Carlos E. Caicedo Bastidas, PhD.

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Syracuse University   ccaicedo@syr.edu
Syracuse, NY 13244-4100 USA

Education

University of Pittsburgh, Pittsburgh, PA   (August 2009)
- Doctor of Philosophy in Information Science: Telecommunications Program - School of Information Sciences
- Dissertation: *Technical Architectures and Economic Conditions for Viable Spectrum Trading Markets*

University of Texas at Austin   (May 2003)
- Master of Science in Engineering: Department of Electrical and Computer Engineering

Universidad de los Andes, Bogotá, Colombia   (March 1999)
- Master of Science in Electrical Engineering (emphasis on Telecommunications)
- Thesis title: *Study of Business Processes in Telecommunications Service Providers*

Universidad del Cauca, Popayán, Colombia   (February 1996)
- Bachelor of Engineering in Electronics and Telecommunications
- Thesis title: *Management and Planning of Services for the Data Network of the Universidad del Cauca*

Academic Appointments

Associate Professor
Syracuse University, School of Information Studies   (May/2015– current)
Director of the Center for Emerging Network Technologies (CENT)
Curriculum lead for the MS in Enterprise Data Systems degree program (since 2017)

Visiting Scientist
Wireless Information Network Laboratory (WINLAB) – Rutgers University   (January – June / 2019)

Assistant Professor
Syracuse University, School of Information Studies   (August / 2009 – May/2015)
Director of the Center for Convergence and Emerging Network Technologies (CCENT)

Visiting Assistant Professor (University Associate)   (August/2012 – June/2013)
University of Arizona, Electrical and Computer Engineering Department

Research Assistant
University of Pittsburgh, School of Information Sciences   (Summer 06&07, Fall 06-08, Spring 09)

- Planned, budgeted, configured and installed devices for the enhancement of the research capabilities in the areas of IPv6 network protocols, mobile IPv6 networks, intrusion detection, firewalls and grid computing of the Laboratory for Education and Research on Security Assured Information Systems (LERSAIS).
- Performed research on security of IPv6 networks and the development of authentication methods for mobile data environments.
- Designed laboratory exercises for the Introduction to Security and Security Management courses.

Graduate Teaching Assistant
University of Pittsburgh, Pittsburgh, School of Information Sciences   (2004 – Spring 06, Summer 08)
- Planned and designed the new Computer Network Laboratory of the Telecommunications program. Managed the acquisition and installation of all devices for the laboratory.
- Assisted professors in the grading and laboratory preparation tasks of computer networking courses of the Telecommunications Program curriculum.
- Managed the networking devices and stations of the Networking Laboratory.

Graduate Teaching Fellow
University of Pittsburgh, School of Information Sciences   (Spring 07)
- Taught the Introduction to Telecommunications and Networks course

University Instructor Professor
Universidad de los Andes, Department of Electronic and Electrical Engineering
                                                                 (08/1998 – 07/2001, 07/2003 - 12/2003)
- Prepared and taught courses in the fields of networking, communications and electrical circuits theory at the undergraduate and specialization level programs.
- Advised undergraduate and specialization level students completing their thesis work.
- Participated in the elaboration of research project proposals and the activities of the Telecommunications research group.
- Directed several undergraduate theses in Telecommunication topics.

Graduate Teaching Assistant
University of Texas at Austin, Department of Electrical and Computer Engineering   (08/2001 – 05/2003)
- Planned and coordinated projects and project teams for the Senior Lab course. Projects covered topics in networking, micro-controller based circuits and telecommunications (wireless, RF) systems.

Adjunct Professor
Universidad del Cauca, Popayán, Colombia   (02/1996 – 07/1996)
- Taught two courses in the area of telephone switching systems.

Teaching

Graduate courses:

Scripting for Enterprise Data Systems	2017 – 2019	Syracuse University, USA
Advanced Enterprise Network Management	2017 – 2019	Syracuse University, USA
Network Virtualization	2018	Syracuse University, USA
Telecom Final Project (Capstone course)	2017	Syracuse University, USA
Enterprise Network Management II	2011 - 2016	Syracuse University, USA

Applied Data Science	2014 - 2016	Syracuse University, USA
Mobile Application Development & Design	2010,2011,2013, 2015, 2016	Syracuse University, USA
Introduction to Information Security	2013	Syracuse University, USA
Information Policy	2012	Syracuse University, USA
Telecommunications and Information Network Technology	2010, 2011	Syracuse University, USA
Introduction to Telecommunications	2007	University of Pittsburgh, USA

Undergraduate courses:

Mobile Application Development & Design	2010, 2011, 2015	Syracuse University, USA
Security in Networked Environments	2010	Syracuse University, USA
Modeling and Analysis of Dynamic Systems	2003	Universidad de los Andes, Colombia
Fundamentals of (Electrical) Circuits	2000, 2003	Universidad de los Andes, Colombia
Computer Networks	1998,2000, 2001	Universidad de los Andes, Colombia
Analysis and Synthesis of (Electrical) Circuits	2000, 2001	Universidad de los Andes, Colombia
(Fundamentals of) Telecommunications	1999	Universidad de los Andes, Colombia
Telephone switching systems III	1996	Universidad del Cauca, Colombia

Specialization/Advanced study level courses:

Fundamentals of Computer Networks	2000, 2003	Universidad de los Andes, Colombia
Broadband Networks	2000, 2001	Universidad de los Andes, Colombia
Intranet Networks	1999-2001	Universidad de los Andes, Colombia

Grants & Sponsored Projects

Principal Investigator, SU and City of Syracuse Smart City Partnership, Empire State Development Grant, "Vacant Structure Monitoring and Inspection", $50,000, July 2020

Principal Investigator, Internal SU seed grant, "Performance Analysis of Dynamic Spectrum Access Interactions using Spectrum Consumption Models" , $4,998, May 2018

Co-Principal Investigator, Internal SU seed grant, "Development and Testing of the Smart Watch connected Sleep Experience and Assessment Application" , $5,000, May 2018

Co-Principal investigator, Corporate sponsored project – Topic area: Unmanned Air System Traffic Management, Fall 2017 – Spring 2018

Principal investigator, Grant by a corporate sponsor – Topic area: Network security, $20,133. Fall 2016 – Spring 2017

Co-Principal Investigator, Internal SU seed grant, "Development and Testing of the Sleep Experience and Assessment Application" , $11,250, December 2015

Google Faculty Award, "Enabling Spectrum Sharing via Spectrum Consumption Models", August, 2014

Principal investigator, Grant by a corporate sponsor – Topic area: Network survivability, $77,000. Spring 2011

Principal investigator on NSF SFS (Scholarship for Service) Grant, $1,565,172, for funding U.S. Citizens interested in studying cyber-security and information assurance. Grant period: 2010 – 2014.

Co-Principal investigator, Grant by a corporate sponsor – Topic area: Network security, $118,000. Fall 2010

Principal investigator, Internal Development grant, Syracuse University – School of Information Studies, *The Network Lab Virtualization Project*, approved budget: $150,000; 2010 – 2012.

Publications

a) Journal articles

[J.10] J.G. Torres, R. Bustamante, **C. Caicedo Bastidas**, "Characterizing the mobile coverage probability in different geometries", IEEE Latin America Transactions, Vol 17, Issue 8, 2019. DOI: 10.1109/TLA.2019.8932344

[J.9] M. Weiss, K. Werbach, D. Sicker and **C. Caicedo**, "On the Application of Blockchains to Spectrum Management", IEEE Transactions on Cognitive Communications and Networking, Vol 5, Issue 2, 2019, pg. 193-206. DOI: 10.1109/TCCN.2019.2914052

[J.8] **C. Caicedo**, J. Stine, A. Rennier, M. Sherman, A. Lackpour, M. Kokar, R. Schrage, "IEEE 1900.5.2: Standard Method for Modeling Spectrum Consumption – Introduction and Use Cases", IEEE Communications Standards Magazine, Vol 2, Issue 4, 2018.
DOI: 10.1109/MCOMSTD.2018.1700054

[J.7] **C. Caicedo**, A. Mohan, "Spectrum Consumption Model Builder: A Software Tool to Enhance Spectrum Sharing", Analog Integrated Circuits and Signal Processing, 2017.

[J.6] J. Stine, **C. Caicedo**, "Enabling Spectrum Sharing via Spectrum Consumption Models", IEEE Journal of Selected Areas in Communications (JSAC), Vol 33, No. 4, 2015
DOI: 10.1109/JSAC.2015.2393451

[J.5] T. Brooks, M. Kaarst-Brown, **C. Caicedo**, J. Park, L. McKnight, "Secure the Edge? Understanding the Risk towards Wireless Grids Edgeware Technology", International Journal of Internet Technology and Secured Transactions (IJITST), Vol. 3, No.3, 2014

[J.4] **C. Caicedo**, "Spectrum Trading: Market Based Architectures for Dynamic Radio Frequency Spectrum Access", Journal of Information Policy, Volume 3 (2013), pg. 485-500.

[J.3] T. Brooks, **C. Caicedo**, J. Park, "Security Vulnerability Analysis and Strategies for Trusted Virtualized Computing Environments", International Journal of Intelligent Computing Research (IJICR), Volume 3, Issues 1/2, 2012

[J.2] **C. Caicedo**, M. Weiss, "The Viability of Spectrum Trading Markets", IEEE Communications Magazine, March 2011

[J.1] **C. Caicedo**, J. Joshi, S. Tuladhar, "IPv6 Security Challenges," IEEE Computer Magazine, Vol 42, No. 2, pp. 36-42, Feb. 2009

b) Refereed conference papers and presentations

[C.36] Z. Zhao, C. Luo, A. Solomon, F. Basti, **C. Caicedo**, M. Gursoy, Q. Qiu, "Machine Learning-Based Traffic Management Model for UAS Instantaneous Density Prediction in an Urban Area", IEEE/AIAA 39th Digital Avionics Systems Conference (DASC), October 2020.

[C.35] Z.Chen, Z. Zhao, C. Luo, M. Gursoy, Q. Qiu, **C. Caicedo**, F. Basti, A. Solomon, "A Cost-Benefit Analysis to Achieve Command And Control (C2) Link Connectivity for Beyond Visual Line of Sight (BVLOS) Operations", IEEE/AIAA Integrated Communications Navigation and Surveillance (ICNS) Conference, September 2020.

[C.34] Z. Zhao, Z. Jin,,W. Bai, W. Bai, **C. Caicedo**, M. Gursoy, Q. Qiu, "Mission-Aware Spatio-Temporal Deep Learning Network for UAS Instantaneous Density Prediction", International Joint Conference on Neural Networks, July 2020

[C.33] R. Schrage, **C. Caicedo**, "The IEEE 1900.5.1 Standard: Policy Language for Dynamic Spectrum Access Systems", IEEE International Symposium on Dynamic Spectrum Access Networks (DySPAN 2019), Newark, NJ, USA, November 2019

[C.32] Z. Jin, Z. Zhao, C. Luo, F. Basti, A. Solomon, M. Gursoy, **C. Caicedo**, Q. Qiu, "Simulation of real-time routing for UAS Traffic Management with Communication and Airspace Safety Considerations", IEEE/AIAA 38th Digital Avionics Systems Conference (DASC), 2019.

[C.31] F. Basti, Z. Zhao, C. Luo, J. Zhao, Q. Qiu, M. Gursoy, **C. Caicedo**, "Temporal and Spatial Routing for Large Scale Safe and Connected UAS Traffic Management in Urban Area", 25th IEEE International Conference on Embedded and Real-Time Computing Systems and Applications (RTCSA2019), Hangzhou, China, August 2019

[C.30] F. Basti, Z. Zhao, C. Luo, J. Zhao, Q. Qiu, M. Gursoy, **C. Caicedo**, "A Simulation Framework for Fast Design Space Exploration of Unmanned Air System Traffic Management Policies", IEEE/AIAA Integrated Communications Navigation and Surveillance (ICNS) Conference, April 2019.

[C.29] M. Weiss, K. Werbach, D. Sicker, **C. Caicedo**, A. Maliki, "On the Application of Blockchains to Spectrum Management", Research Conference on Communications, Information and Internet Policy (TPRC), 2018

[C.28] **C. Caicedo**, "Spectrum Management Issues for the Operation of Commercial Services with UAVs", Research Conference on Communications, Information and Internet Policy (TPRC), 2017 Available at SSRN: https://ssrn.com/abstract=2944132

[C.27] **C. Caicedo**, A. Mohan, "Spectrum Consumption Model Builder: A Software Tool to Enhance Spectrum Sharing", Wireless Innovation Forum Conference on Wireless Communications Technologies and Software Defined Radio - WinnComm, 2016

[C.26] G. Vanhoy, H. Volos, M. Hirzallah, **C. Caicedo**, T. Bose, "On Reducing the Effects of Aliasing on Dynamically Estimated Radio Frequency Maps", SDR-WInnComm 2014

[C.25] J. Stine and **C. Caicedo Bastidas**, "Service Level Agreements with Spectrum Consumption Models", IEEE Symposium on Dynamic Spectrum Access Networks (DYSPAN 2014)

[C.24] G. Vanhoy, H. Volos, **C. Caicedo**, T. Bose, "A Spatial Interpolation Method for Radio Frequency Maps based on the Discrete Cosine Transform", IEEE Military Communications Conference – MILCOM, 2013

[C.23] T. Brooks, M. Kaarst-Brown, **C. Caicedo**, J. Park and L. McKnight, "A Failure to Communicate: Security Vulnerabilities in the GridStreamX Edgeware Wireless Grid Application", 8th International Conference for Internet Technology and Secured Transactions (ICITST), 2013

[C.22] **C. Caicedo**, J. Stine, "Spectrum Markets and Sharing Via Spectrum Consumption Models", Research Conference on Communication, Information and Internet Policy – TPRC, September, 2013

[C.21] **C. Caicedo**, G. Vanhoy, H. Volos, T. Bose, "An Initial Approach Towards Quality of Service Based Spectrum Trading", IEEE Aerospace Conference, Big Sky, MT, 2013

[C.20] T. Brooks, **C. Caicedo**, J. Park, "Security Challenges and Countermeasures for Trusted Virtualized Computing Environments", World Congress on Internet Security-WorldCIS, Canada, 2012

[C.19] A. Nagesh, **C. Caicedo**, "Cross-platform Mobile Application Development", ITERA 2012 Conference, Indianapolis, IN 2012

[C.18] **C. Caicedo**, "Enabling Remote Access to Computer Networking Laboratories for Distance Education", 41st IEEE Frontiers in Education Conference, Rapid City, SD, October, 2011

[C.17] E. Gozen, **C. Caicedo**, "Using Smartphone Applications to Enhance the Learning of Telecommunication Concepts", ITERA 2011 conference, Indianapolis, IN, 2011

[C.16] **C. Caicedo**, M. Weiss, "The Viability of Spectrum Trading markets", IEEE Symposium on Dynamic Spectrum Access Networks (DYSPAN 2010), Singapore, April, 2010

[C.15] S. Disston, **C. Caicedo**, "Approaches to the Design of Computer Networking Laboratories", ITERA 2010 conference, Nashville, TN, 2010

[C.14] **C. Caicedo**, W. Cerroni, "Design of a Computer Networking Laboratory for Efficient Manage-ability and Effective Teaching", 39th IEEE Frontiers in Education Conference, San Antonio, TX, October, 2009

[C.13] **C. Caicedo**, M. Weiss, "On the Viability of Spectrum Trading markets", 37th Research Conference on Communications, Information and Internet Policy - TPRC 2009, Arlington, VA, 2009.

[C.12] **C. Caicedo**, M. Weiss, "An Analysis of Market Structures and Implementation Architectures for Spectrum Trading Markets", 36th Research Conference on Communications, Information and Internet Policy –TPRC 2008, Arlington, VA, 2008.

[C.11] S. Tuladhar, **C. Caicedo**, J. Joshi, "Inter-Domain Authentication for Seamless Roaming in Heterogeneous Wireless Networks", IEEE International Conference on Sensor Networks, Ubiquitous, and Trustworthy Computing (SUTC 2008), Taichung, Taiwan, 2008

[C.10] **C. Caicedo**, J. Joshi, "Security Issues in IPv6 Networks", Proceedings of the ITERA 2008 Conference, Louisville, Kentucky, 2008

[C.9] **C. Caicedo** and R. Thompson, "Core Competencies for Graduate Telecomm Programs Curricula, Part II", Proceedings of the ITERA 2008 Conference, Louisville, Kentucky, 2008

[C.8] **C. Caicedo**, M. Weiss, "A Spectrum Trading Architecture for WiMAX", 35th Research Conference on Communications, Information and Internet Policy-TPRC 2007, Arlington, VA, 2007.

[C.7] **C. Caicedo**, M. Weiss, "Spectrum Trading: An Analysis of Implementation Issues", Proceedings of the IEEE Symposium on Dynamic Spectrum Access Networks (DYSPAN 2007), Dublin, Ireland, 2007

[C.6] **C. Caicedo**, "Software Defined Radio and Software Radio Technology: Concepts and Applications", Proceedings of the ITERA 2007 Conference, March 2007

[C.5] **C. Caicedo** and R. Thompson, "Core Competencies for Graduate Telecomm Programs Curricula", Proceedings of the ITERA 2007 Conference, March 2007

[C.4] L. Wilches-Chaux, **C. Caicedo**, "Experiences in the development of a prototype system for the exchange of management information. Study case: Colombia", LANOMS 99 (Latin American Network Operations and Management Symposium), Brazil, December 1999

[C.3] L. Wilches-Chaux, **C. Caicedo**, "A prototype system for the exchange of management information between service providers in Colombia", TeleManagement World Conference Proceedings, Hamburg – Germany, April 1999

[C.2] **C. Caicedo**, M. E. Avila, J. León, "Modulación de un haz láser (Modulation of a laser beam)". Proceedings of the XV Colombian National Congress in Physics, 1993

[C.1] J. León Tellez, C. Torres, C. Leonardo M, **C. Caicedo**, "Transmisión de Señal de Audio con Portadora Láser de Helio-Neón (Transmission of an audio signal with a He-Ne laser carrier)". Primer Encuentro Iberoamericano de Optica Barcelona (First Ibero-american congress in Optics) , Spain, 1992

c) Refereed short papers with posters

[S.2] F. Espinoza, **C. Caicedo**, "A Survey of Social Media Sites for Academics", presented at the 2015 iConference, March, 2015

[S.1]   **C. Caicedo**, A. Aksu, W. Cerroni, (Poster) "A Cooperative Approach to Lab-Based, Multi-Team Courses in an iSchool", iConference 2009, University of North Carolina at Chapel Hill, February 8-11, 2009.

d) Poster presentations

[P.7]   L. A. Gellis, J. Chang, P. A. Goodhines, **C. E. Caicedo Bastidas**, S. Rajagopala, A. Park, "Testing a novel smartphone application to evaluate pre-sleep experiences and sleep patterns: Feasibility and analysis of pre-sleep thought content". 33rd annual meeting of the American Professional Sleep Societies (SLEEP), San Antonio, TX, June 2019.

[P.6]   P. A. Goodhines, **C. E. Caicedo Bastidas**, S. Rajagopala, A. Park, K. L. Lichstein, and L. A. Gellis "Real-time monitoring of sleep-wake status and thought content: Associations with insomnia symptom reduction". 33rd annual meeting of the American Professional Sleep Societies (SLEEP), San Antonio, TX, June 2019.

[P.5]   **C. Caicedo Bastidas**, J. Stine, A. Rennier, M. Sherman, A. Lackpour, M. Kokar, R. Schrage, "A Standard Method for Modelling Spectrum Consumption", IEEE International Symposium on Dynamic Spectrum Access Networks (DySPAN), March, 2017

[P.4]   F. Chew, Z. Cheng, W. Grant, **C. Caicedo**, "Developing a New Scale to Measure E-Health Literacy", Medicine 2.0 - World Congress on Social Media, Mobile Apps, and Internet/Web 2.0 in Health, Medicine and Biomedical Research, November, 2014.

[P.3]   **C. Caicedo**, J. Stine, "Standards for Policy-based Dynamic Spectrum Management", Telecommunications Policy Research Conference (TPRC), September, 2014

[P.2]   G. Vanhoy, H. Volos, **C. Caicedo**, T. Bose, "On the Sampling Requirements of Dynamic Frequency Mapping", BWAC IAB Meeting, April, 2013

[P.1]   G. Vanhoy, **C. Caicedo**, H. Volos, T. Bose, "An Open Source Implementation of a Spectrum Exchange", WICAT (Wireless Internet Center for Advanced Technology) IAB Meeting, November, 2012

e) Conference Proceedings – Editor:
[CEd. 1] A. Kliks, P. Kryszkiewicz, C. F. Bader, D. Triantafyllopoulou, **C.E. Caicedo**, S. Aydin, N. Dimitriou, M. Sybis, M. (Editors), "Cognitive Radio-Oriented Wireless Networks", Proceedings of the 14th EAI International Conference on Cognitive Radio-Oriented Wireless Networks (CrownCom 2019).

f) Other publications

[O.9]   **C. Caicedo Bastidas**, "Big data and the changing role of the IT professional", Opinion piece, Information Management Magazine, June 2017, https://www.information-management.com/opinion/big-data-and-the-changing-role-of-the-it-professional

[O.8]   A. Nagesh, K. Khandelwal, **C. Caicedo**, "Accessing External Databases from Mobile Applications, version 2.0", Technical Report, Center for Convergence and Emerging Network Technologies (CCENT), Syracuse University, 2014, Available at: http://ccent.syr.edu/publications/

[O.7]   J. Bejar and **C. Caicedo**, "IPv6 Security Analysis", May 2014, Technical Report T.R. 2014-002, Center for Convergence and Emerging Network Technologies (CCENT), Syracuse University, 2014, Available at: http://ccent.syr.edu/publications/

[O.6]   A. Rawal, S. Gopal, R. Kamat, J. Bejar and **C. Caicedo**, "Study of IPv6 Security Vulnerabilities v2.0", March 2014, Technical Report T.R. 2014-001, Center for Convergence and Emerging Network Technologies (CCENT), Syracuse University, 2014, Available at: http://ccent.syr.edu/publications/

[O.5]   A. Nagesh, **C. Caicedo**, "Accessing External Databases from Mobile Applications", Technical Report, Center for Convergence and Emerging Network Technologies (CCENT), Syracuse University, 2012, Available at: http://ccent.syr.edu/publications/

[O.4]   **C. Caicedo**, M. Weiss, "Characterization and Modeling of Spectrum Trading Markets", 2009, Available at: http://d-scholarship.pitt.edu/2826/

[O.3]   S. Zargar, M. Weiss, **C. Caicedo**, J. Joshi, "Security in Dynamic Spectrum Access Systems: A Survey", 2009, Available at: http://d-scholarship.pitt.edu/2823/

[O.2]   M. Potes, L. Wilches-Chaux, **C. Caicedo**, et.al. (Technical Report - Spanish) "Specification, Design, Development and Implementation of a Prototype System for the Exchange of Management Information between Network and Services Operators in Colombia", Centre for Telecommunications Research (CINTEL), Colombia, March 2000

[O.1]   **C. Caicedo**, M. Anzola, L. Wilches-Chaux. "El Modelo de Procesos de Negocio del Network Management Forum para la Gestión Integrada de Empresas de Telecomunicaciones (The Business Process Model of the Network Management Forum for the Integrated Management of Telecommunication Service Providers)". Revista Colombiana de Telecomunicaciones (Colombian Telecommunications Magazine), July 1998

Invited Talk Presentations

[IT.15] C. Caicedo, "The Evolution of Network Management and Automation", NYSERNet Conference, Syracuse, NY, October 2019

[IT.14] C. Caicedo, "Technical standards and regulatory trends for future RF spectrum sharing environments", Wireless Information Network Laboratory (WINLAB), Rutgers University, November, 2018.

[IT.13] J. Stine, C. Caicedo, "The IEEE 1900.5.2 Standard for Modeling Spectrum Consumption", presented at the Wireless Innovation Forum's Summit on Wireless Communications Technologies (WinnComm), November, 2018

[IT.12] C. Caicedo, "Panel: Dynamic Spectrum Resource Sharing Technology Alternatives", hosted by the Columbia University Business School, April 2017

[IT.11] C. Caicedo, "Spectrum Management: Trends and Standards" (Gestion de Espectro: Tendencias y Estandares), hosted by IEEE-Colombia section and the Ministry of Information and Communication Technologies of Colombia, Bogota, Colombia, June/2016

[IT.10] C. Caicedo, "Standards and Trends for future RF Spectrum Sharing Environments", Electrical and Computer Engineering Department, University of Arizona, Tucson, AZ, April/2016

[IT.9] C. Caicedo, "The Spectrum Consumption Model Builder and Analysis Tool", IEEE DySPAN-SC 1900.5 Working Group meeting, Melbourne, FL, January/2016,

[IT.8] C. Caicedo, "Standards and Trends for future RF Spectrum Sharing Environments", hosted by the Pittsburgh chapter of the IEEE, Pittsburgh, PA – November / 2015

[IT.7] C. Caicedo, "Tutorial: Trends in Modern RF Spectrum Management", 6th IEEE Latin-American Conference on Communications (IEEE LatinCom), November, 2014

[IT.6] C. Caicedo, "Future standards and mechanisms for RF Spectrum Management", School of Information Sciences, Syracuse University, October, 2014

[IT.5] C. Caicedo, "Métodos para la Gestión del Espectro Radioeléctrico: Evolución y Perspectivas (Spectrum Management Methods: Evolution and Perspectives", Electronics Engineering Department, Nariño University, Pasto, Nariño, Colombia, August 2014.

[IT.4] C. Caicedo, "Market Based Architectures for Broadband Spectrum Access", Workshop on Theory of Broadband-Regulation, Networks and Applications, Columbia University, New York, May 2013.

[IT.3] C. Caicedo, "Dynamic Spectrum Assignment via Spectrum Markets (Techno-Economic Analysis and Modeling), 2012 Symposium & Summer School on Wireless Communication, Virginia Tech, May 2012.

[IT.2] C. Caicedo, "Spectrum Markets: Enhancing the Management of Spectrum for Future Wireless Services", Virginia Tech, March 2011.

[IT.1] C. Caicedo, "Security Issues in Modern Networking Technologies", at U.S. Army – Cyber Leader College (formerly: School of Information Technology), Fort Gordon, GA, March 2010

Media appearances

[MA.1] C. Caicedo, Interview on "theCube", Interviewer: Stuart Miniman, September 2019. URL: https://www.thecube.net/ansiblefest-2019/content/Videos/crhMy2mocQ9irKriQ

Software

[S.3] SCMBAT – The Spectrum Consumption Model Builder and Analysis Tool. Release v1.0, 2016. Current version: 1.2 released in May/2018. Open source code available at https://github.com/ccaicedo/SCMBAT

[S.2] SPECTRAD: Spectrum Trading Modeling Tool, v1 (2009 - Pittsburgh), v2 (current - Syracuse).

[S.1] PIIGORS: Prototype system for the exchange of management information between telecommunication service providers. Software Development Manager and Designer. CINTEL, Colombia, 1999.

Professional Work Experience

Telecommunications Consultant
Centre for Telecommunications Research – CINTEL, Bogota, Colombia   (06/1997 – 03/2000)
- Provided expert input on telecommunications network management topics and on the elaboration of recommendations for the development of telecommunication services and use of new technologies to Colombian telecommunication service providers, private and government entities.

Software Development Leader
CINTEL (Centre for Telecommunications Research – Colombia)   (1999)
- In charge of software development for the R&D project: *"Exchange of Management Information between Service Providers in Colombia"*.
- Consultant on information technology for telecommunication network management topics.

Computer Networking Consultant
ALFAN S.A, Bogotá, Colombia   (09/1996 – 09/1997)
- Planned and designed the data network for this packing materials and package design company.
- Supervised the installation of the networking cabling and equipment and provided general maintenance of the networking equipment.

University Network Administrator
Universidad del Cauca, Popayán, Colombia   (06/1994 – 06/1996)
- Administered the services and infrastructure of the university data network.
- Elaborated and executed plans for the expansion of cabling infrastructure and services.

Service, Professional Development and Awards

Service
- Member of the IEEE Dynamic Spectrum Access Networks Standardization Committee (DySPAN-SC) 1900.5 standard Working Group on Policy Language and Policy Architecture for Managing Cognitive Radio for Dynamic Spectrum Access Applications, since 2012
    - Interim Secretary for the 1900.5 WG for 2015
    - Elected Secretary for the 1900.5 WG since 2016
    - Contributor to the development of the IEEE 1900.5.2 Standard for Method for Modeling Spectrum Consumption
- Workshop Chair for the IEEE Symposium on Dynamic Spectrum Access Systems (DySPAN), 2019
- Member of the IEEE (Institute of Electrical and Electronics Engineers) Standards Association since 2013

- Co-chair of the Technical Program Committee (TPC) for the International Conference on Cognitive Radio Oriented Wireless Networks (CROWNCOM), 2019
- Member of the Technical Program Committee (TPC) for:
  - Research Conference on Communications, Information and Internet Policy (TPRC): 2016, 2017
  - International Conference on Cognitive Radio Oriented Wireless Networks (CROWNCOM), 2016, 2017
  - IEEE Symposium on Dynamic Spectrum Access Networks (DYSPAN), 2015, 2014
  - IEEE International Workshop on Cognitive Cellular Systems (IEEE CCS 2014)
  - International Telecommunications Union (ITU)-Kaleidoscope Conference 2014 - 2018
  - IEEE Frontiers in Education (FIE) Conference 2013.
- NSF Proposal Review Panel Member 2011, 2013, 2017, 2018.
- Provided input as an Expert in Computer Network Architecture to the U.S. Department of Labor's National Occupation Information Network (O*NET) Data Collection Program, 2017
- Journal paper reviewer - Participated in the peer review process for papers submitted to:
  - IEEE Vehicular Technologies, 2018
  - IEEE Transactions on Cognitive Communications and Networking, 2019
  - IEEE Transactions on Service Computing, 2019
  - IEEE Transactions on Learning Technologies, 2015, 2019
  - IEEE Journal of Selected Areas in Communications, 2014
  - IEEE Communications Magazine in 2012, 2013, 2018, 2019
  - PLOS ONE, 2016, 2019
  - Journal of Information Policy, 2015
  - Journal of Systems and Software, 2014
  - Transactions on Mobile Computing, 2014
  - Simulation Modelling Practice and Theory, 2014
  - Journal of Telecommunications Policy, 2012
- Conference paper reviewer for the following conferences:
  - IEEE Frontiers in Education Conference 2010, 2012, 2014 - 2017
  - International Symposium on Resilient Communication Systems (ISRCS 2013),
  - iConference (2010),
  - IEEE International Symposium on Computers and Communications (ISCC) in 2009
  - IEEE International Conference on High Performance Switching and Routing (2006)
- Member of the "student ambassador" program of the Office of International Services (OIS), Fall 2008, University of Pittsburgh
- Co-president of the "Colombia en Pittsburgh" non-profit cultural organization during 2007. Member of the organization from 2004-2009
- Member of the TPC for the Latin America Network Management Symposium, LANOMS, 2000

Awards and Honors
- IEEE Senior Member, 2017
- Student travel award – NSF - 2007
- Andres Bello Medal 1990 – Colombian Education Ministry: Award to the top scores in the Colombian SAT.

Languages
- Bilingual: Spanish, English.
- Basic knowledge of written and spoken German.

Continuing Education
- OPNET Essentials Training course, Pittsburgh, PA, July 2005
- Unified Modeling Language (UML) Training, Bogota, Colombia, September 2000

Professional Society Affiliations
- Member of the Institute of Electrical and Electronics Engineers (IEEE) since 1992, affiliated to the Communications, Education and Computer societies
  - IEEE Senior Member status obtained in 2017
- Member of the Association for Computing Machinery (ACM) since 1998, member of the Special Interest Group on Data Communications (SIGCOMM) since 2012.