

ABRAHAM (IBRAHIM) MATTA

Computer Science Department

Boston University, Boston, MA 02215

Telephone: (617) 353-8919. E-mail: matta@bu.edu. URL: sites.bu.edu/matta

ACM Senior Member. IEEE Senior Member (IEEE Communications Society)

A. PROFESSIONAL PREPARATION

Alexandria University, Egypt	Computer Science and Automatic Control	B.S. 1986
Alexandria University, Egypt	Computer Science and Automatic Control	M.S. 1989
University of Maryland at College Park	Computer Science	Ph.D. 1995

B. APPOINTMENTS

Computer Science Department, Boston University

Chair

July 2018 – present

Full Professor

September 2012 – present

Associate Professor

September 2003 – August 2012

Assistant Professor

July 1999 – August 2003

College of Computer Science, Northeastern University

Assistant Professor

September 1995 – June 1999

C. SELECTED PRODUCTS

1. Prateek Jain, Arash Sarabi, Abraham Matta, and Violet R. Syrotiuk. Design and Modeling of a New File Transfer Architecture to Reduce Undetected Errors Evaluated in the FABRIC Testbed. In *Proceedings of ACM SIGMETRICS 2025*, Stony Brook, New York, June 2025.
2. Zongshun Zhang, Andrea Pinto, Valeria Turina, Flavio Esposito, and Ibrahim Matta. Privacy and Efficiency of Communications in Federated Split Learning. *IEEE Transactions on Big Data*, May 2023.
3. Nabeel Akhtar, Ibrahim Matta, Ali Raza, Leonardo Goratti, Torsten Braun, and Flavio Esposito. Managing Chains of Application Functions over Multi-Technology Edge Networks. *IEEE Transactions on Network and Service Management*, 2021.
4. Ali Raza, Zongshun Zhang, Nabeel Akhtar, Vatche Ishakian, and Ibrahim Matta. LIBRA: An Economical Hybrid Approach for Cloud Applications with Strict SLAs. In *Proceedings of the 9th IEEE International Conference on Cloud Engineering (IC2E)*, October 2021. (Best Paper Award)
5. Nabeel Akhtar, Ali Raza, Vatche Ishakian, and Ibrahim Matta. COSE: Configuring Serverless Functions using Statistical Learning. *Proceedings of IEEE INFOCOM*, Beijing, China, April 2020.
6. Zhongliang Zhao, Eryk Schiller, Eirini Kalogeiton, Torsten Braun, Burkhard Stiller, Mevlut Turker Garip, Joshua Joy, Mario Gerla, Nabeel Akhtar, and Ibrahim Matta. Autonomic Communications in Software-driven Networks. *IEEE JSAC Special issue on Emerging Technologies in Software-driven Communication*, 35(11):2431–2445, November 2017.
7. Flavio Esposito, Ibrahim Matta, and Yuefeng Wang. VINEA: An Architecture for Virtual Network Embedding Policy Programmability. *IEEE Transactions on Parallel and Distributed Systems (TPDS)*, Volume 27, Issue 11, November 2016.
8. Flavio Esposito, Donato Di Paola, and Ibrahim Matta. On Distributed Virtual Network Embedding with Guarantees. *IEEE/ACM Transactions on Networking*. December 2014.
9. Yuefeng Wang and Ibrahim Matta. Multi-Layer Virtual Transport Network Design. *Journal of Network and Systems Management*, pages 1–35, November 2017.
10. Flavio Esposito, Ibrahim Matta, and Vatche Ishakian. Slice Embedding Solutions for Distributed Service Architectures. *ACM Computing Surveys*, 46(1), March 2014.
11. 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.
12. 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.

D. SYNERGISTIC ACTIVITIES

SELECTED COURSES, CHAPTERS, TUTORIALS & SOFTWARE:

- ACM SIGCOMM eBook Chapter: “Optimizing and Modeling Dynamics in Networks”, vol. 1, Aug. 2013.
- Tutorial on “Running RINA on GENI” at GEC19, Atlanta, GA, March 2014.
- Tutorial on “Managing a Virtual Network Function using SDN and Control Theory” at GENI summer camp (BU, May 2016; TAMU, May 2017; UKY, May 2018), GENI workshop (Clemson, Dec. 2016), and MERIF education workshop (GWU, May 2019). Webinar on October 2016.
- RINA: a clean-slate recursive network software architecture (csr.bu.edu/rina)

SELECTED SERVICE TO PROFESSION:

- Program Director, National Science Foundation, CISE. September 2024-2026.
- FABRIC Scientific Advisory Board. FABRIC is part of NSF’s Mid-scale Research Infrastructure Big 10 Ideas. January 2020-2024.
- Associate Editor, IEEE Networking Letters, June 2018-present.
- Associate Editor, IEEE Transactions on Mobile Computing, April 2017–January 2022.
- Co-organizer, NSF MERIF (Midscale Experimental Research Infrastructure Forum) Education Workshop, Boston University (May 2023), Madison (June 2022), Florida International U. (January 2020), George Washington University (May 2019).
- Co-organizer and TPC Co-chair, MERIT (Midscale Education and Research Infrastructure and Tools) Workshop, co-located with IEEE ICNP, Chicago, Illinois, October 7, 2019.
- Co-organizer, GENI at the Chameleon User Meeting, Austin, Texas, February 6-7, 2019.
- Member of the Steering Committee of the International Conference on Wired/Wireless Internet Communications (WWIC), February 2005 - 2019.
- Co-organizer, GENI Regional Workshop & Summer Camp, U. Kentucky, May 14-18, 2018.
- Co-organizer, 1st Global Experimentation for Future Internet (GEFI) Workshop, Rio de Janeiro, Brazil, October 25-26, 2017.
- Co-organizer, GENI Regional Workshop, U. Oregon, November 3-4, 2017.
- Co-organizer, GENI NICE Workshop, Toronto, Canada, Oct. 10, 2017 (with IEEE ICNP.)
- Co-organizer, GENI Regional Workshop & Summer Camp, Texas A&M, May 22-26, 2017.
- Co-organizer, GENI Regional Workshop, Florida International University, Miami, March 2017.
- Member, Steering Committee of Computer and Networking Experimental Research using Testbeds (CNERT), 2016-2024.
- Co-organizer, GENI NICE Workshop, Irvine, CA, Dec. 2016 (with ACM CoNEXT.)
- Co-organizer, GENI Regional Workshop & Summer Camp, Boston U., May 23-27, 2016.
- General Co-chair, the 14th International Conference on Wired & Wireless Internet Communications (WWIC 2016), Thessaloniki, Greece, May 25-27, 2016.
- General Chair, the 16th IEEE International Symposium on a World of Wireless, Mobile and Multimedia Networks (WoWMoM), Boston University, Boston, MA, June 15-18, 2015.
- Organizer and Technical Program Co-Chair, IEEE Computer Communications Workshop (CCW), Hyannis, Cape Cod, MA, October 10-12, 2011.
- General Chair, the 4th International Symposium on Modeling and Optimization in Mobile, Ad-hoc, and Wireless Networks (WiOpt 2006), Boston, MA.
- Co-organizer and Technical Program Co-chair, the 13th IEEE International Conference on Network Protocols (ICNP 2005), Boston, MA.
- Co-organizer and Technical Program Co-chair, NeXtworking 2003 (COST-IST and NSF funded workshop), June 23-25, Chania, Crete, Greece.