Azer Bestavros

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Education

Ph.D.	**Harvard University, Division of Applied Sciences**, in Computer Science.	*June 1992*
S.M.	**Harvard University, Division of Applied Sciences**, in Computer Science.	*June 1988*
M.Sc.	**Alexandria University, Egypt**, in Computer Science and Automatic Control.	*June 1987*
B.Sc.	**Alexandria University, Egypt**, *summa cum laude* in Computer Engineering.	*June 1984*

Academic Experience

Boston University

Founding Director	*Hariri Institute for Computing and Computational S & E*	*12/10 – present*
Professor	*Department of Computer Science*	*09/07 – present*
Professor and Chairman	*Department of Computer Science*	*09/03 – 08/2007*
Associate Professor and Chairman	*Department of Computer Science*	*09/00 – 08/2003*
Associate Professor	*Department of Computer Science*	*09/98 – 08/2000*
Assistant Professor	*Department of Computer Science*	*09/91 – 08/1998*

Research: Networking; Internet/Web Protocols and Services; and Real-Time Systems. Projects: Cloud computing architectures; Network science and algorithmics; Economics-inspired networking/cloud services; Security of system/network control planes; Internet/Web measurement and characterization; Web caching and Content Distribution Networks; Scalable streaming media delivery; End-to-end QoS management; Resource management in mobile ad-hoc networks; Virtualization and programming support for embedded sensor networks; Formal verification of Internet/Web protocols; Compositional analysis of Cyber-Physical Systems; Statistical scheduling and load-shedding protocols for distributed systems; Concurrency management in real-time databases. Teaching: Introduction to CS; Computer architecture; Parallel computing; Computing systems fundamentals; Distributed systems; Real-time systems; Internet architecure and protocols; Sensor networks.

Harvard University

Research Fellow	*Department of Computer Science*	*09/87 – 09/1991*
Teaching Fellow	*Department of Computer Science*	*09/88 – 09/1991*
Research Assistant	*Robotics Laboratory*	*06/88 – 09/1988*

Research: Formal modeling and verification of embedded real-time systems. Projects: Implementation of motion control API for 6-DOF robot; Compiler optimizations for massively parallel Monte-Carlo simulations. Teaching: Programming languages and compilers; VLSI; Parallel computing models, languages, and environments.

Alexandria University

Research Assistant	*Department of Computer Science*	*09/84 – 06/1987*
Teaching Assistant	*Department of Computer Science*	*09/84 – 06/1987*
Instructor	*Center for Scientific Computing*	*09/85 – 06/1986*

Research: Fault-tolerant distributed systems. Teaching: Information and control theory; Networking; Computer architecture; Probability and Statistics.

VISITING AND AFFILIATED APPOINTMENTS

Founding Faculty, Center for Reliable Information Systems & Cyber Security, BU   *09/06 – present*
    RISCS promotes research and education on trustworthy systems and on information assurance.

Faculty Affiliate, Center for Finance, Law & Policy, BU   *09/13 – present*
    CFLP promotes research on regulatory issues of global financial systems and networks.

Faculty Affiliate, Division of Systems Engineering, School of Engineering, BU   *09/08 – present*
    The SE division promotes research on information, decision, and control sciences.

Faculty Member, The Center for Information and Systems Engineering, BU   *09/02 – present*
    CISE promotes interdisciplinary research involving systems engineering methodologies.

Faculty Member, Center of Computational Sciences, BU   *09/92 – present*
    CCS promotes collaborative research and education in computational sciences.

Visiting Professor, Microsoft Innovation Laboratories, CMIC, Cairo, Egypt   *Fall 2008*
    Research on collaborative ad-hoc networked information and retrieval systems.

Visiting Professor, Institut Eurécom, Sophia-Antipolis, France   *Fall 2008*
    Research on networking protocols for scalable P2P and ad-hoc content distribution.

Visiting Professor, Telefonica Research Laboratories, Barcelona, Spain   *Fall 2008*
    Research on distributed systems, P2P, and content distribution networks.

Visiting Professor, BBN Technologies, Cambridge, Massachusetts   *Fall 2007*
    Research on information security, advanced networking, and distributed systems.

Visiting Professor, Harvard University, Cambridge, Massachusetts   *Fall 1999*
    Research on scalable content service and distribution.

PROFESSIONAL EXPERIENCE

Advisory Board Member, The Cloud Computing Caucus, Washington, DC   *03/14 – present*
    Inform and educate lawmakers and the public about cloud computing and other IT issues.

Consultant, Patent and Intellectual Property Litigations, Various Law Firms   *04/00 – present*
    Retained as expert witness in patent infringement and validity litigations and trials.

Consultant, Raytheon BBN Technologies, Cambridge, MA   *02/08 – present*
    Verification of safety and security of distributed systems.

Consultant, Sycamore Networks, Chelmsford, MA   *07/08 – 06/2010*
    Edge caching services for mobile and wireless networks.

Advisory Board Member, BU Office of Technology Development, Boston, MA   *04/00 – 12/2005*
    Assisting OTD in technology evaluation of prospective investment opportunities.

Technical Advisory Board Member, Pivia Inc., Cupertino, CA   *10/00 – 12/2003*
    Reviewing Pivia's technical and strategic directions in dynamic Web caching.

Technical Advisory Board Member, Quarry Technologies, Inc., Cambridge, MA   *04/00 – 12/2003*
    Reviewing Quarry's lineup of high-end enterprise networking solutions.

Technical Advisory Board Member, PeopleStreet.com Inc., Cambridge, MA   *08/00 – 02/2002*
    Reviewing PeopleStreet technical and strategic directions in active contact management.

Consultant, Adero Inc., Charlestown, MA   *03/00 – 09/2000*
    Reviewing Adero's load measurement architecture.

Senior Scientific Adviser, Allaire Corporation, Cambridge, MA   *03/00 – 04/2001*
    Reviewing architectures for profiling and personalization in scalable application servers.

Consultant, Network Appliance (formerly WebManage Inc.), Sunnyvale, CA   *10/99 – 12/2000*
    Reviewing NTAP NetCache content distribution architecture.

Co-Founder/Principal Officer, Commonwealth Network Technologies, Boston, MA   *01/98 – 10/1999*
    Middleware support for scalability, load-balancing, and QoS on clustered servers.

Technology Consultant, Bowne Internet Solutions, Boston, MA   *06/98 – 02/2000*
    Reviewing proposed designs and architectures for on-line banking and e-commerce applications.

Chief Technology Officer, Open Sesame,Inc. Boston, MA   *01/98 – 05/1998*
    Personalization Solutions for 1-1 E-commerce.

Software Technology Consultant, Charles River Analytics, Cambridge, MA   *01/97 – 01/1998*
    Reviewing the design of scalable personalization and push-caching services for the Web.

Member of Technical Staff (MTS), AT&T Bell Laboratories, N.J.   *06/89 – 09/1989*
    Designed, analyzed and simulated new RAID architectures using Rabin's IDA algorithm.

Consultant, World Health Organization, Eastern Mediterranean Regional Office   *01/87 – 09/1987*
    Laid out and supervised the design of database systems for the WHO libraries.

Consultant, Chemonics International, Washington D.C. (Cairo office)   *06/85 – 01/1987*
    Evaluated computer monitoring systems and training courses for USAID projects in Egypt.

System Administrator, Awad & Partners Architectural Firm, Alexandria, Egypt   *06/84 – 06/1987*
    Designed and implemented site control, cost-time estimation/scheduling, and CAD software.

Investigator, The Institute for Oceanographical Research, Alexandria, Egypt   *06/85 – 06/1986*
    Assessed remote sensing and data acquisition embedded systems for coastal erosion research.

Instructional Consultant, Maritime Transport Academy, Alexandria, Egypt   *09/84 – 06/1985*
    Developed and taught a 2-course series on computing for maritime engineers.

System Programmer, Arabic Software Inc., Alexandria, Egypt   *06/83 – 09/1983*
    Designed and implemented bilingual accounting and inventory software packages.

PROFESSIONAL SOCIETIES AND AFFILIATIONS

○ Member of the ACM and many of its Special Interest Groups   *01/86 – present*
○ Member of the IEEE Computer Society and many of its Technical Committees   *01/87 – present*
○ Member of the Harvard Graduate Society   *01/88 – present*
○ Founding Member of the BU Sensor Networking Consortium   *01/05 – 12/2012*
○ Member of the BU Clean Energy Initiative   *01/09 – 12/2012*
○ Member of the IEEE Communication Society   *01/92 – 12/2002*
○ Member of the International Society on Computer Applications (ISCA)   *01/92 – 12/1999*
○ Member of the Association of Egyptian American Scholars   *09/91 – 08/1998*
○ Member of the Association of Egyptian Engineers   *06/84 – 08/1991*

HONORS AND AWARDS

○ Recipient of over $20M in peer-reviewed research awards from government and industry   *09/92 – present*
○ Senior Common Room Member, Leverett House, Harvard University   *09/93 – present*
○ Elected Chair of the IEEE Computer Society Technical Committee on the Internet   *01/07 – 12/2012*
○ Recipient of BU Ignition Award for Tech Innovation (with Reynolds and Kfoury)   *02/2013*
○ Best Paper Award, ACM/IFIP/Usenix International Middleware Conference   *12/2012*
○ Qatar Foundation Distinguished Arab Expatriate Scientists Award   *10/2012*
○ Selected as one of 8 academic candidates to the CRA Board of Directors   *01/2012*
○ Best Paper Award, ACM/IFIP/Usenix International Middleware Conference   *01/2012*
○ Selected as one of 10 academic candidates to the CRA Board of Directors   *01/2011*
○ Selected as Distinguished Speaker of the IEEE Computer Society DVP 2010-12 program   *03/2010*
○ Inaugural ACM Sigmetrics Test of Time Award for best paper in last 15 years   *06/2010*
○ Best Paper Award, IEEE/IFIP Mediterranean Workshop on Ad-Hoc Networking   *06/2010*
○ Winner of the United Methodist Scholar/Teacher Award for 2010   *01/2010*
○ CMIC Academic Fellow Award, Microsoft   *06/2008*
○ CS Nominee for The Metcalf Excellence in Teaching Award, Boston University   *10/2008*
○ Best Paper Award, IEEE/ACM Distributed Computing in Sensor Systems Conference   *06/2008*
○ Best Paper Award, Inaugural ACM Wireless Network Security Conference   *04/2008*
○ Elevated to Senior Member of the IEEE Computer Society   *06/2008*
○ Recipient of BU Grant for Undergraduate Teaching and Scholarship (GUTS) Award   *01/2008*
○ Elevated to Senior Member of the Association for Computing Machinery   *01/2007*
○ Selected as Distinguished Speaker of the IEEE Computer Society DVP 2004-06   *02/2004*
○ Author of the most referenced Web-related academic publications on WebBib database   *08/1999*
○ IEEE Distinguished Award for Service to the Real-Time Research Community   *08/1999*

- ○ ACM Service Award for Chairmanship of the ACM SIGPLAN LCTES'98   *06/1998*
- ○ Compaq Award for R&D in CS for work on characterizing Web reference locality   *11/1997*
- ○ Listed in the 1997/98 International Who's Who of Information Technology   *01/1997*
- ○ CS Nominee for The Gitner Award for Distinguished Teaching, Boston University   *10/1995*
- ○ CS Nominee for The Neu Family Award for Excellence in Teaching, Boston University   *10/1995*
- ○ Harvard University GSAS Class Marshal for the 1992 Commencement   *06/1992*
- ○ ARO/AFOSR/ONR award recipient to participate in the 1992 SE Research Review   *05/1992*
- ○ Harvard University GSAS/DAS Graduate Fellowship   *09/87 – 09/1991*
- ○ Recipient of the Dennis Devlin Microsoft Student Award   *07/1990*
- ○ Harvard University Nominee for the IBM Predoctoral Fellowship   *03/89 & 03/1990*
- ○ Alexandria University Graduate Fellowship for Academic Excellence   *09/84 – 06/1987*
- ○ Egyptian National Undergraduate Fellowship for Academic Excellence   *09/79 – 06/1984*
- ○ Honorary Award from the Syndicate of Egyptian Engineers   *10/1984*
- ○ Certificate of Recognition from the CS Students Society, Alexandria University   *04/1983*
- ○ Sadat Award for ranking third over 27,357 students in Egypt's nationwide diploma exam   *08/1979*

CITATIONS

As of January 2014, Google identified over 13,889 citations to 415 articles authored or co-authored by *"Bestavros"*, with an H-Index of 50, and with 28 articles having in excess of 100 citations each and 123 articles having in excess of 10 citations each. Articles authored or co-authored by *"Bestavros"* appear as prior art in over 600 patents. [http://scholar.google.com/citations?user=S5B0QmMAAAAJ]

As of January 2013, the Microsoft Academic Index lists over 7,400 citations by over 7,000 different authors to 252 papers authored or co-authored by *"Bestavros"* (excluding self citations) with an H-Index of 39 and a G-Index of 82. [http://academic.research.microsoft.com/Author/1648575.aspx]

As of July 2012, the Computer Science Index of Scientific Literature (CiteSeer) lists over 3,900 citations to 180 papers authored or co-authored by *"Bestavros"* (excluding self citations) with an H-Index of 24, and ranks *"Bestavros"* in the top 10% of the 10,000 most-cited CS authors. [http://citeseerx.ist.psu.edu/stats/authors]

As of its last update in June 2004, the index of research papers on Web technologies (WebBib) lists over 500 citations to core papers of which *"Bestavros"* was an author or co-author (excluding self citations) and ranks *"Bestavros"* third out of all 1,086 authors in its databases. [http://www.cs.wpi.edu/~webbib/Authorref.html]

GRANTS AND SPONSORED RESEARCH (PARTIAL LIST)

[$800,000] National Science Foundation. (PI/PD) One of four Investigators   *09/14 – 08/2017*
    Title: SCOPE – A Smart-city Cloud-based Open Platform and Ecosystem
    Program: Partnerships for Innovation (PFI:BIC)

[$10,000,000] National Science Foundation. (Co-PI) One of ten Investigators   *07/14 – 06/2019*
    Title: Frontier: MACS – A Modular Approach to Cloud Security
    Program: Secure and Trustworthy Cyberspace (SaTC)

[$110,000] Draper Laboratories. (PI) One of two Investigators   *07/14 – 06/2015*
    Title: FORMSEC Software Inspection System
    Program: Independent Research and Development Program (IRAD)

[$200,000] National Science Foundation. (Co-PI) One of two Investigators   *09/13 – 08/2015*
    Title: Holistic Cloud Security: Verifiable Computation and Databases
    Program: Secure and Trustworthy Cyberspace (SaTC)

[$110,000] Draper Laboratories. (PI) One of two Investigators   *07/13 – 06/2014*
    Title: Invariant-Based Characterization of Binary Program Control Flow Graphs
    Program: Independent Research and Development Program (IRAD)

[$1,000,000] National Science Foundation. (Co-PI) One of six Investigators   *01/12 – 12/2014*
    Title: A Cyber-Physical Infrastructure for the "Smart City"
    Program: CISE/CPS Cyber-Physical Systems Program

[$38,000] Google. (Co-PI) One of two Investigators   *01/12 – 12/2014*
  Title: Generalized Centrality Measures with Applications to Information Networks
  Program: Google Faculty Research Award

[$3,000,000] National Science Foundation. (PI/PD) One of eight Investigators   *09/10 – 08/2015*
  Title: Towards Trustworthy Interactions in the Cloud.
  Program: CISE/CNS Trustworthy Computing Program

[$100,000] AFRL BBN Subcontract. (PI/PD) One of two Investigators   *04/10 – 03/2011*
  Title: Cross-Domain Identity Management and Entitlement.
  Program: Cross-Domain Innovation & Science (award returned due to DFAR restrictions)

[$60,000] AFRL BBN Subcontract. (PI/PD) Sole Investigator   *01/10 – 12/2010*
  Title: Delegation of Authority Web Services.
  Program: Cross-Domain Innovation & Science (award returned due to DFAR restrictions)

[$199,810] National Science Foundation. (PI/PD) Sole Investigator   *09/09 – 08/2011*
  Title: Towards a Marketplace for Colocation of Cloud Services
  Program: CISE/CNS EAGER Program

[$165,352] National Science Foundation. (PI/PD) Sole Investigator   *09/09 – 08/2010*
  Title: US-Middle East: Regional Workshop On Emerging Networking Research
  Program: OISE International Planning and CISE Programs

[$400,000] National Science Foundation. (Co-PI) One of three Investigators   *09/08 – 08/2011*
  Title: Genericity in Network Software
  Program: CISE/CNS Software for Real Systems Program

[$1,999,573] National Science Foundation. (Co-PI) One of five Investigators   *11/07 – 10/2011*
  Title: Event-Driven Sensing for Enterprise Reconfigurability and Optimization
  Program: ENG/EFRI Emerging Frontiers in Research and Innnovation

[$99,999] National Science Foundation. (PI/PD) One of three Investigators   *09/07 – 08/2010*
  Title: Leveraging Type Systems for High-Assurance Cyber-Physical Systems
  Program: CISE/CNS EHS/CPS Computing Systems Research

[$199,000] National Science Foundation. (PI/PD) Sole Investigator   *06/07 – 05/2008*
  Title: NSF Research Infrastructure PI Meeting Supplemental Funding
  Program: CISE/CNS Major Research Infrwastructure Program

[$300,000] National Science Foundation. (PI/PD) One of two Investigators   *09/05 – 08/2009*
  Title: Towards Trusted Adaptation Dynamics in Computing Systems and Networks
  Program: CISE/CNS Cybertrust Program

[$390,000] National Science Foundation. (Co-PI) One of two Investigators   *09/05 – 08/2009*
  Title: Expressive Resource Specification and Discovery in Configurable Networks
  Program: CISE/CNS Networking Technology and Systems

[$6,000] National Science Foundation. (PI/PD) Sole Investigator   *10/05 – 09/2006*
  Title: Internet Flows as First Class Values: Support for Dependable Internet Services
  Program: Research Experiences for Undergraduates

[$25,000] National Science Foundation. (PI/PD) Sole Investigator   *09/05 – 08/2006*
  Title: IEEE ICNP Travel Awards for Graduate Students and Minorities
  Program: CISE/CNS Networking Technology and Systems

[$37,000] Fortress Technologies. (PI/PD) Sole Investigator   *06/05 – 08/2006*
  Title: Performance Profiling of End-Host Intrusion Detection Systems
  Program: University Collaboration Program

[$25,000] Microsoft Research. (PI/PD) Sole Investigator   *09/04 – 08/2005*
  Title: BU/CS Industrial Affiliates Program
  Program: Microsoft University Relations

[$25,000] Sprint Research Labs. (Co-PI) One of two Investigators   *06/05 – 12/2005*
  Title: Cellular Network IP Traffic Measurement and Characterization
  Program: Sprint Advanced Technology Labs, IP Group

[$6,000] National Science Foundation. (PI/PD) Sole Investigator   *10/04 – 09/2005*
  Title: Internet Flows as First Class Values: Support for Dependable Internet Services
  Program: Research Experiences for Undergraduates

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Litigation and bankruptcy checks for companies and debtors.

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Sync your system to PACER to automate legal marketing.

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