

Abd-Elhamid Mohamed Taha

School of Computing, Queen's University, Kingston, Ontario, K7L 3N6

Tel: +1 (613) 533-6000 X75029, Fax: +1 (613) 533-6513

E-mail: taha@cs.queensu.ca, URL: <http://www.cs.queensu.ca/~taha>

Research Interests

Developing operationally efficient resource management functionalities in wireless and mobile networks, with consideration for both access and end-to-end requirements.

Expertise

- Wireless and mobile networking, networking architectures and protocols, network resource management techniques.
- Modeling, deterministic and probabilistic optimization techniques, statistical analysis, game theory.
- Network simulation; mathematical packages (MATLAB); computer languages (Assembly, C, Java, HTML).

Education

Ph.D. in Electrical and Computer Engineering, Queen's University, September 2007.

A framework for radio resource management in heterogeneous wireless networks.

Advisors: Prof. Hossam Hassanein and Prof. Hussein Mouftah.

M.Sc. in Electrical Engineering, Kuwait University, January 2002.

Optimal and near-optimal facility allocation algorithms for planar graph topologies using a dynamic programming approach.

Advisor: Prof. Ahmed Kamal.

B.Sc. (Honors) in Electrical Engineering, Kuwait University, August 1999.

Experience

January 2009 to present:

Adjunct Assistant Professors, School of Computing, Queen's University, Kingston, Ontario.

- Instructing a graduate-level course (CISC 897 Research Methods for Computer Science).

September 2007 to present:

Postdoctoral Fellow, Telecommunications Research Lab, School of Computing, Queen's University, Kingston, Ontario.

- Performed extensive investigations of radio resource management issues in heterogeneous wireless networks.
- Supervised and collaborated with graduate students in the lab.
- Wrote, prepared and consulted in grant proposals, reports, and presentations.

September 2002 to September 2007:

Research Assistant, Telecommunications Research Lab, Electrical and Computer Engineering Department, Queen's University, Kingston, Ontario.

- Investigated novel techniques for radio resource management in wireless networks with heterogeneous access technologies.

Instructor, School of Computing, Queen's University, winter 2007.

- Together with Prof. Hossam Hassanein, introduced, developed, and taught a new graduate-level course (CISC 836 Paradigms of Wireless and Mobile Networking).

Teaching Assistant, Electrical and Computer Engineering Department, Queen's University.

- Assisted in teaching and grading undergraduate courses including:
 - Computer Networks
 - Digital Communication Theory.

January 2000 to August 2002:

Graduate Student Researcher, School of Graduate Studies, Kuwait University

- Derived optimal and near-optimal algorithms for facility allocation problems (including the p -Center and p -Median problems) based on a dynamic programming approach. Algorithms were applied within the context of Web proxy allocations.

Scientific Assistant, Department of Electrical Engineering, Kuwait University.

- Assisted in teaching and grading undergraduate courses including:
 - Numerical Analysis
 - Basic Circuit Analysis
 - Electronics 1 Lab
 - Electronics 2
 - Electronics 2 Lab
 - Active Filter Design.

September 1999 to January 2000:

Teaching Assistant, Department of Electrical Engineering, Kuwait University.

- Assisted in teaching and grading undergraduate courses including:
 - Basic Circuit Analysis
 - Introduction to Electromagnetics.

Instructor, Student Society of the College of Engineering, Kuwait University.

- Developed and taught a short course on *Computer Organization* to computer engineering students.

Honors, Awards and, Scholarships

Scholarships

Queen's University Graduate Award, 2002/2003, 2003/2004, 2004/2005, and 2005/2006.

Awards

Graduation with Honors, awarded by His Majesty the Prince of the State of Kuwait, 2000.

First prize, Electrical and Computer Engineering Design, IEEE – Kuwait Chapter, spring 1998.

Dean's List

Kuwait University, for the years 1996/1997; 1997/1998 and 1998/1999.

Distinction

Kuwait University, 1995/1996 spring only, 1996/1997 & 1997/1998 fall and spring, 1998/1999 spring only.

Publications

Book

1. With Abu Ali and Hassanein, "LTE vs. WiMax: The Race towards Broadband Wireless Services," Wiley and Sons, March 2009. (In progress.)

Journal papers

1. Radwan, Hassanein, Taha, "Identifying the Capacity Gains of Multihop Cellular Networks," accepted for publication in *Computer Communications*.
2. Taha, Hassanein, and Mouftah, "Vertical Handoffs as a Radio Resource Management Tool," *Elsevier's Computer Communications*, Volume 31, Issue 5, pp. 950–961, March 2008.
3. Abu-Ali, Taha, Hassanein, and Mouftah, "IEEE 802.16 Mesh Schedulers: Issues and Design Challenges," *IEEE Network*, Volume 22, Issue 1, pp. 58–65, January/February 2008.
4. Taha, Hassanein, and Mouftah, "Extensions for Internet QoS to Mobile IP: A Survey," *IEEE Communications Magazine*, Volume 43, Issue 5, pp. 132–139, May 2005.

Conference papers

1. Taha, "Towards Comprehensive RRM Frameworks for Heterogeneous Wireless Networks," *Proceedings for International Conference on Information Science, Technology and Applications*, March 2009. (accepted)
2. Taha, "Resource Reservation in Dynamic Spectrum Networks," *Proceedings of IEEE GCC Conference*, March 2009 (accepted)
3. Taha, Hassanein and Mouftah, "Reducing the Cost of Service Delivery in Heterogeneous Wireless Networks," *Proceedings of the IEEE Global Telecommunications Conference*, pp. 2003–2007, November 2007.
4. Ali, Taha, and Hassanein, "RFID Anti-Collision Protocol for Dense Passive Tag Environments," *Proceedings of the IEEE Conference on Local Computer Networks*, pp. 819–824, October 2007.
5. Hasswa, Taha, and Hassanein, "On Extending IMS Services to WLANs," *Proceedings of the IEEE Conference on Local Computer Networks*, pp. 931–938, October 2007.
6. Ali, Hassanein, Taha, and Mouftah, "Directional Cell Breathing: A Module for Congestion Control and Load Balancing in WCDMA Networks," *Proceedings of International Wireless Communications and Mobile Computing Conference*, pp. 317–324, July 2006.
7. Taha, Hassanein, and Mouftah, "A Multi-Class, Sub-Adaptation Module for Forced Vertical Handoffs," *Proceedings of the IEEE Symposium on Computers and Communications*, pp. 175–180, June 2006.
8. Taha, Hassanein, and Mouftah, "Exploiting Vertical Handoffs in Next Generation Radio Resource Management," *Proceedings of the IEEE International Conference on Communications*, Volume 5, pp. 2083–2088, June 2006.
9. Taha, Hassanein, and Mouftah, "Evaluating the Performance of Stochastically Triggered Bandwidth Adaptation Algorithms," *Proceedings of the IEEE 30th Conference on Local Computer Networks*, pp. 538–345, November 2005.
10. Taha, Hassanein, and Mouftah "On Reducing the Operational Costs of Bandwidth Adaptation Algorithms," *Proceedings of IEEE International Conference on Broadband Networks*, Volume 2, pp. 781–783, October 2005.
11. Taha, Hassanein, and Mouftah, "The Effect of Joint Allocation Policies on Preference-Triggered Vertical Handoffs," *Proceedings of the IEEE International Conference on Wireless and Mobile Computing, Networking, and Communications*, Volume 2, pp. 57–63, August 2005.
12. Taha, Hassanein, and Mouftah, "On the Integration of Internet QoS Paradigms and Ad hoc Networks," *Proceedings of the ACS/IEEE International Conference on Computer Systems and Applications*, pp. 935–940, January 2004.
13. Taha, Hassanein and Mouftah, "On Robust Allocation Policies in Wireless Heterogeneous Networks," *Proceedings of the International Conference on QoS in Heterogeneous Wired/Wireless Networks*, pp. 198–205, October 2004.
14. Taha, Hassanein, and Mouftah, "Integrated Solutions for Wireless MPLS and Mobile IP: Current Status and Future Directions," *Proceedings of the Canadian Conference on Electrical and Computer Engineering*, Volume 3, pp. 1463–1466, May 2004.

15. Taha and Kamal, "Optimal and Near-Optimal Web Proxy Placement Algorithms for Networks with Planar Graph Topologies," *Proceedings of the International Conference on Distributed Computing Systems Workshops*, pp. 911–91, May 2003.

Book chapters

1. Taha, Hassanein, and Mouftah, "A Cost-Controlled Bandwidth Adaptation Algorithm for Multimedia Wireless Networks," in *Resource, Mobility and Security Management in Wireless Networks and Mobile Communications*, Edited by Y. Zhang, H. Hu and M. Fujise. Auerbach Publications, 2006.
2. Taha, Hassanein, and Mouftah, "On the Application of Stochastic Integer Linear Programming in Allocation Policies for Heterogeneous Wireless Networks," in *Combinatorial Optimization in Communication Networks*, Edited by D.-Z. Du, M. Cheng and Y. Li. Kluwer Academic Publishers, 2006.

Other publications

1. Taha, Hassanein, and Mouftah, "Overview of QoS Extensions for Mobile IP Networks," Communications and Information Technology Ontario (CITO) Knowledge Network Conference, Ottawa, Canada, September 2003.
2. Taha, "Wireless Ad-Hoc Networks: Characteristics and Challenges," (In Arabic), *Engineers' Magazine*, Publication of the Kuwaiti Engineering Society, August 2002.

Submitted works

1. Ali, Taha, and Hassanein, "Medium Access Control in RFID Systems," book chapter.
2. Taha, Hassanein, and Mouftah, "Reducing Service Delivery Costs for Wireless Operators with Heterogeneous Networks," journal paper.

Professional Activities

Conference Organization

Workshop cochair: Workshop on Advanced Wireless Broadband Networks, 2009.

Workshop cochair: The 9th IEEE Workshop on Wireless Local Networks, 2009.

Web chair: IEEE Symposium on Computer Communications, 2008.

Organizer and program chair: Workshop on Radio Resource Management in Wireless Mesh Networks (RRMinMesh), 2008.

Webmaster: Internet Compatible QoS in Ad hoc Wireless Networks (ICQAWN), 2005.

Session chair: Globecom (2007), AICCSA (2008).

Tutorial

Cognitive Radio Networks: Technologies Enabling Dynamic Spectrum Allocations, with Hassanein, IEEE GCC Conference, March 2009.

Conference Technical Program Committee Member

IEEE International Conference on Communications (ICC), 2008, 2009.

IEEE Global Communications Conference (Globecom), 2008, 2009

IEEE International Conference on Wireless and Mobile Computing, Networking, and Communications (WiMob), 2008.

IEEE Wireless Communications and Networking Conference (WCNC), 2008.

IEEE Conference on Local Computer Networks (LCN) 2005, 2006, 2008.

IARIA International Conference on Advances in Mesh Networks (MESH), 2008.

ACS/IEEE International Conference on Computer Systems and Applications (AICCSA), 2008.

IEEE International Workshop on Heterogeneous Wireless Networks: Resource Management and QoS (HWN-RMQ), 2006, 2008.

IEEE International Workshop on eSafety and Convergence of Heterogeneous Wireless Networks (eSCo-Wi) 2006, 2007.

IEEE International Workshop on Radio Resource Management for Wireless Cellular Networks (RRM-WCN) 2005, 2006.

IEEE First International Symposium on Heterogeneous Wireless Networks (ISHWN) 2005.

Journal Reviewing

IEEE Wireless Communications Magazine.

IEEE Communications Magazine.

IEEE Network Magazine.

International Journal on Communications Systems.

Journal of Wireless Communications and Mobile Computing, Wiley.

International Journal of Wireless and Mobile Communications, Interscience.

Journal of Parallel and Distributed Computing, Elsevier.

Journal of Computer Communications, Elsevier.

Conference Reviewing

AICCSA, BROADNETS, CCECE, CCNC, CIIT, CNSR, CNSR, eSCo-Wi, GLOBECOM, ICC, ICCS, ICPP, IPCCC, ISCC, IWCMC, LCN, MICC & ICON, MSWIM, PE-WASUN, QBSC, QSHINE, RRM-WCN, SECOND, VTC, WCNC, WLN, WOCN.

Membership of Professional Bodies

IEEE, IEEE ComSoc, ACM, and Egyptian Syndicate of Engineers.

Miscellania

Country of Residence Canada, permanent-resident status.

References

Prof. Hossam S. Hassanein
School of Computing, Queen's University
Kingston, Ontario, Canada K7L 3N6
Tel: +1 (613) 533-6052
Fax: +1 (613) 533-6513
E-mail: hossam@cs.queensu.ca

Prof. Hussein T. Mouftah
School of Information Technology and Engineering
University of Ottawa
Ottawa, Ontario, Canada K1N 6N5
Tel: +1 (613) 562-5800 x2173
Fax: +1 (613) 562-5664
E-mail: mouftah@site.uottawa.ca

Prof. Ahmed E. Kamal
Department of Electrical and Computer Engineering
Iowa State University
319 Durham Center, Ames, IA, 50011-3060
Tel: +1 (515) 294-3580
Fax: +1 (515) 294-1152
E-mail: kamal@iastate.edu

Dr. Khaled H. Al-Saqabi
Computer Engineering Department
Kuwait University
P.O. Box 5969, Safat 13060
Kuwait
Tel: +965 4811188X5825,
Fax: +965 4817451
E-mail: saqabi@eng.kuniv.edu.kw