Jorge Crichigno, PhD.

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Education

- **Ph.D. Electrical and Computer Engineering, Networks and Systems track. Dec. 2009**
  University of New Mexico, Albuquerque - NM, USA.
  GPA: 3.98/4
- **M.S. Electrical and Computer Engineering, Dec. 2008**
  University of New Mexico, Albuquerque - NM, USA.
  GPA: 4/4
- **B.S. Electronics Engineering. July 2004**
  Catholic University, Asuncion - Paraguay.
  GPA: 4.16/5

Professional and Academic Experiences

- **University of South Carolina. Associate Professor. Jan. 2018 - Present.**
  Founding director of the USC's Cisco Network Academy, Palo Alto Networks Academy.
- **University of South Florida. Visiting Professor. Aug. 2016 - December 2016.**
  Florida Center for Cybersecurity.
  Advisor of PhD students in Electrical Engineering, in network function virtualization (NFV).
- **Northern New Mexico College. Assistant / Associate Professor. Aug. 2009 - Dec. 2017.**
  Led the then new program (2009) to the initial ABET Accreditation (2014).
  Founding Director, NNMC VMware Academy (Datacenter Virtualization curriculum).
  Founding Director, NNMC Cisco Networking Academy (CCNA, CCNP, CCNA Security / NSA CNSS 4011).
- **University of New Mexico. Research Assistant. Aug. 2005 - Aug. 2009.**
  Developed optimization models and protocols for multi-hop wireless mesh networks (WMNs).
  Designed and prototyped next generation Internet architectures as part of NSF FIND initiative.
- **Shanghai Jiao Tong University, Shanghai, China. Research Assistant. Feb. - Aug. 2007.**
  Designed a distributed routing protocol for IEEE 802.11 multi-radio WMNs.
  Lectured on special topics in wireless networks, including channel assignment and routing in WMNs.
- **Catholic University, Asuncion, Paraguay. Feb. 2003 - Aug. 2005.**
  Lectured a Computer Networks course (400 hundred level).
  Designed laboratory sessions including implementations of application level protocols using TCP/UDP sockets and routing protocols in CNET network simulator.
- **Conexion Group, Asuncion - Paraguay. Junior Engineer. Jan. 2004 - Jul. 2005.**
  Designed a software switch for SS7 systems under IP networks, using the SIGTRAN protocol stack. Conexion operated an IP network with point-of-presences in South and North America, including Asuncion (Paraguay), Sao Paulo (Brazil), Buenos Aires (Argentina), and Miami.

- **National Computing Center, Paraguay. Research Assistant. Jan. 2003 - Jan. 2004.** Developed multi-objective multicast protocols for IP networks.

Awards

- Best paper award, IEEE Annual International Symposium on Personal, Indoor, and Mobile Radio Communications (PIMRC), Montreal, Canada, Oct. 2017.
- Faculty of the Year 2012-2013, Northern New Mexico College. Recognition received on August 19, 2013.
- Regional recognition (including US and Canada) from Cisco Systems, for going *Above and Beyond* in preparing students in the networking field through applied undergraduate research, San Jose, CA, July 16-18, 2013.
- Outstanding Academic Evaluation during all consecutive years since 2009/10 to 2016/17, Northern New Mexico College.
- Nominated among the three finalist papers for best paper award, IEEE International Symposium on a World of Wireless, Mobile and Multimedia Networks (WoWMoM 2009), Greece, June 15-19, 2009.
- NSF Student Travel Grant for IEEE International Symposium on a World of Wireless, Mobile and Multimedia Networks (WoWMoM 2009), Greece, June 15-19, 2009.
- Ranked number 1 in Computer Engineering in the Qualifying Exam for Ph.D., University of New Mexico, 2006.
- Distinction on undergraduate thesis. Catholic University, Asuncion - Paraguay, 2004.
- Won Research Project Funds of the Catholic University, project Multi-objective Multicast Routing over IP Networks, Asuncion - Paraguay, 2003.

Grant Proposals Participation

- Principal Investigator, *Collaborative: Multi-state Community College, University and Industry Collaboration to Prepare Learners for 21st Century IT Jobs*, Program: NSF Advanced Technological Education (ATE), 07/01/2019 - 06/30/2022 ($300,000) (under review).
- Co-Principal Investigator, *OAC Core: Small: Devising Data-driven and Formal Methodologies by Employing Large-scale Empirical Data to Fingerprint, Attribute, Remediate and Analyze Internet-scale IoT Maliciousness*, Program: OAC Research Core, 02/01/2019 - 01/01/2022 ($90,000) (under review).
- Principal Investigator, *CyberTraining CIP: Cyberinfrastructure Expertise on High-throughput Networks for Big Science Data Transfers*, Program: NSF CyberTraining, 10/01/2018 - 30/09/2021 ($500,000) (awarded).
- Principal Investigator, *Collaborative Research: Capacity Building: Building a Cybersecurity Pipeline through Experiential Virtual Labs and Workforce Alliances*, Program: NSF SFS Capacity Track, 01/15/2018 - 08/31/2020 ($500,000. Crichigno part: $433,689) (awarded).
- Principal Investigator, *CC*DNI Campus Design: Northern Network Expansion for Large Science and Engineering Data Flows*, Program: NSF CC*DNI, 2015 - 2017 ($350,000) (awarded).

- Principal Investigator, *Northern Storage Area Network for Big Science and Engineering Flows*, Program: NSF NM EPSCoR, 2015 - 2017 ($50,000) (awarded).
- Senior Personnel, *Northern VMware Academy*, Program: Carl Perkins (institutional grant), 2015 - 2016 (Crichigno part: $40,000) (awarded).
- Co-Principal Investigator, *Pathways for Engineering: Access to Resources for Learning (PEARL)*, Program: NSF S-STEM, 2013-2018 ($621,000) (awarded).
- Principal Investigator, *EMERALD: Enhancing Minority Engineering Retention and Leading in Diversity.* Minority Science and Engineering Improvement Program, US Department of Education, 2013-2016 ($750,000) (not awarded).
- Co-organizer, *Computational Thinking for High Schools at Northern New Mexico*, Google Grant to develop Workshops for Computational Thinking in High Schools, 2013 ($12,000) (awarded).
- Principal Investigator, *Teaching Discrete Structures on an Undergraduate Discrete Math course with Real Solar PV Data.* Agency: Power Company of New Mexico, 2012 ($4,620) (awarded).
- Principal Investigator, *Undergraduate Research Experience: Impact of Objective Multipliers on the PNM Optimization Problem.* Agency: Power Company of New Mexico, 2012-2013 ($13,200) (awarded).
- Co-organizer, *Computational Thinking for High Schools at Northern New Mexico*, Google Grant to develop Workshops for Computational Thinking in High Schools, 2012 ($10,000) (awarded).
- Principal Investigator, *Improving Broadband Connectivity for Tribal and Regional Colleges in New Mexico*, Program: NSF NM EPSCoR, 2011-2012 ($250,000) (awarded).
- Principal Investigator, A Regional Training Center for Computer Networking Engineers, Department of Labor TAACCCT Grant application, June 2011 ($1,000,000) (not awarded).

Teaching Experience

- EECE 498: Independent Study Topics: Applied Cybersecurity, Fall 2017 (undergraduate).
- EECE 399: Datacenter Virtualization, Spring 2016 (undergraduate).
- IT 410/510: Information Assurance and Security, Spring 2014 - Present (cross-listed graduate / undergraduate).
- EECE 499/IT 530: Advanced Routing Protocols and MPLS Networks, Spring 2016 (cross-listed graduate / undergraduate course).
- EECE 152: Computer Programming I, Spring 2016 (Java).
- IT 490/491: Senior Design Project (Capstone), Spring 2010 - Present (undergraduate).
- EECE 440: Advanced Computer Networks, Fall 2012 - Present (undergraduate).
- EECE 540: Advanced Computer Networks (jointly with University of New Mexico - graduate level), Fall 2012.
- EECE 152: Computer Programming I (C Language), Fall 2013 (undergraduate course).
- EECE 238: Computer Logic Design with VHDL Lab, Summer 2010, Spring 2010, Fall 2012 (undergraduate).

- EECE 342: Wireless and Mobile Computing, Spring 2011, Summer 2011, Fall 2013, Fall 2014 (undergraduate course).
- EECE 547/447: Routing and Switching, Spring 2013 - Present (cross-listed graduate / undergraduate course).
- IT 530: Network Administration, Fall 2011 (graduate level).
- EECE 330: Computer Networks II, Fall 2010, Fall 2011 (undergraduate course).
- EECE 132: Introduction to Computer Networks, Spring 2011, Spring 2010 (undergraduate course).

Societies and Technical Groups

- ABET Program Evaluator representing the IEEE, 2014 - Present.
- Full Membership in Sigma Xi, The Scientific Research Society, 2010 - Present.
- Member of the IEEE society, 2011 - Present.
- Member of the American Society for Engineering Education, 2012 - Present.
- Member New Mexico Skill Up Network (SUN) Online (Consortium of New Mexican Universities for Online Education), 2014 - Present.

Papers in Refereed Conferences and Journals

[1] N. Neshenko, E. Bou-Harb, J. Crichigno, G. Kaddoum, N. Ghani, *Demystifying IoT Security: An Exhaustive Survey on IoT Vulnerabilities and a First Empirical Look on Internet-scale IoT Exploitations*, IEEE Communications Surveys and Tutorials, under review.

[2] J. Crichigno, E. Kfoury, E. Bou-Harb, N. Ghani, Y. Prieto, C. Vega, J. Pezoa, C. Huang, D. Torres, *A Flow-based Entropy Characterization of a NATed Network and its Application on Intrusion Detection*, IEEE International Communications Conference (ICC 2019), Shanghai, China, June 2019.

[3] J. Crichigno, S. Ahmed, A. Dillon, J. Gerdes, R. Brookshire, *Building a Cybersecurity Pipeline through Experiential Virtual Labs and Workforce Alliances*, 2019 Annual Conference of America Society for Engineering Education, Tampa, Florida, June 2019, under review.

[4] D. Oliveira, J. Crichigno, N. Ghani, E. Bou-Harb, *SDN Testbed for Evaluation of Large-Scale Electro-Magnetic Pulse (EMP) Attacks*, IEEE Communications Magazine, accepted for publication.

[5] J. Crichigno, E. Bou-Harb, N. Ghani, *A Comprehensive Tutorial on Science DMZ,* IEEE Communications Surveys and Tutorials, accepted for publication.

[6] G. Srivastava, A. Fisher, R. Bryce, J. Crichigno, *Green Communication with Geolocation*, IEEE 89th Vehicular Technology Conference (VTC2019), Kuala Lumpur, Malaysia, April 2019.

[7] Y. Prieto, C. Vega, J. Pezoa, J. Crichigno, *Shared-risk-aware Design for Survivable Migration in SDN Environments*, IEEE Consumer Communications and Networking Conference (CCNC), Las Vegas, NV, January 2019.

[8] D. Torres, J. Crichigno, C. Sanchez, *Assessing Curriculum Efficiency through Monte Carlo Simulation*, Journal of College Student Retention: Research, Theory and Practice, May 2018.

[9] J. Crichigno, D. Oliveira, N. Ghani, D. Torres, *Impact of Segment Size and Parallel Streams on TCP BBR*, IEEE International Conference on Telecommunications and Signal Processing, Athens, Greece, July 2018.

[10] I. Lopez, J. Crichigno, A. Nandy *Lessons learned from a NSF S-STEM Project in a Rural and Hispanic Serving Institution*, 2018 Annual Conference of America Society for Engineering Education, Salk Lake City, Utah, June 2018.

[11] D. Oliveira, J. Crichigno, N. Siasi, N. Ghani, E. Bou-Harb, *Joint Mapping and Routing of Virtual Network Functions for Improved Disaster Recovery Support*, IEEE SoutheastCon Conference, April 2018.

[12] F. Shaikh, E.Bou-Harb, J. Crichigno, N. Ghani, *A Machine Learning Model for Classifying Unsolicited IoT Devices by Observing Network Telescopes,* International Wireless Communications and Mobile Computing Conference (IWCMC), June 2018.

[13] M. Pourvali, H. Bai, J. Crichigno, N. Ghani, *Multicast Virtual Network Services Embedding for Improved Disaster Recovery Support*, IEEE Communications Letters, Vol. 22, Issue 7, April 2018.

[14] D. Oliveira, J. Crichigno, N. Ghani, *On Sensitive and Weighted Routing and Placement Schemes for Network Function Virtualization*, Infocommunications Journal, Vol. 9, No. 4, December 2017

[15] M. Galluscio, N. Neshenko, E. Bou-Harb, Y. Huang, N. Ghani, J. Crichigno, G. Kaddoum, *A First Empirical Look on Internet-scale Exploitations of IoT Devices*, IEEE Annual International Symposium on Personal, Indoor, and Mobile Radio Communications (PIMRC), Montreal, Canada, Oct. 2017.

[16] M. Pourvali, C. Cavdar, K. Shaban, J. Crichigno, N. Ghani, *Post-failure Repair for Cloud-based Infrastructure Services after Disasters*, Computer Communications Journal, Vol. 111, No 1, July 2017.

[17] J. Crichigno, D. Oliveira, N. Ghani, D. Torres, *Joint Routing and Placement of Virtual Network Functions*, IEEE International Conference on Telecommunications and Signal Processing, Barcelona, Spain, July 2017.

[18] J. Crichigno, F. Shaikh, M. Pourvali, A. Rayes, N. Ghani, *Optimal Traffic Scheduling for Intrusion Prevention Systems*, International Journal of Advances in Telecommunications, Electrotechnics, Signals and Systems, Vol. 6, No 2, 2017, July 2017.

[19] H. Bai, K. Shaban, F. Gu, J. Crichigno, S. Khan, N. Ghani, *Overlay Network Scheduling Design*, Computer Communications, Vol. 82, May 2016.

[20] D. Torres, J. Crichigno, *Influence of Reflectivity and Cloud Cover on Optimal Solar Tilt Angle*, Resources Journal, Special Issue on Alternative Energy Sources in Developing and Developed Regions, September 2015.

[21] H. Bai, F. Gu, K. Shaban, J. Crichigno, S. Khan, N. Ghani, *Virtual Network Advance Reservation*, IEEE International Conference on Cloud Networking, Niagara Fall, Canada, October 2015.

[22] H. Bai, F. Gu, K. Shaban, J. Crichigno, S. Khan, N. Ghani, *Flexible Advance Reservation Models for Virtual Network Scheduling*, IEEE International Workshop on Cloud-based Networks and Applications, Clearwater Beach, Florida, USA, October 2015.

[23] J. Crichigno, N. Ghani, *A Linear Programming Scheme for Intrusion Prevention System Traffic Scheduling*, IEEE International Conference on Telecommunications and Signal Processing, Prague, Czech Republic, July 2015.

[24] J. Crichigno, I. Lopez, R. Peralta, A. Perez, *From Conception to Accreditation: The Path of an Engineering Technology Program*, 2015 Annual Conference of America Society for Engineering Education, Seattle, Washington, June 2015.

[25] H. Bai, F. Gu, J. Crichigno, S. Khan, N. Ghani, *Virtual Network Scheduling Design*, IEEE International Conference on Cloud Networking, Luxembourg, October 2014.

[26] M. Pourvalli, H. Bai, F. Gu, K. Sabhan, M. Rahnamay, J. Crichigno, M. Hayat, S. Khan, N. Ghani, Virtual *Network Mapping for Cloud Services Under Probabilistic Regional Failures*, IEEE International Conference on Cloud Networking, Luxembourg, October 2014.

[27] R. Rivera, J. Crichigno, N. Ghani, *A Comparative Study of Routing Metrics for Reliable Multi-Path Provisioning*, IEEE International Conference on Computing, Networking and Communications (ICNC'14), Honolulu, Hawaii, February 2014.

[28] D. Torres, J. Crichigno, G. Padilla, R. Rivera, *Scheduling Coupled Photovoltaic, Battery and Conventional Energy Sources to Maximize Profit Using Linear Programming*, Journal of Renewable Energy, 72 (2014), p. 284-290.

[29] J. Crichigno, I. Lopez, *A Learning-by-Doing Technology Program Based on Traditional Engineering Foundations and Hands-on Implementation-Driven*, 2014 Annual Conference of America Society for Engineering Education, Indianapolis, Indiana, June 2014.

[30] I. Lopez, J. Crichigno, A. Perez, *A Successful Partnership between Industry and Academia: Improving Curriculum, Research, and Outreach by Collaboration with Industry*, 2014 Annual Conference of America Society for Engineering Education, Indianapolis, Indiana, June 2014.

[31] A. Perez, I. Lopez, J. Crichigno, R. Peralta, D. Torres, *Enhancing Computational Thinking Skills for New Mexico Schools*, 2014 Annual Conference of America Society for Engineering Education, Indianapolis, Indiana, June 2014.

[32] J. Crichigno, N. Ghani, J. Khoury, *Traffic Engineering in MPLS Networks with Probabilistic Failures*, IEEE International Communications Conference (ICC 2013), Budapest, Hungary, June 2013.

[33] S. Khalsa, G. Castaneda, R. Rivera, J. Crichigno, A Network Management Software Based on Secure Shell (SSH) Channels and Java Universal Network Graph (JUNG), NSF Computational Thinking Research and Practice Symposium, Santa Fe, NM, Dec. 2013.

[34] J. Crichigno, I. Lopez, A. Perez, G. Heileman, R. Jordan, *Cross-institutional Collaboration on Hybrid (Online + Face-to-face) Engineering Courses among Institutions in New Mexico*, 2013 Annual Conference of America Society for Engineering Education, Atlanta, Georgia, June 2013.

[35] I. Lopez, J. Crichigno, R. Peralta, C. Knight, *A Highly Successful Summer Accelerator Math Program in a Hispanic Serving Institution*, 2013 Annual Conference of America Society for Engineering Education, Atlanta, Georgia, June 2013.

[36] J. Crichigno, I. Lopez, *An Alternative Model for Computer Networks Education in Computing Disciplines*, 2012 Annual Conference of America Society for Engineering Education, San Antonio, Texas, June 2012.

[37] I. Lopez, J. Crichigno, *Improving Recruitment and Retention for Engineering Degree Students in a Rural Highly Underserved Community*, 2012 Annual Conference of America Society for Engineering Education, San Antonio, Texas, June 2012.

[38] J. Khoury, C. T. Abdallah, J. Crichigno, *Incentivizing Cooperation in Sensor and Control Networks*, IEEE Multi-conference on Systems and Control, Denver, Colorado, September 2011.

[39] J. Crichigno, M. Y. Wu, S. K. Jayaweera, W. Shu, *Throughput Optimization in Multi-hop Wireless Networks with Multi-packet Reception and Directional Antennas*, IEEE Transactions on Parallel and Distributed Systems Journal, vol. 22, no. 7, pp. 1206-1213, July 2011.

[40] J. Crichigno, J. Khoury, W. Shu, M. Y. Wu, N. Ghani, *Dynamic Routing Optimization in WDM Networks*, IEEE Global Communications Conference (Globecom) 2010, Miami, Florida, December 2010.

[41] J. Crichigno, M. Y. Wu, W. Shu, *Throughput Optimization and Traffic Engineering in WDM Networks Considering Multiple Metrics*, IEEE International Communications Conference (ICC 2010), Cape Town, South Africa, May 2010.

[42] J. Crichigno, M. Y. Wu, W. Shu, *Minimum Length Scheduling in Single-hop Multiple Access Wireless Networks*, IEEE International Communications Conference (ICC 2010), Cape Town, South Africa, May 2010.

[43] J. Crichigno, M. Y. Wu, S. K. Jayaweera, W. Shu, *Maximizing Throughput in Wireless Multi-Access Channel Networks*, IEEE Wireless Communications and Networking Conference (WCNC 2010), Sydney, Australia, April 2010.

[44] J. Crichigno, C. Xie, W. Shu, M. Y. Wu. N. Ghani, *A Multi-Objective Approach for Joint Throughput and Traffic Engineering Optimization in Optical WDM Networks*, IEEE Asilomar 2009, California, November 2009.

[45] J. Crichigno, M. Y. Wu, W. Shu, *A Joint Routing and Scheduling Scheme for Wireless Networks with Multi-packet Reception and Directional Antennas*, IEEE 10^{th} International Symposium on a World of Wireless, Mobile and Multimedia Networks (WoWMoM 2009), Greece, June 2009.

[46] J. Crichigno, M. Y. Wu, W. Shu, *Throughput Optimization in Wireless Networks with Multi-packet Reception and Directional Antennas*, IEEE Wireless Communications and Networking Conference (WCNC) 2009, Budapest, Hungary, April 2009.

[47] J. Crichigno, J. Khoury, M. Y. Wu, W. Shu, *A Dynamic Programming Approach for Routing in Wireless Mesh Networks*, IEEE Global Communications Conference (Globecom) 2008, New Orleans, LA, USA, December 2008.

[48] J. Crichigno, M. Y. Wu, W. Shu, *Protocols and Architectures for Channel Assignment in Wireless Mesh Networks*, Ad Hoc Networks, Volume 6, Issue 7, September 2008.

[49] J. Khoury, L. DeCicco, H. Jerez, J. Crichigno, C. Abdallah, W. Shu, G. Heileman, *Design and Implementation of a Framework for Persistent Identification and Communication in Emerging Networks*, Proceedings of the 4^{th} International Conference on Testbeds and Research Infrastructures for the Development of Networks and Communities (Tridentcom 08), Innsbruck, Austria, March 2008.

[50] J. Khoury, J. Crichigno, C. T. Abdallah, W. Shu, G. Heileman, H. Jerez, *The InterMesh Network Architecture*, 13^{th} Annual International Conference on Mobile Computing and Networking (Mobicom 2007), Demo, Montreal, Canada, September 2007.

[51] J. Prieto, B. Baran, J. Crichigno, *Multitree-Multiobjective Multicast Routing for Traffic Engineering*, Artificial Intelligence in Theory and Practice: IFIP 19^{th} World Computer Congress, Santiago, Chile, August 2006.

[52] J. Crichigno, B. Baran, *Multiobjective Multicast Routing Algorithm for Traffic Engineering*, IEEE 13^{th} International Conference on Computer Communications and Networks, Chicago, IL, USA, October 2004.

[53] J. Crichigno, F. Talavera, J. Prieto, B. Baran, *Multicast Routing using Multiobjective Optimization*, 10^{th} Argentine Conference on Computer Sciences, Argentina, October 2004.

[54] F. Talavera, J. Prieto, J. Crichigno, B. Baran, *A Comparative Study of Multiobjective Evolutionary Algorithms in a Multicast Environment*, 10^{th} Argentine Conference on Computer Sciences, Argentina, October 2004.

[55] J. Crichigno, B. Baran, *Multiobjective Multicast Routing Algorithm*, IEEE 11^{th} International Conference on Telecommunications, Brazil, August 2004.

[56] J. Crichigno, B. Baran, *Multicast Routing Algorithm using Multiobjective Optimization*, IEEE 11^{th} International Conference on Telecommunications, Brazil, August 2004.

Other Panels, Workshops, and Professional Developments

- P4 Programmable Data Plane Switches Training, Barefoot Networks, Santa Clara, CA, Sep. 2018.
- P4 Programmable Switches Developer Day, Stanford University, Stanford, CA, June 2018.
- Cyberoperations Training, Coastline Community College, Garden Grove, June 18-22, 2018.
- Design and Operations of NETLAB Virtual Platform, Cabrillo College, Aptos, CA, June 11-15, 2018.
- Virtual Labs Design, Production, and Sharing on NETLAB+ Systems, Rocklin, California, June 27-July 1, 2016.
- Phyton for Computer Science and Information Technology, Anaheim, California, June 20-24, 2016.
- VMware NSX 6.2 Install, Configure and Manage Virtual Networks, New York City, New York, June 6-10 2016.
- Certified instructor, CCNA Routing and Switching, CCNP, and CCNA Security (NSA 4011 training standard).
- Operating Innovative Networks Workshop, Millersville, Pennsylvania, March 1-2 2016.
- NSF Campus Cyberinfrastructure / Science DMZ Workshop, Austin, Texas, September 29-30 2015.
- Siemens S7 1200 Programmable Logic Controller (PLC) certificate, Atlanta, Georgia, August 2015.
- 2012 Quality Matters Annual Conference on Quality Assurance in Online Learning, Tucson, AZ, October 2012.
- National Science Foundation Step Grantees Meeting 2012, Arlington, VA, March 2012.

Technical Skills

- Network operating systems: Internetwork Operating System (IOS), Unix, Linux, Windows.
- Network protocols: SIP, SDP, RTP, TCP, UDP, IP, ICMP, DSR, 802.11, Ethernet 802.3, Distributed Coordination Function (DCF).
- Industrial PLCs: Siemens S7 1200.
- Programming Languages: C, C++, Java, Assembler (Motorola 68HC11), UNIX shell scripting, VHDL, C for Xilinx Virtex-II PowerPC embedded processor, LabView (data acquisition).

- Simulation Tools: MatLab, Simulink, discrete-event simulators such as Network Simulator 2 (NS-2), ModelSim, OPNET, CNET.
- Hardware Design: VHDL, RTL hardware design, behavioral design. Xilinx development kits, Virtex-II Pro and Spartan-3E. Xilinx PowerPC embedded processor. Motorola 68HC11 microcontroller.

Languages

- English, Spanish.