	Head of the Girls’ Section -College of Computer and Information Sciences - Al- Imam Muhammad Ibn Saud Islamic University – Riyadh – KSA.
2001 – 2002	System analyst - Assistant Deputy Minister of the Educational Affairs – Ministry of Education – Riyadh – KSA.

## **SELECTED AWARDS AND LETTERS OF APPRECIATION**

2013	Best Paper Award at Science and Information Conference (SAI 2013), Sponsored by IEEE and Springer, London. UK.
2011	A Certificate of Associate Fellow of the Higher Education Academy, UK.
2012	Honor Shield from Rector of Imam Muhammad Ibn Saud Islamic University for academic and administrative contributions to the university
2011	A Certificate of appreciation from the General Administration of Education in Riyadh

- Region - where a project I supervised won in the Olympics National Science Innovation
- 2010 Trophy of distinction from the Saudi Cultural Bureau in the UK in recognition of outstanding research.
- 2010 Two letters of appreciation from HRH Saudi Ambassador Prince Mohammed bin Nawaf for remarkable contributions in organizing the Domestic Violence Forum as the head of the forum organizing committee, London. UK.
- 2006-2008 Three Thank you letters form Princess Fadwa Bint Khalid, wife of HRH Saudi Ambassador Prince Mohammed bin Nawaf for remarkable contributions in organizing social events and bazars for Saudi community, London, UK
- 2007 Letter of appreciation from the head of the Wireless Networks and Communication Centre (WNCC) in the UK for remarkable contributions in the submission of the European Union ICT project: CAP-NET: Context Aware Personal Network for Enhanced Service Provision
- 2007 Letter of appreciation from the head of the Wireless Networks and Communication Centre (WNCC) in the UK for remarkable contributions in the submission of the European Union ICT project: PiViC: Service Centric Personalized Virtual Computer
- 2006-2008 Four Thank you letters from the Saudi Cultural Attaché in the UK for distinguished progress during PhD study.

## **GRANTS**

- [1] Research Gant for one year Research Fellowship at MIT, from ARAMCO.
- [2] Research Gant (74,000 SR) for a visiting Researcher from King AbdulAziz City for Science and Technology, KSA.
- [3] Research Grant -PI (1,500,000 SR) for a cloud computing research project from Nation Plan for Science, Technology and Innovation, KSA, completed with excellence.
- [4] Research Grant -Co-PI (1,500,000 SR) for Cloud Gaming as-a Service (CGaaS) for Tele-Rehabilitation purposes research project from Nation Plan for Science, Technology and Innovation, KSA (approved).

## **SELECTED PUBLICATIONS**

### **Patents**

- [1] H. Kurdi, "Method of forming a mobile grid system and resource scheduling thereon," patent- United States Patent and Trademark Office, US 8,296,765 B2; Issued October 23, 2012. [<http://www.google.com/patents/US20120030683>]
- [2] H. Kurdi, J. How, M.I.T. Case No. 18052, "Method of Forming an Autonomous Multi-UAV Search and Rescue System with Task Allocation Thereon".

### **Thesis**

- [3] H. Kurdi, "Personal Mobile Grids with a Honeybee Inspired Resource Schedule,"

- PhD thesis, School of Engineering and Design, Brunel University, Uxbridge, UK, 2010. [<http://bura.brunel.ac.uk/handle/2438/4519>]
- [4] H. Kurdi, "Emotion Tutorial: An E-Learning Tool for Autistic Children," MSc thesis, King Saud University, King Fahad Nation Library, Riyadh, KSA, 2004.

### Book chapters

- [5] H. Kurdi, M. Li, and H. Al-Raweshidy, "Taxonomy of grid systems," book chapter, in the *Handbook of Research on P2P and Grid Systems for Service-Oriented Computing: Models, Methodologies and Applications*, N. Antonopoulos, G. Exarchakos, M. Li and A. Liotta, Eds., USA: Information Science Publishing, 2010. [<http://www.igi-global.com/chapter/taxonomy-grid-systems/40796>]

### Journals

- [6] S. Allsmail, H. Kurdi, "Review of Energy Reduction Techniques for Green Cloud Computing," *International Journal of Advanced Computer Science and Application*, (ISI journal), 2016, vol7 , pp 189-197.
- [7] H. Kurdi, S. Alnasser and M. Alhelal, "AuthenticPeer: A Reputation Management System for Peer-to-Peer Wireless Sensor Networks," *International Journal of Distributed Sensor Networks*, (ISI journal), Vol. 2015, pp. 1-11, [<http://dx.doi.org/10.1155/2015/637831>]
- [8] H. Kurdi, A. Al-Anazi, C. Campbell, A. Alfaries, "A Combinatorial Optimization Algorithm for Multiple Cloud Service Composition," *Computers & Electrical Engineering* (ISI journal), Vol. 42, 2015, pp 107–113, DOI 10.1016/j.compeleceng.2014.11.002 [<http://www.sciencedirect.com/science/article/pii/S0045790614002717>]
- [9] H. Kurdi, S. Hamad, A. Khelifa, "Towards a Friendly User Interface on the Cloud," *Lecture Notes in Computer Science*, Vol. 8518, pp. 148-15, 2014, (ISI Conference Proceedings Journal), DOI 10.1007/978-3-319-07626-3\_14. [[http://link.springer.com/chapter/10.1007%2F978-3-319-07626-3\\_14](http://link.springer.com/chapter/10.1007%2F978-3-319-07626-3_14)]
- [10] H.. Kurdi, A. Alfayez, S. Alkharji, H. Almohammadi, M. Almutairi, A. Altuwaim, "A Cloud-Based Mobile Environmental Application for Riyadh City," , *Lecture Notes in Computer Science*, (ISI Conference Proceedings Journal), Vol. 9188, pp. 380-389, July 2015, [[http://link.springer.com/chapter/10.1007/978-3-319-20889-3\\_36](http://link.springer.com/chapter/10.1007/978-3-319-20889-3_36)]
- [11] H. Kurdi, "Personal Mobile Grids: Ubiquitous Grid Environments for Personal Users," *International Journal of Ubiquitous Systems & Pervasive Networks*, Vol.6, pp 1-10, 2015, ISSN Print: 1923-7324 [[http://www.iasks.org/sites/default/files/JUSPN20150601001010\\_0.pdf](http://www.iasks.org/sites/default/files/JUSPN20150601001010_0.pdf)]
- [12] H. Kurdi, "HonestPeer: An Enhanced EigenTrust Algorithm for Reputation Management in P2P Systems," *Journal of King Saud University - Computer and Information Sciences*, Vol. 27, Issue 3, 2015, pp. 315–322, DOI 10.1016/j.jksuci.2014.10.002 [<http://www.sciencedirect.com/science/article/pii/S1319157815000440>]
- [13] H. Kurdi, E. Alotaibi, "A hybrid approach for scheduling virtual machines in private clouds ," *Procedia Computer Science* (ISI Conference Proceedings Journal), 2014, Volume 34, pp. 249–256. DOI: 10.1016/j.procs.2014.07.019

[<http://www.sciencedirect.com/science/article/pii/S1877050914008746>]

- [14] H. Kurdi, E. Aloboud, S. Alhasan, E. Alotaibi “An algorithm for handling starvation and resource rejection in public clouds,” *Procedia Computer Science* (ISI Conference Proceedings Journal), Volume 34, 2014, pp. 242–248, DOI: 10.1016/j.procs.2014.07.018.  
[<http://www.sciencedirect.com/science/article/pii/S1877050914008734>]
- [15] H. Kurid, T. Alnusairi, H. Almujaheed, “OBAME: Optimized Bio-inspired Algorithm to Maximize Search Efficiency in P2P Databases,” *Procedia Computer Science* (ISI Conference Proceedings Journal), Vol. 21, 2013, pp. 60-67.  
<http://www.sciencedirect.com/science/article/pii/S187705091300803X>
- [16] H. Kurdi, S. Alkhaider, N. Alfaihi, “Development and Evaluation of a Web Based Question Answering System for Arabic Language,” *International Journal in Natural Language Computing (IJNLC)*, vol. 3 no. 2, 2014, pp.12-32, DOI : 10.5121/ijnlc.2014.3202.  
<http://airccse.org/journal/ijnlc/papers/3214ijnlc02.pdf>
- [17] H. Al-Souly, A. Al-Sheddi, H. Kurdi, “Lightweight Symmetric Encryption Algorithm for Secure Database,” *International Journal of Advanced Computer Science and Applications*, vol. 3, no. 4, 2013, pp. 53-62. DOI 10.14569/SpecialIssue.2013.030407  
<http://thesai.org/Publications/ViewPaper?Volume=3&Issue=4&Code=SpecialIssue&SerialNo=7>].
- [18] H. Kurdi, “Review on Aspect Oriented Programming,” *International Journal of Advanced Computer Science and Applications (IJACSA)*, vol. 4, no. 9, 2013, pp. 22-27, DOI 10.14569/IJACSA.2013.040904.  
[http://thesai.org/Downloads/Volume4No9/Paper\\_4-Review\\_on\\_Aspect\\_Oriented\\_Programming.pdf](http://thesai.org/Downloads/Volume4No9/Paper_4-Review_on_Aspect_Oriented_Programming.pdf)],
- [19] C. Campbell, K. Loo, H. A. Kurdi and S. Khan, “Comparison of IEEE 802.11 and IEEE 802.15.4 for Future Green Multichannel Multi-radio Wireless Sensor Networks (WSNs),” *International Journal of Communication Networks and Information Security*, vol. 3, no.1 , 2011, pp. 96-103. [<http://www.ijcnis.org/index.php/ijcnis/article/view/75/71>]
- [20] H. Kurdi, M. Li and H. S. Al-Raweshidy, “A classification of traditional and emerging grid systems,” *IEEE Distributed Systems on line*, vol. 9, no.3, pp.1, Mar. 2008. ISSN: 1541-4922. [<http://ieeexplore.ieee.org/stamp/stamp.jsp?tp=&arnumber=4483779>]

## Conferences

- [21] H. Kurdi, J. How, G. Bautista, “Bio-Inspired Algorithm for Task Allocation in Multi-UAV Search and Rescue Missions,” in *Proc. of AIAA Guidance, Navigation, and Control Conference*, (ISI Conference Proceedings), 4-8 January 2016, San Diego,
- [22] H. A. Kurdi, A. Al-Rumaih, A. Al-Moammar, A. Al-Qahtani, A. Al-Abdullah, S. Al-Ghazzi, N. Al-Ajlan, “A Mobile Cloud Application for Crowd Management in the Grand Holy Mosque,” in *Proc. of International Conference on Next Generation Computing and Communication Technologies 2014 (ICNGCCT'14)* , 23-24 April 2014, Dubai, UAE.
- [23] E. Al-rayies, H. Kurid, “Performance Analysis of load balancing Architectures in Cloud computing,” *In proc. of The 7th European Modelling Symposium on Mathematical Modelling and Computer Simulation* (ISI Conference Proceedings), 20-22 November 2013, Manchester, UK.
- [24] H. Kurid, M. Enazi, A. Al-Faries, “Evaluating Firewall Models for Hybrid Clouds,” *In*

*proc. of The 7th European Modelling Symposium on Mathematical Modelling and Computer Simulation (ISI Conference Proceedings)*, 20-22 November 2013, Manchester, UK.

- [25] H. Kurid, "Survey on Traffic Control using Closed Circuit Television (CCTV)," *In proc. of The International Conference on Digital Information Processing, E-Business and Cloud Computing DIPECC*, 23-25 October, Dubai, UAE.  
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- [29] H. kurdi, H. S. Al-Raweshidy and M. Li "Design and Evaluation of A Personal Mobile Grid" in *Proc. of the International Conference on Advanced IT, engineering and Management AIM 2012*, Jul. 2012, Jeju, Korea.
- [30] H. Kurdi, A. S. Al-Wabil, "Research Study on Saudi Females Pursuing their Academic Studies Abroad," in *Proc. of Saudi Females education conference*, 2011, Riyadh, KSA.
- [31] H. kurdi, H. S. Al-Raweshidy and M. Li "Personal Mobile Grids," Presented at the *9<sup>th</sup> UK e-Science All Hands Meeting AHM2010*, Sep. 2010, Cardiff, UK.
- [32] H. kurdi, N. H. Saeed, , M. F. Abbod and H.S. Al-Raweshidy, "An Intelligent Routing Scheme for Mobile Ad-hoc Networks," in *Proc. of the 4<sup>th</sup> Saudi International Conference SiC10*, Jul. 2010, Manchester, UK.
- [33] H. Kurdi, M. Li and H. S. Al-Raweshidy, "A bio-inspired heuristic for non-clairvoyant scheduling," in *Proc. of the 3<sup>rd</sup> Saudi International Conference SiC09*, Jun. 2009, Surrey, UK.
- [34] H. kurdi, N. H. Saeed, , M. F. Abbod and H. S. Al-Raweshidy, "IMAN: Intelligent MANET Routing System," in *Proc. of the 3<sup>rd</sup> Saudi International Conference SiC09*, Jun. 2009, Surrey, UK.
- [35] H. Kurdi, M. Li and H. S. Al-Raweshidy, "A generic framework for resource scheduling in Personal Mobile Grids based on honeybee colony," in *Proc. of the IEEE 3<sup>rd</sup> International Conference on Next Generation Mobile Applications, Services and Technologies IEEE NGMAST '09 (ISI Conference Proceedings)*, pp. 297-302, Sep. 2008, Cardiff, UK.  
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- [37] H. Kurdi, M. Li and H. S. Al-Raweshidy, "A bio-inspired scheduling heuristic for Personal Mobile Grids," in *Proc. of the 14<sup>th</sup> International Conference on Automation and Computing ICAC08*, Sep. 2008, Uxbridge, UK.  
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- [38] H. Kurdi, M. Li and H. S. Al-Raweshidy, "HoPe: a honeybee inspired resource scheduling heuristic for Personal Mobile Grids," in *Proc. of the 2<sup>nd</sup> Saudi Innovative International Conference SiiC08*, 9-10 Jun. 2008, Leeds, UK.
- [39] H. Kurdi, H Al-Raweshidy, I. Khan and M. Li, "PM-Grid: A Personal Mobile Grid for Ubiquitous Computing Environments," in *Proc. of the 1<sup>st</sup> Saudi International Conference SIC07*, May 2007, Newcastle, UK.
- [40] H. Aboalsamh, G. Assassa, H. Kurdi, "The Development of an E-Learning Tool for Autistic Children," in *Proc. Of 1<sup>st</sup> National IT Symposium NITS200, Bridging the Digital Divide: Challenges and Solutions*, Feb. 2006, KSA.

## PROFESSIONAL MEMBERSHIPS

- Associate Fellow: Higher Education Academy, UK.
- Member of AWIS: Association of women in Science.
- Member of IEEE: Institute of Electrical and Electronics Engineers.
- Member of WiE: Institute of Women in Engineering.
- Member of ICST: Institute for Computer Sciences, Social Informatics and Telecommunications Engineering.
- TPC member in several international conferences and reviewer in several international journals.

## SOCIAL PARTICIPATIONS AND OTHER EXPERIENCES

- Head of the Organizing Committee for the Saudi First Forum of Domestic Violence, London, 2010.
- Diplomat: During my course of PhD study in the UK, I was a diplomat (wife of the Saudi Health attaché). This has widen my experience, by participating and attending several diplomat and VIP events which added to my communication and social skills (2005-2010).
- Head of the media of Tawasul Group, a volunteer group of Saudi ladies for helping Saudi females and families in the UK (2006-2009).
- Founder of Mobta3athat newsgroup, the main communication media for Saudi females studying in the UK (2005-2011).
- Al-Imam Mohammad Ibn Saudi Islamic University representative in the donation program for Handicapped Children Association.

## **TEACHING EXPERIENCE**

- Introduction to programming
- Object oriented programming
- Distributed systems
- Design and analysis of algorithms
- Seminar in Computer Science
- Advanced Database
- Cloud computing
- Web Technology

I have also supervised several BSc. graduation projects and MSc. theses.

## **RESEARCH INTERESTS**

- Multi agent systems and Unmanned Ariel Vehicles (UAVs)
- Bio-inspired engineering.
- Large scale computing systems, cloud computing and grid computing
- Wireless and mobile networks
- Human computer interaction