

# Mario A. Sánchez

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

EDUCATION     ◇ **Northwestern University**, Evanston, IL.  
Ph.D. in Computer Science, first-year student (expected: June 2013)  
Advisor: Fabián Bustamante.  
GPA: 3.86/4.0  
◇ **University of Maryland**, College Park, MD.  
Master of Science in Telecommunications, May 2004.  
GPA: 3.9/4.0  
◇ **Pontificia Universidad Católica Madre y Maestra**, Dominican Republic.  
Bachelor of Engineering in Telecommunications, June 2000 (4-year degree).  
GPA: 3.9/4.0

WORK EXPERIENCE     ◇ **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.  
◇ **Technical Associate**, New Markets Growth Fund, University of Maryland, College Park, USA. 2003-2004.  
◇ **Teaching Assistant**, University of Maryland, College Park, USA. 2003-2004.  
◇ **Adjunct Professor**, Pontificia Universidad Católica Madre y Maestra, Dominican Republic. , 2000-2002.  
◇ **Support Engineer for Dept. of Operations VA**, TRICOM S.A., Dominican Republic. 2001-2002.  
◇ **Support Engineer CTI**, TRICOM S.A., Dominican Republic. 2000-2001.  
◇ **Wireless Switching Technician**, TRICOM S.A., Dominican Republic. 2000.

- HONORS & AWARDS
- ◇ **Walter P. Murphy Fellowship**, Northwestern University, 2008-Present.
  - ◇ **Technical Associate**, New Markets Growth Fund: I was the only Telecommunications 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.
- RESEARCH PROJECTS
- I am currently working on two large research projects that entail evaluating the performance of layered computer services from the perspective of individual peers in P2P systems located at the edge of the network:
- ◇ **Network Positioning at The Edge of the Network**: In this work, we are exploring the accuracy and overhead of existing network positioning services based on the largest empirical dataset collected to date that incorporates measurements from the edge of the network. Our initial results indicate that many common assumptions about the Internet latency space are invalid.
  - ◇ **DNS Performance and its impact on CDN services**: We are evaluating the resilience of DNS systems, their impact on infrastructure deployment of CDN networks, as well as their influence on the performance perceived by clients located at the edge of the network.
- PUBLICATION
- ◇ D.R. Choffnes, M.A. Sánchez and F.E. Bustamante, "Network Positioning at The Edge of the Network", In preparation.
  - ◇ M.A. Sánchez, D. Choffnes and F.E. Bustamante, "DNS Performance and its impact on CDN services", In preparation.
- 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.
  - ◇ **TT-564-T: Network Security and Design**  
Developed this new course from scratch. Selected textbooks, developed syllabus, created projects (and reference solutions), and developed PowerPoint slides for all lectures.

◇ **ITT-463-T: Convergent Networks**

Developed this new course from scratch. Selected textbooks, developed syllabus, created projects (and reference solutions), and developed PowerPoint slides for all lectures.

SKILLS

- ◇ Operating Systems: Linux, MacOS X, Solaris, Windows.
- ◇ Network Services: BIND 9.2.x 9.3.x; Sendmail (smtp), Apache (http), Netscape Enterprise Server (http)
- ◇ Programming Languages: C, C++, Java, Perl, UNIX shell scripting (bash, csh, sh, ksh), HTML, JavaScript, assembler (Intel x86).
- ◇ Databases: PostgreSQL, MySQL
- ◇ Tools: MatLab 6.0, Satellite Toolkit (STK 4.3), OPNET Modeler 9.1, QTP (Queuing Tool-Pak), Crystal Ball.
- ◇ Security: SunScreen, JASS, CIS
- ◇ Patch management (PatchPro), CHROOT environments, RBAC implementation, RAID 0/1 Arrays (Solaris Volume Manager / Solstice DiskSuite)

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

- ◇ 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. *ISomtrico@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.

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- OTHER
- ◇ Fluent in English and Spanish.
  - ◇ 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 on request.