

# AZER BESTAVROS

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## PROFESSIONAL PREPARATION

- Ph.D. in Computer Science from Harvard University, Cambridge, Massachusetts, USA. June 1992
- S.M. in Computer Science from Harvard University, Cambridge, Massachusetts, USA. June 1988
- M.Sc. in Computer Engineering and Digital Control from Alexandria University, Egypt. June 1987
- B.Sc. *summa cum laude* in Computer Engineering from Alexandria University, Egypt. June 1984

## ACADEMIC APPOINTMENTS

- Founding Director, Hariri Institute for Computational Science & Engineering, Boston U, Boston, MA. 9/10 – present
- Professor, Computer Science Department, Boston University, Boston, MA. 9/03 – present
- Chairman, Computer Science Department, Boston University, Boston, MA. 8/00 – 8/2007
- Associate Professor, Computer Science Department, Boston University, Boston, MA. 9/98 – 8/2003
- Assistant Professor, Computer Science Department, Boston University, Boston, MA. 9/91 – 8/1998
- Research Fellow, Computer Science Department, Harvard University, Cambridge, MA. 9/87 – 8/1991
- Instructor of Computer Science, Alexandria University & Academy of Science and Technology, Egypt. 9/84 – 6/1987

## SELECTED PROFESSIONAL EXPERIENCE

- Consultant, Raytheon BBN Technologies, Cambridge, MA. 2/10 – present
- Consultant, Sycamore Networks Inc., Chelmsford, MA. 8/08 – present
- Consultant and Expert Witness in US Federal Courts on Patent Litigations with various law firms. 4/01 – present
- Member of Technical Advisory Board, Quarry Technologies, Cambridge, MA. 3/00 – 3/2002
- Member of Technical Advisory Board, Pivia Inc., Cupertino, CA. 9/00 – 3/2002
- Senior Scientific Adviser, Allaire Corporation, Cambridge, MA. (Acquired by Adobe Inc.) 1/00 – 4/2001
- Consultant, Adero Inc., Charlestown, MA. 4/00 – 1/2001
- Consultant, WebManage Technologies Inc. and Network Appliance Inc., Chelmsford, MA. 6/99 – 8/2000
- Co-Founder and Principal Technical Officer, CNT Inc. (Acquired by Network Appliance Inc.) 4/98 – 9/1999
- Senior Technology Consultant, Bowne Internet Solutions, Cambridge, MA. 6/98 – 1/2000
- Member of Technical Staff, AT&T Bell Laboratories, Holmdel, NJ. 6/89 – 9/1989
- Consultant, World Health Organization, East Mediterranean Regional Office, Alexandria, Egypt. 6/85 – 9/1987
- Senior Software Engineer, Awad & Partners Architectural Firm, Alexandria, Egypt. 6/85 – 1/1987

## SELECTED HONORS

- United Methodist Scholar/Teacher Award for 2010. 9/2010
- ACM Sigmetrics Inaugural Test of Time Award for 1996 paper on self similarity (with M. Crovella). 6/2010
- Best Paper Award, IEEE/IFIP Med Ad-Hoc Networking (with student H. Morcos and I. Matta). 6/2010
- Best Paper Award, IEEE/ACM Distributed Computing in Sensor Systems (with student H. Morcos). 6/2008
- Best Paper Award at inaugural meeting of the ACM Wireless Network Security (with student M. Ocean). 4/2008
- Elected Chair of the IEEE Technical Committee on the Internet. 1/2007
- Elevated to Senior Member of the ACM and of the IEEE. 12/2006
- Selected as Distinguished Speaker of the IEEE Computer Society DVP program. 4/2004
- ACM Distinguished Service Award and IEEE Computer Society Distinguished Service Award. 12/1999
- Compaq Award for R&D in CS for work on characterizing Web reference locality (with M. Crovella). 11/1997
- Listed in the International Who's Who of Information Technology. 9/1996
- Member of the Senior Common Room of Leverett House, Harvard University. 9/1993
- Harvard University GSAS/DEAS Gordon McKay Graduate Fellowship and 2002 GSAS Class Marshal. 9/87 – 6/1992
- Alexandria University Graduate Fellowship for Academic Excellence. 9/1984
- Sadat Presidential Award for ranking third over 27,357 students in Egypt's nationwide diploma exam. 8/1979

## PROFESSIONAL SERVICE

Chair of the IEEE TC on the Internet; Executive committee member of the IEEE TC on Real-Time Systems; Associate Editor of IEEE Internet Computing and of Embedded Systems Journal; External Visiting Committee Member for many CS Programs; Reviewer for dozens of IEEE/ACM journals and NSF panels; PC member in top conferences, including Infocom, Sigmetrics, RTSS, VEE, WWW, PODC, MMSys; Sigmod; PC/General Chair for WASA'09, HotWeb'06, ICNP'05, ASWN'04, WCW'01, RTAS'99, RTAS'98, ACM LCTES'98, RTDB'97, and CRA Snowbird in 2000, 2006, and 2008.

## SYNERGISTIC ACTIVITIES

The complete list of synergistic activities includes dozens of contributions to teaching, training, outreach, technology transfer, and service. The following are five specific examples of recent activities along these lines.

- **UNDERGRADUATE CS EDUCATION:** Developed and offered (since 1998) a core undergraduate course on the fundamentals of computing systems. This nationally unique course (<http://www.cs.bu.edu/~best/crs/cs350>) offers a rigorous treatment of the invariant concepts, algorithms, and performance evaluation methods underlying the design and implementation of computing systems, whether such systems are networks, databases, operating systems, web servers, architectures, etc.
- **INTERDISCIPLINARY EDUCATION:** Co-leading the Education and Outreach mission of the \$100M+ Massachusetts Green HPC Center. Leading a joint effort between CS and Mathematics at BU to develop a team-taught core computational reasoning curriculum. Co-led NSF IGERT effort at BU to develop an undergraduate parallel computing curriculum.
- **CS COMMUNITY BUILDING:** Organized CRA Snowbird workshops on models for university-led startups in 2000, on the state of CS publications in 2006, and on CS Research Infrastructures in 2008. Participated in three of the formative GENI workshops, in two of the formative NITRD workshops on CPS, and co-organized one such workshop in 2007.
- **BU COMMUNITY BUILDING:** Founding member of the RISCS (security) Center, the SNC (sensor network) Consortium, and the CEESI (green technologies) Initiative at BU. Founded and managed (since 2001) the BU Computing Alumni Network. Sponsored and advised many BU student groups, including ACM Chapter, Video Game, and MS/Linux groups.
- **TECHNOLOGY TRANSFER:** Founded an Industrial Affiliation Program to promote cross-pollination between academia and industry. Members included major labs (e.g., IBM, MS, Sun, Sprint, Cisco, VMware). Pursued seven patent applications; five issued and are licensed, and one (US 6,370,584) was the basis of a startup now part of Network Appliance Inc.

## PUBLICATIONS

The complete list of publications includes four edited books, dozens of book chapters, and over one hundred technical papers in refereed journals and conference proceedings. Since 1999, WebBib ranked this work as one of the top three cited bodies of web-related research by a single author. As of June 2010, the Microsoft Academic Index lists over 4,300 citations to this body of work with a G-Index of 61 and an H-Index of 28. The following are representative publications.

1. Trade and Cap: A Market-Based Bandwidth Trading System. *Proc. ACM/USENIX NetEcon, 2010* (with Londono and Laoutaris).
2. A Type-Theoretic Framework for Colocation of Periodic Real-time Systems. *Proc. IEEE RTSCA, 2010* (with Ishakian and Kfoury).
3. Colocation Games and Their Application to Distributed Resource Management. *USENIX HotCloud, 2009* (with Londono and Teng).
4. Measuring Bottleneck Bandwidth of Targeted Path Segments. *IEEE/ACM Trans. on Networking, 2009* (with Harfoush and Byers).
5. Wireless and Physical Security via Embedded Sensor Networks (Best Paper Award). *Proc. ACM WiSec, 2008* (with Ocean).
6. Adversarial Exploits of Adaptation Dynamics. *J of Parallel and Distributed Computing, 2007* (with Guirguis, Matta, and Zhang).
7. Distributed Selfish Caching. *IEEE Trans. on Parallel and Distributed Systems, 2006* (with Laoutaris, Smaragdakis, and Stavrakakis).
8. The snBench Virtualization Framework. *Proc. of ACM/USENIX Virtual Execution Environments, 2005* (with Ocean and Kfoury).
9. Network-Aware Partial Caching For Internet Streaming Media. *ACM Multimedia Systems Journal, 2003* (with Jin and Iyengar).
10. Self-Similarity in WWW Traffic: Evidence and Possible Causes. *IEEE/ACM Trans. on Networking, 1997* (with Crovella).

## INVITED TALKS, COLLOQUIA, AND OUTREACH

The complete list of invited lectures exceed 90, with dozens of colloquia at major universities (e.g., Harvard, U Cambridge, MIT, Purdue, U Penn, U Mass Amherst) and labs (e.g., Microsoft, AT&T, Akamai, Deutsche Telekom), plenary talks in conferences and industrial symposia, and recruitment and outreach talks. The following are recent representative talks.

- Network and Cloud Resource Management Games. *School of CS, Georgia Institute of Technology, 2009* (Host: Mostafa Ammar).
- Thou Shalt Be A Selfish Overlay Neighbor. *CS and ECE Departments, U of Toronto, Canada, 2007* (Host: Jorg Liebeherr).
- Friendly Virtual Machines. *Microsoft Research, Redmond, 2005* (Host: Venkat Padmanabham).
- Exploiting System Dynamics for Internet RoQ Attacks. *CS Department, U Cambridge, England, 2004* (Host: John Crowcroft).
- Computer Science Research that Rocks! *ECE Department, U of Puerto Rico, Mayaguez, 2004* (Host: Domingo Rodriguez).
- Practical and Efficient Construction of Network Caricatures. *ICIR/ICSI at UC Berkeley, 2003* (Hosts: Dick Karp and Sally Floyd).

## STUDENTS AND COLLABORATORS

- **Current and Former Advisees:** 19 PhD Students (6 female), 49 Masters Students (13 female, 2 minority), and 7 REU (2 female) since 1991. Former graduate students have secured positions in academia and industry: CS at NCSU, CS at CWRU, CS at U Texas, Microsoft, AT&T Research, Bellcore, IBM, BBN, EMC Corp, HP, Google, The Open Group, and GTE Laboratories.
- **PhD Students, Postocs, and Collaborators** (employers) over the last five years: V. Almeida (UFMG, Brazil), A. Bradley (Amazon), J. Byers (BU), M. Crovella (BU), M. Guirguis (U Texas), K. Harfoush (NCSU), S. Jin (Case Western U), A. Kfoury (BU), G. Kollios (BU), N. Laoutaris (Telefonica Labs), A. Lapets (BU), J. Londono (BU), F. Li (Florida State U), I. Matta (BU), P. Michardi (Eurecom), W. Meira (UFMG, Brazil), M. Ocean (Endicott College), M. Roussopoulos (Harvard U), G. Smaragdakis (Deutsche Telecom), I. Stavrakakis (U Athens), S-H. Teng (BU), E. Veloso (UFMG, Brazil), R. West (BU), G. Zervas (BU), Y. Zhang.
- **PhD Advisor:** T. E. Cheatham, Jr. (Harvard U, deceased).