

BIOGRAPHICAL SKETCH
ABRAHAM (IBRAHIM) MATTA
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EDUCATION

Ph.D. in Computer Science University of Maryland at College Park.	<i>August 1995</i>
M.S. in Computer Science and Automatic Control Alexandria University, Egypt.	<i>June 1989</i>
B.S. in Computer Science and Automatic Control Alexandria University, Egypt.	<i>June 1986</i>

EMPLOYMENT HISTORY

Mobile Networking Systems Department, BBN Technologies Visiting Scientist	<i>January 2006 – December 2007</i>
Computer Science Department, Boston University Associate Professor	<i>September 2003 – present</i>
Director of Graduate Studies	<i>September 2007 – present</i>
Director of Laboratory Operations Assistant Professor	<i>September 2003 – August 2005</i> <i>July 1999 – August 2003</i>
College of Computer Science, Northeastern University Assistant Professor	<i>September 1995 – June 1999</i>
Co-Director of Lab for Networking & Distributed Computing	<i>April 1997 – June 1999</i>
Computer Science Department, Bowie State University Adjunct Faculty	<i>January 1994 – May 1994</i>
Computer Science Department, University of Maryland at College Park Research Assistant	<i>June 1990 – August 1995</i>
Teaching Assistant	<i>August 1989 – June 1990</i>
Computer Science & Automatic Control, Alexandria University, Egypt Teaching Assistant	<i>December 1987 – July 1989</i>
Computer Science Department, College of Air Defense, Egypt Teaching Assistant	<i>July 1986 – November 1987</i>

SYNERGISTIC ACTIVITIES

NEW COURSES & TUTORIALS IN NETWORKING:

- Internetworking and Multimedia Networks at Northeastern University.
- Advanced Computer Networks, Internet Teaching Laboratory, and Sensor Networks at Boston University.
- Tutorial on “Modeling Network Dynamics under Rate-dependent and Rate-independent Prices” (with A. Bestavros) at International Computer Engineering Conference, 2004.

RESEARCH SOFTWARE:

- TRAFFIC: a typed language for service composition.
- itmBench: a prototype for traffic management protocols.
- SaTS: a size-aware scheduler for TCP flows.
- SEP: Stable Election Protocol for clustered wireless sensor networks.
- DIP: Density Inference Protocol for wireless sensor networks
- BRITE: a topology generator.
- SIMD: a history-based congestion control algorithm.
- MaRS: a simulation testbed for evaluating routing systems.
- Z-iteration: a computational tool for evaluating large adaptive distributed systems.
- WTCP: a wireless TCP protocol code.
- QDMR: a QoS multicast routing algorithm.

This software is publicly available on the Internet at <http://www.cs.bu.edu/faculty/matta/software.html>.
It has been used for research and education at several sites.

SELECTED HONORS AND AWARDS

• IEEE & ACM Senior Member • Teaching Award, CS Department, 2001 • National Science Foundation CAREER Award, 1997 • Departmental Excellence Award (for first rank among 40 Computer Science graduates), 1986.

SELECTED PROFESSIONAL ACTIVITIES

• General Chair of WiOpt 2006 • Technical Program Co-chair of IEEE ICNP 2005 • Internet Co-chair of IEEE Infocom 2005 • Technical Program Co-chair of SenMetrics 2005 • Editorial Board, Computer Networks (COMNET Elsevier) Journal • Member of Advisory Council of the IEEE International Symposium on Computers and Communications • Co-organizer and Technical Program Co-chair, NeXtworking 2003 (COST-IST and NSF funded workshop) and Workshop on Applications and Services in Wireless Networks (ASWN 2004) • Publication Chair of INFOCOM 2003 • Technical Program Co-chair of Workshop of Wired/Wireless Comm. (WWIC) 2002 and General Co-chair of WWIC 2004 • Tutorial and Panel Chair of Hot Interconnects 9, August 2001 • Guest co-editor of special issues in The Journal of Wireless Communications and Mobile Computing (February 2002) and the IEEE Communications Magazine (June 2002) • Program Committee Member of various conferences including IEEE ICNP, IEEE Infocom, ACM MobiCom, ACM MobiHoc, ACM CoNEXT, PAM, IEEE Globecom, IFIP-TC6 Networking, IEEE ICDCS.

SELECTED RECENT PUBLICATIONS

1. Niky Riga, Ibrahim Matta, Alberto Medina, Craig Partridge, and Jason Redi. JTP: An Energy-conscious Transport Protocol for Multi-hop Wireless Networks. In *Proceedings of ACM CoNEXT*, New York, NY, December 2007.
2. Niky Riga, Ibrahim Matta, and Azer Bestavros. A Geometric Approach to Slot Alignment in Wireless Sensor Networks. In *Proceedings of the IEEE Global Telecommunications Conference (Globecom'07) Ad-hoc and Sensor Networking Symposium*, Washington, DC, November 2007.
3. Georgios Smaragdakis, Nikolaos Laoutaris, Azer Bestavros, Ibrahim Matta, and Ioannis Stavrakakis. Mistreatment-Resilient Distributed Caching. *Computer Networks Journal (Elsevier COMNET)*, 51(11), August 2007.
4. Mina Guirguis, Azer Bestavros, Ibrahim Matta, and Yuting Zhang. Reduction of Quality (RoQ) Attacks on Dynamic Load Balancers: Vulnerability Assessment and Design Tradeoffs. In *Proceedings of IEEE Infocom*, Anchorage, Alaska, May 2007.
5. Karim Mattar, Ashwin Sridharan, Hui Zang, Ibrahim Matta, and Azer Bestavros. TCP over CDMA2000 Networks: A Cross-Layer Measurement Study. In *Proceedings of the 8th Passive and Active Measurement Conference (PAM)*, Louvain-la-neuve, Belgium, April 2007.
6. Mina Guirguis, Azer Bestavros, Ibrahim Matta, and Yuting Zhang. Adversarial Exploits of End-Systems Adaptation Dynamics. *Journal of Parallel and Distributed Computing (Elsevier)*, 67(3):318–335, March 2007.
7. Azer Bestavros, Adam Bradley, Assaf Kfoury, and Ibrahim Matta. Typed Abstraction of Complex Network Compositions. In *Proceedings of the 13th IEEE International Conference on Network Protocols (ICNP'05)*, Boston, MA, November 2005.
8. Azer Bestavros, Adam Bradley, Assaf Kfoury, and Ibrahim Matta. Safe Compositional Specification of Networking Systems. *ACM SIGCOMM Computer Communication Review*, 34(3):21–33, July 2004.
9. Mohamed Hassan, Marwan Krunz, and Ibrahim Matta. Markov-based Channel Characterization for Tractable Performance Analysis in Wireless Packet Networks. *IEEE Transactions on Wireless Communications*, 3(3):821–831, May 2004.
10. Shudong Jin, Liang Guo, Ibrahim Matta, and Azer Bestavros. A Spectrum of TCP-friendly Window-based Congestion Control Algorithms. *IEEE/ACM Transactions on Networking*, 11(3), June 2003.

SELECTED COLLABORATORS AND GRADUATE ADVISORS

Azer Bestavros, John Byers, Mark Crovella, Assaf Kfoury (Boston U.), Marwan Krunz (U. of Arizona), Whay C. Lee (Motorola Research Labs), Sampath Rangarajan (Bell Laboratories), Jason Redi, Craig Partridge (BBN Technologies), Ashwin Sridharan, Hui Zang (Sprint Labs), Eitan Altman (INRIA), Rachid El Azouzi (LIA/CERI-Université d'Avignon), Nina Taft (Intel Berkeley), Kavé Salamatian (University Paris 6), Christophe Diot (Thomson Research, France), Ioannis Stavrakakis (U. of Athens), Mikhail Smirnov (GMD FOKUS), Vassilis Tsaoussidis (Demokritos U., Greece), Gene Cooperman, Waleed Meleis, David Kaeli, Karl Lieberherr (Northeastern U.), A. Udaya Shankar (U. of Maryland at College Park, Collaborator and PhD advisor).

PARTIAL LIST OF PHD STUDENTS

• Karunaharan Ratnam (Post PhD position: Cisco Systems), Electrical and Computer Engineering Department, Northeastern University • Liang Guo (Post PhD position: Motorola Labs), Alberto Medina (Post PhD position: postdoc at Center for Internet Research at Berkeley; now at BBN Technologies), Selma Yilmaz (female Ph.D., Post PhD position: Cisco Systems), Mina Guirguis (Post PhD position: Assistant Professor at Texas State U at San Marcos), Niky Riga, Gonca Gursun (female Ph.D. students), Karim Mattar, Hany Morcos, Flavio Esposito (Ph.D. students), Computer Science Department, Boston University.