Sameh Gobriel

Contact Information

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Research Interests

1. Energy-Efficient Design of Communication Networks.
2. Future Design of Wireless Data Networks.
3. Energy-Efficient Platform and System Optimizations.
4. Wired/Wireless Networks Security.
5. Wireless Adhoc and Sensor Networks Design.
6. Large Scale Deployment of Wireless Networks.

Education

08/2002-02/2008 University of Pittsburgh PA
Doctorate of Computer Science
Thesis Title: "Cross-layer Energy-Efficient Design of Adhoc and Sensor Networks."

08/2002-04/2007 University of Pittsburgh PA
Masters of Computer Science

07/1994 – 07/1999 Cairo University Cairo, Egypt
B.Sc. of Electronics and Electrical Communications Engineering

Honors and Awards

1. Intel Spontaneous Recognition Award (SRA) from the Networking Technology Lab, for achieving "*Energy-Efficient Communications*" technology readiness via cross-Intel collaboration, April 2009.
2. NSF travel grant to attend IEEE SECON 2006.
3. Andrew Mellon Predoctoral Fellowship, for the academic year (2005-2006), Faculty of Arts and Sciences, University of Pittsburgh, March 2006.
4. University of Pittsburgh CS Graduate Research Award for presenting the runner-up research paper by a graduate student, April 2004.
5. Best Poster Award for presenting the best poster by a graduate student at the fourth annual computer science day, November 2003.
6. Undergraduate Honor Degree, Electronics and Electrical Comm. Department, Faculty of Engineering, Cairo University, July 1999

Working Experience

03/2008–Current Intel Labs OR, USA
Research Scientist at Circuits and Systems Research Lab

- *Responsibilities*: Drive the research and come up with innovative architecture, protocol and algorithm designs to enable future Intel products to be best-in-class in energy-efficient performance. Specific job duties include, but not limited to (1) delivering innovative ideas of new designs and protocols, (2) validating their applicability and projecting their gains, (3) prototyping and feasibility analysis,

and (4) verification and testing.

- Primary Investigator for following Projects:

1. Enabling Network Long-Idle, on how to minimize the impact of background and management traffic on Wireless NICs and platform energy consumption.
2. Adaptive Snoozing, WiFi NIC architecture to enter low power state during active compunction based on traffic characteristics.
3. In-network Buffer and Burst for Energy-Efficient Data Centers, where traffic is shaped to allow servers to go into low power states without violating QOS.
4. Energy-Efficient WiMAX, architecture and algorithms to minimize the active power consumption of the WiMAX NIC.
5. Multi-Compute I/O, on architecture and requirements of I/O devices to support different physical and logical partitions of the platform.

06/05/2006–08/25/2006 Avaya Research Labs NJ, USA
Wireless Networks Research Intern

- *Responsibilities:* prototyping and developing working specs for products related to real time traffic routing, load balancing and low-overhead fault-resilient multicasting in wireless adhoc networks.

09/1999 – 05/2003 Telecommunication Engineering Consultant Office (TECO) Cairo, Egypt
System Engineer of Data, Telephone and GSM Monitoring Devices

- *Responsibilities:* system design, preparing technical and financial offer, system installation and commissioning, client training and after installment client support.
- *Other Responsibilities:* member of TECO's R&D team responsible of designing and implementing different systems for network surveillance and automatic error detection.

Research Experience

08/2002- 02/2008 University of Pittsburgh PA, USA
GSR at the Computer Science Department.

08/2005 – 05/2006 University of Pittsburgh PA, USA
Andrew Mellon Fellow at the Computer Science Department

09/1999 –05/ 2002 Cairo University Cairo, Egypt
Research Assistant, High Speed Networks Lab

Teaching Experience

Fall 2006 University of Pittsburgh PA, USA

- Teaching Introductory Undergrad Course "Discrete Mathematics and Applications in Computer Science."
- Grading Graduate Operating Systems Course.

1999 – 2002 Cairo University Cairo, Egypt

- Teaching Assistant, Faculty of Engineering, Electronics and Electrical Communications Engineering Department.
- Recitations for undergrad courses (1) Local Area Networks (LANs), (2) Computer Operating Systems and (3) Electronic Devices courses.

Publications

PhD Thesis:

1. **Sameh Gobriel** "Cross Layer Energy-Efficient Design of Adhoc and Sensor Networks" University of Pittsburgh, Computer Science Department 2008.

Patents:

2. **Sameh Gobriel,** Christian Maciocco, Charlie Tai and Sanjay Bakshi "*Architecture and method to enable long-term communication Idleness to optimize platform energy efficiency*" US Patent Application 2008071609, December 2008.
3. **Sameh Gobriel,** James Tai and Charlie Tai "*Adaptive Snoozing Version 2: A power saving method and architecture for wireless devices by adaptively changing snoozing interval based on the traffic characteristics, QOS information and traffic mode Detection"* US Patent Application 2008071830, December 2008.
4. Ren Wang, Charile Tai, James Tsai, **Sameh Gobriel**, Jong Han Park "Energy-Efficient Network Forwarding." US Patent Application 200829569, December 2008.
5. **Sameh Gobriel,** A. S. Krishnakumar, P. Krishnan and Shalini Yajnik "*Load-Balancing Routes In Multi-Hop Ad-Hoc Wireless Networks*" US Patent Application 20080112326, November 2006.
6. **Sameh Gobriel,** A. S. Krishnakumar, P. Krishnan and Shalini Yajnik "*Detection and Handling of Lost Messages During Load-Balancing Routing Protocols"* US Patent Application 20080117823 November 2006.

Articles in Refereed Journals:

7. **Sameh Gobriel**, Rami Melhem and Daniel Mosse "*Unified Interference/Collision Analysis for Optimal MAC Transmission Power in Adhoc Networks.*" International Journal of Wireless and Mobile Computing (**IJWMC**) 2006.

Papers in Refereed Conferences and Workshops[1]:

8. **Sameh Gobriel**, Sherif Khattab, Daniel Mosse, and Rami Melhem "On Link Quality Assessment and Fault-Tolerant Aggregation in Wireless Sensor Networks." in IEEE Global Communications Conference (**GLOBECOM'09**), November 2009. (acceptance rate 34%).
9. **Sameh Gobriel**, Robert Cleric and Daniel Mosse "TDMA-ASAP: Sensor Network TDMA Scheduling with Adaptive Slot stealing And Parallelism." in IEEE International Conference on Distributed Computing Systems (**ICDCS'09**), June 2009**.** (*acceptance rate 16%*)
10. **Sameh Gobriel,** Sherif Khattab, Daniel Mosse', and Rami Melhem, ``*GroupBeat: Wireless Networks Made Reliable*". in IEEE

[1] When known the acceptance rates for the conferences and workshops are listed.

International Conference on Mobile Ad-hoc and Sensor Systems (**MASS'08**) October 2008. (*short paper, acceptance rate 24%*)

11. **Sameh Gobriel**, A. S. Krishnakumar, P. Krishnan and Shalini Yajnik "*Load-Based Metrics and Flooding in Wireless Mesh Networks*", in International Conference on Wireless Algorithms, Systems and Applications (**WASA'08**) October 2008. (*acceptance rate 22%)*
12. **Sameh Gobriel**, Robert Cleric and Daniel Mosse "*Adaptations of TDMA Scheduling for Wireless Sensor Networks*" in International Workshop on Real-Time Networks (**RTN'08**) held in conjunction with Euromicro Conference on Real-Time Systems (ECRTS 08) July 2008. (*acceptance rate 46%*)
13. Sherif Khattab, **Sameh Gobriel**, Rami Melhem, and Daniel Mossé, ``Live Baiting for Service-level DoS Attackers,'' in IEEE Conference on Computer Communications (**INFOCOM'08**) April 2008. (*acceptance rate 21%)*
14. **Sameh Gobriel,** A. S. Krishnakumar, P. Krishnan and Shalini Yajnik *"When a Long Way is not the Wrong Way"* in **WLAN Mesh**, April 2007.
15. **Sameh Gobriel,** A. S. Krishnakumar, P. Krishnan and Shalini Yajnik "*Self-Configuring Multi-hop Ad-hoc Wireless Telephony for Small Enterprises*" in IEEE Wireless Communications and Networking Conference (**WCNC'07**), March 2007. (*acceptance rate 43%*)
16. **Sameh Gobriel,** Sherif Khattab, Daniel Mosse, Jose Brustloni and Rami Melhem "*RideSharing: Fault Tolerant Aggregation in Sensor Networks Using Corrective Actions.*" In IEEE Communications Society Conference on Sensor, Mesh and Ad Hoc Communications and Networks (**SECON'06**), September 2006. (*acceptance rate 25%*)
17. **Sameh Gobriel**, Daniel Mosse and Rami Melhem "*Mitigating the Flooding Waves Problem in Energy-Efficient Routing for MANETs.*" In IEEE International Conference on Distributed Computing Systems (***ICDCS'06***), July 2006. (*acceptance rate 14%*)
18. **Sameh Gobriel**, Rami Melhem and Daniel Mosse "*BLAM: An Energy- Aware MAC Layer Enhancement for Wireless Adhoc Networks*" in IEEE Wireless Communications and Networking Conference (***WCNC'05***), March 2005. (*acceptance rate 43%*)
19. **Sameh Gobriel**, Rami Melhem and Daniel Mosse "*Modeling an Energy-Efficient MAC-Layer Protocol"* in IEEE International Computer Engineering Conference (***ICENCO'04***), December 2004.
20. Nevine AbouGhazaleh, **Sameh Gobriel**, Daniel Mosse and Rami Melhem "*Dynamic Rate Selection for Extending the lifetime of Energy Constrained Networks*" In Workshop on Energy-Efficient Wireless Communications and Networks (**EWCN'04**) held in conjunction with IEEE International Performance Computing and Communications Conference (IPCCC'04), April 2004.
21. **Sameh Gobriel**, Rami Melhem and Daniel Mosse "*A Unified Interference/Collision Analysis for Power-Aware Adhoc Networks.*" In the conference of the IEEE communications society (***INFOCOM'04***), March 2004. (*acceptance rate 18%*)

Papers Submitted:

22. **Sameh Gobriel**, Christian Maciocco, Charlie Tai " When Idle is not Quite: Energy-Efficient Network Design in Presence of Background and Management Traffic."
23. **Sameh Gobriel**, James Tai, Charlie Tai "Green enterprise: Buffer and Bursting Design of Future Data Centers"

Computer Skills

Programming Skills: C++, C, SQL, Java Scripts, AWK, PHP.
Simulation Tools: NS2, OPNET, CSIM, MicroSim Design Center, VSSIM, PSPICE.
Operating Systems: Unix, Linux, Microsoft Windows

Activities

Conference and Workshops Program Committee Member:

- IEEE Global Communications Conference (Globecom09)
- International Workshop on Real-Time Networks (RTN08).

Journals Reviewer:

- IEEE/ACM Transactions on Networking
- IEEE Transactions on Mobile Computing
- IEEE Wireless Communications Magazine
- Kluwer Wireless Networks
- International Journal of Wireless and Mobile Computing

External Reviewer:

- Annual Joint Conference of the IEEE Computer and Communications Societies (IEEE INFOCOM)
- IEEE International Conference on Distributed Computing Systems (ICDCS)
- International Conference on Pervasive Computing (PerCom)
- Real-Time Systems Symposium (RTSS)
- Real-Time and Embedded Technology and Applications Symposium (IRTAS)
- IEEE Wireless Communications and Networking Conference (WCNC)

Other Experiences

- 1997-1999 Member and Treasurer of “Club of Electronics and Electrical Engineers (CEEE)” Cairo, Egypt.
- IEEE Communication Society Member.

References

Furnished upon request