

# Mario A. Sánchez

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RESEARCH INTERESTS      My research focuses on experimental computer systems and internet measurements, particularly distributed systems and Internet services.

EDUCATION              Ph.D. Computer Science, Northwestern University, June 2013 (Expected)  
                                ◦ Passed PhD Qualifying Examination  
                                ◦ Advisor: Fabián Bustamante  
                                M.S. Computer Science, Northwestern University, June 2011  
                                M.S. Telecommunications, University of Maryland at College Park, May 2004  
                                B.E. Telecommunications (honors), Pontificia Universidad Católica Madre y Maestra, Dominican Republic, June 2000

PROFESSIONAL EXPERIENCE      ◊ **Research Intern**, AT&T Labs Research, Florham Park, NJ. 06/2010-08/2010.  
                                ◊ **Research Intern**, Telefónica I+D, Barcelona, Spain. 06/2009-09/2009.  
                                ◊ **Full time faculty member**, Pontificia Universidad Católica Madre y Maestra (PUCMM), Dominican Republic. 2005-2008.  
                                ◊ **Director, International Center for Innovation in Technology and Management (CITAM)**, Pontificia Universidad Católica Madre y Maestra (PUCMM), Dominican Republic. 2006-2008.  
                                ◊ **Program Coordinator**, Master of Science in Networking and Systems Administrator, Pontificia Universidad Católica Madre y Maestra (PUCMM) / Rochester Institute of Technology (RIT), Dominican Republic. 2006-2008.  
                                ◊ **Systems Consultant**, TRICOM, S.A., Dominican Republic. 2005-2008.  
                                ◊ **Systems Engineer for the FDIC Network Operations Center**, Lockheed Martin/BTAS, Virginia, USA. 2004-2005.  
                                ◊ **Adjunct Professor**, Pontificia Universidad Católica Madre y Maestra, Dominican Republic, 2000-2002.  
                                ◊ **Support Engineer**, TRICOM S.A., Dominican Republic. 2000-2002.  
                                ◊ **Wireless Switching Technician**, TRICOM S.A., Dominican Republic. 2000.

PUBLICATIONS              ◊ John S. Otto, **Mario A. Sánchez**, David R. Choffnes, Fabián E. Bustamante, and Georgos Siganos. On Blind Mice and the Elephant –Understanding the Network Impact of Large Distributed Systems, *In Proc. ACM SIGCOMM 2011*, Toronto, Canada, August 2011.  
                                ◊ Zachary S. Bischof, John S. Otto, **Mario A. Sánchez**, John P. Rula, David R. Choffnes, and Fabián E. Bustamante. Crowdsourcing ISP Characterization to the Network Edge, *In Proc. ACM SIGCOMM Workshop on Measurements Up the Stack (W-MUST) 2011*, Toronto, Canada, August 2011.  
                                ◊ David R. Choffnes, **Mario A. Sánchez** and Fabián E. Bustamante, “Network positioning from the edge: An empirical study of the effectiveness of network positioning in P2P systems”, *In Proc. of INFOCOM (miniconference) 2010*, San Diego, CA, March 2010.

- NON-REFEREED PUBLICATIONS
- ◇ David R. Choffnes, **Mario A. Sánchez** and Fabián E. Bustamante, “Network Positioning From the Edge: An empirical study of the effectiveness of network positioning in P2P systems”. Tech. Rep. NWU-EECS-09-15, Northwestern University, June 2009.
  - ◇ **Mario A. Sánchez**, David R. Choffnes and Fabián E. Bustamante, “Heuristics for passively detecting interference from peers in P2P systems”. Tech. Rep. NWU-EECS-09-23, Northwestern University, May 2009.
- POSTERS
- ◇ **Mario A. Sánchez**, John S. Otto, Zachary S. Bischof and Fabián E. Bustamante, “Dasu - ISP Characterization from the Edge: A BitTorrent Implementation”, *To appear in Proc. ACM SIGCOMM 2011*, Toronto, Canada, August 2011.
- OTHER EXPERIENCE
- ◇ **Research Assistant**, Aqualab Group, Northwestern University, Evanston, USA. 09/2008-present.
  - ◇ **Teaching Assistant**, Northwestern University, Evanston, USA. 2009-2011.
    - Operating Systems - EECS 343
    - Introduction to Computer Systems - EECS 213
    - Introduction to Computer Programming - EECS 110
  - ◇ **Teaching Assistant**, University of Maryland, College Park, USA. 2003-2004.
    - Management and Organizational Behavior in the Telecommunications - ENTS 625
    - Network Planning and Design - ENTS 675
  - ◇ **Technical Associate**, New Markets Growth Fund, University of Maryland, College Park, USA. 2003-2004.
- TEACHING
- ◇ Computer Networks I (ITT 421-T), Fall 2005, Fall 2006, Spring 2007
  - ◇ Computer Networks II (ITT 428-T), Spring 2006, Fall 2006, Fall 2007, Spring 2008, Summer 2008
  - ◇ Data Switching (ITT 427-T), Spring 2006, Summer 2006
  - ◇ Laboratory Data Switching (ITT 427-P), Spring 2006, Summer 2006, Summer 2007, Fall 2007, Spring 2008
  - ◇ Laboratory Data Transmission (ITT 422-P), Fall 2005, Spring 2006, Fall 2006, Spring 2007
  - ◇ Data Transmission (ITT 422-T), Spring 2002
  - ◇ Laboratory Digital Communications (ITT 337-P), Fall 2001
- COURSE DEVELOPMENT
- ◇ **ITT-421-T/ITT-428-T: Computer Networks I/II**  
Completely revamped these courses. Adopted a new textbook, created lecture materials including WEB content for each lecture.
  - ◇ **ITT-422-P: Laboratory Data Transmission**  
Created a semester long project that requires students to design and present a solution to a worldwide network problem presented as a public Request for Proposal (RFP) which students must answer to as part of a team. Each group of students is required to both write the proposal and present their implementation to a panel of industry experts.
  - ◇ **ITT-422-P: Laboratory Data Switching**  
Worked with several other colleagues to develop lab manuals and practical scenarios for the computer networks laboratories. We developed new syllabi, designed practical projects, and developed lab manuals that include scenarios related to routing and switching as well as network security.
- HONORS & AWARDS
- ◇ **Walter P. Murphy Fellowship**, Northwestern University, 2008-2009.
  - ◇ **Technical Associate**, New Markets Growth Fund: Only Telecommunications’ Master student selected to work in collaboration with 10 top MBA students that qualify investments for the 20 M venture fund, University of Maryland, 2003-2004

- ◇ **Fulbright Scholarship** sponsored by the U.S Department of State, 2002-2004.
  - ◇ **Summa Cum Laude**, Pontificia Universidad Católica Madre y Maestra, June 2000.
- SKILLS
- ◇ Operating Systems: Linux, MacOS X, Solaris, Windows.
  - ◇ Programming Languages: Java, Hadoop, C/C++, Perl, Python, UNIX shell scripting (bash, csh, sh, ksh), HTML, JavaScript, assembler (Intel x86).
  - ◇ Network Protocols: TCP, UDP, IP(v4/v6), ICMP, HTTP, SNMP, DNS, BitTorrent
  - ◇ Network Services: BIND; Sendmail (smtp), Apache (http)
  - ◇ Databases: MySQL, PostgreSQL
- CERTIFICATIONS
- ◇ Member, ACM and IEEE
  - ◇ Cisco Certified Network Associate CCNA
  - ◇ Sun Certified Systems Administrator SCSA (Solaris 9)
  - ◇ Sun Certified Network Administrator SCNA (Solaris 9)
- SOFTWARE ARTIFACTS
- ◇ DASU - Plugin for the Vuze BitTorrent client that constantly analyzes BitTorrent performance and results using limited light-weight measurements to characterize Internet Service Providers' service and infer the presence of practices that negatively impact network performance.
  - ◇ ILSM - Lead Developer/Architect involved in the design and implementation of an LDAP interface between Solaris/ORACLE servers and SMSC server. The framework is being used in production to serve as the integration between dissimilar SMS and Prepaid platforms.- TRICOM
  - ◇ PASNMP - Design and development of an SNMP v2c/v3 interface between different network devices and the Patrol Enterprise Manager v.4.2. The application is being used to support and monitor over 3,000 network devices nationwide.- TRICOM
  - ◇ EDASH - Development of an Executive Dashboard for FDIC Management implementing Netcool tools (RAD, ISM, WebTop, Omnibus). This Dashboard is deployed at the Network Operation Center and helps monitor the status of the agencies nationwide network.- FDIC
- Other Projects:*
- ◇ Developed and implemented an alarm-monitoring system for Solaris servers designed to reduce the amount of time critical alerts remained active that could potentially lead to otherwise preventable service interruptions.- TRICOM
  - ◇ Created, developed and implemented a web-based reporting tool that decreased the technical burden of creating daily reports submitted to the administration; greatly reducing reporting errors caused by human mistakes.- TRICOM
- PROFESIONAL ACTIVITIES
- ◇ Executive Director and Design Editor. *ISométrico@FCI Newsletter*, triennial Newsletter of the Engineering Faculty. Pontificia Universidad Católica Madre y Maestra, 2006-2008.
  - ◇ Plan and develop program modifications to the Telecommunications Engineering Curriculum and the undergraduate engineering course sequence. Pontificia Universidad Católica Madre y Maestra, 2006.
  - ◇ Serve as trainer/instructor for the CCNA (Cisco Certified Network Associate) curriculum. TEP, Pontificia Universidad Católica Madre y Maestra, 2005-2006.
  - ◇ Executive Editor and Design Editor. *TeleScope Newsletter*, biannual Telecom Students and Alumni Network (TSAN) Newsletter. University of Maryland, College Park, 2003-2004.
- OTHER
- ◇ Fluent in English and Spanish.

*Mario A. Sánchez*

- ◇ Member for 4 years of the Catholic Youth Organization at Pontificia Universidad Católica Madre y Maestra. Coordinator of several 3-5 days activities related to teaching young people leadership, self- esteem, and team-work. 1998-2002

REFERENCE Available upon request.