

Raouf BOUTABA

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EDUCATION

Ph.D., Computer Science and Engineering, University Pierre & Marie Curie (France), March 1994

M.Sc., Computer Science and Engineering, University Pierre & Marie Curie (France), December 1990

B.Sc., Computer Engineering, University Badji Mokhtar of Annaba (Algeria), July 1988

ACADEMIC EXPERIENCE

Canada Research Chair Tier 1	2025 – present	David Cheriton School of Computer Science	University of Waterloo
University Professor	2024 – present	David Cheriton School of Computer Science	University of Waterloo
Director	2020 – present	David Cheriton School of Computer Science	University of Waterloo
Associate Dean Innovation & Entrepreneurship	2019 – 2020	Faculty of Mathematics	University of Waterloo
Associate Dean Research	2016 – 2019	Faculty of Mathematics	University of Waterloo
Professor	2007 – present	David Cheriton School of Computer Science	University of Waterloo
Visiting Professor	2014 – 2017	GTA – Science without Borders Program	UFRJ (Brazil)
Distinguished Visiting Prof.	2009 – 2013	Division of ITCE -WCU Program	POSTECH (S. Korea)
Associate Professor	2002 – 2007	David Cheriton School of Computer Science	University of Waterloo
Visiting Professor	2006 – 2007	Telecom ParisTech	Paris Institute of Tech.
Assistant Professor	1999 – 2002	David Cheriton School of Computer Science	University of Waterloo
Visiting Assist. Prof.	1998 – 1999	Dept. of Electrical and Computer Engineering	University of Toronto
Adjunct Professor	1995 – 2002	Department of Computer Science	University of Montreal

INDUSTRIAL OR NON-ACADEMIC EXPERIENCE

Inaugural Rogers Research Chair	2024-2029	David Cheriton School of Computer Science	University of Waterloo
INRIA International Chair	2017-2022	INRIA, Nancy (France)	
Visiting Scientist	Summer 2014	INRIA, Nancy (France)	
Director and Lead Researcher	1995 – 1997	Telecommunications & Distributed Systems Division, Computer Science Research Institute of Montreal	

FELLOWSHIP

- **2019 Fellow of the Royal Society of Canada (FRSC)** “for pioneering contributions to automated management, which directly led to the trend toward autonomic networking, and groundbreaking work on network virtualization and network softwarization expected to revolutionize the way communication networks are designed, operated and managed.” Fellowship of the Royal Society of Canada is an award granted to individuals that the Royal Society of Canada judges to have "made remarkable contributions in the arts, the humanities and the sciences, as well as in Canadian public life"
- **2015 Fellow of the Canadian Academy of Engineering (FCAE)** “for pioneering contributions to automated and policy-based network management, which opened new exciting possibilities toward self-managing networks and autonomic computing, and ground breaking work on network virtualization as a foundation for the future Internet architecture.” Election to the CAE is one of the highest professional honours accorded to an engineer. Fellows of the CAE are nominated and elected by their peers (current CAE Fellows) to honorary fellowship in the Academy in view of their distinguished achievements and career-long service to the engineering profession.
- **2013 Fellow of the Engineering Institute of Canada (FIEC)** “for remarkable contribution to the management of communication networks and services”. The Engineering Institute of Canada (EIC) has, since 1963, elected annually

to the grade of Fellow a number (up to 20) of engineers in recognition of their excellence in engineering and their services to the profession and to society.

- **2012 Fellow of the Institute of Electrical and Electronics Engineers (FIEEE)** “for contributions to network management methodologies and applications”. The IEEE Grade of Fellow is conferred by the Board of Directors upon a person with an extraordinary record of accomplishments in any of the IEEE fields of interest. The total number selected in any one year does not exceed one-tenth of one percent of the total voting Institute membership.

AWARDS AND HONORS

International Awards/Honors

- 2018. **Invited Professor** (1 month), **University Paris Est Marne-la-Vallée (UPEM)**.
- 2018. **Invited Professor *Initiative d'Excellence*** (3 months), University of Bordeaux.
- 2017 – 2022. **INRIA International Chair**. A program of the French National Institute for computer science and applied mathematics (INRIA) “to support research visits covering 12 months spread over 5 years by eminent international researchers in areas relevant to INRIA”.
- 2017 – 2021. **Visiting Professor, *Lorraine Université d'Excellence***. A program to host very high caliber researchers as part of the Professor@Lorraine of the "*Lorraine Université d'Excellence*".
- 2016. **Technical Achievement Award**. IEEE Communications Society Technical Committee on Information Infrastructure and Networking. The IEEE Communications Society presents this Technical Achievement Award to a recipient that is deemed to have made an incredible contribution in the field of data communication infrastructure and network management.
- 2016. **Donald W. McLellan Meritorious Service Award**. First presented in 1976; named in 1979, the Donald W. McLellan award is presented to a recipient who demonstrates an outstanding long-term service to the welfare of the Communications Society. Citation: “For dedicated and outstanding long-term service to the IEEE Communication Society and his high-quality contributions to and his leadership in conferences, publications, standards and technical activities.”
- 2014 – 2017. **Visiting Professor, University Federal do Rio de Janeiro (UFRJ)**. Rio De Janeiro, Brazil. Funded by the Brazilian Government (National Council for Technological and Scientific Development - CNPq) under the “*Science without Border*” program.
- 2013. **IBM Faculty Award**. “The IBM Faculty Award is a competitive worldwide program intended to foster collaboration between researchers at leading universities worldwide and those in IBM research, development and services organizations. To qualify for this internationally competitive award, the nominee must have an outstanding reputation for contributions in his field”.
- 2012. **Salah Aidarous Award** “presented to an individual who has provided unremitting service and dedication to the IT and Telecommunications Network Operations and Management community”. This is the highest recognition for service contributions in the area of network management -- awarded by peers once every two years.
- 2008. **Invited Professor** (1 month), **University Pierre & Marie Curie (Now Sorbonne University)**.
- 2011. **Google Faculty Research Award**. "Unrestricted gifts to universities to support the work of world-class full-time faculty members at top universities around the world”.
- 2009 – 2013. **Distinguished Visiting Professor, Pohang University of Science and Technology (POSTECH)**, South Korea – Korean Government funded World Class University Program targeted to “top foreign scholars” including Nobel Prize Winners.
- 2008. **Invited Professor** (1 month), **University Paris Descartes (Now University of Paris Cité)**.
- 2008. **Invited Professor** (1 month), **University Paris 13 - Villetaneuse**.
- 2005-2010. **Distinguished Lecturer of the IEEE Communications Society**.
- 2009. **IEEE Communications Society Joseph LoCicero Publications Award**, “for outstanding service as founding Editor-in- Chief of the IEEE Transactions on Network & Service Management.”

- 2009. **Dan Stokesberry Award** “presented to an individual who has made a particularly distinguished technical contribution to the growth of the network management field”. This is the highest recognition for technical contributions in the area of network management -- awarded by peers once every two years.
- 2007. **IEEE Communications Society Harold Sobol Award**, for Exemplary Service to Meetings and Conferences. Citation: "For envisioning and implementing a converged strategy for the Society's network operations and management events that significantly increased their value to the industry and academic community in this field."
- 2007. **IFIP Silver Core** for Outstanding Service to the International Federation for Information Processing.
- 2006 – 2007. **Invited Professor, Telecom ParisTech (Paris Institute of Technology)**. Paris, France.
- 2005. **NORTEL Networks Award for Leadership Excellence in Technology Transfer**, October 2005
- 2002-2004. **Distinguished speaker of the IEEE Computer Society**.
- 2004. **NORTEL Networks Research Excellence Award**, December 2004.
- Listed in Who’s Who in the World 13th edition (1997) and Who’s Who in Science and Engineering 4th edition (1996).

National Awards/Honors

- **2025-2032 Canada Research Chair in Network Intelligence**
- **2024-2029 Inaugural Rogers Chair in Network Automation**
- **2023 Outstanding Achievements Award in Communications** "for remarkable and sustained contributions to algorithms, architectures, and management systems in communication networks and the Internet". Inaugural award of the IEEE Kitchener-Waterloo Section.
- **2014 McNaughton Gold Medal**. Established in 1969, the McNaughton Gold Medal is IEEE Canada’s highest honor and is awarded to outstanding Canadian engineers recognized for their exemplary contributions to the engineering profession. Only one medal is awarded each year, across all disciplines included in the IEEE.
- **2009 NSERC Discovery Accelerator Award** “awarded to 3% top researchers in science and engineering”.
- **2000 Premier’s Research Excellence Award**, Ontario, Canada, December 2000.
- **1996. Member of Team Canada**. Industry Canada mission to Japan invited by the Nippon Telephone and Telegraph (NTT)
- **High Education and Research Minister’s Prize for Best Graduating Computer Engineer in 1988**, Algeria.

University Awards

- **2024 – . University Professor** for “exceptional scholarly achievement and international pre-eminence”. At most two appointments are made each year with one University Professor for approximately every 60 full-time regular faculty members.
- **2024 Outstanding Performance Award** “to reward faculty members for outstanding achievements in teaching and scholarship.” University of Waterloo.
- **2024 Award of Excellence in Graduate Supervision** “to recognize exemplary faculty members who have demonstrated excellence in graduate student supervision, through being a mentor, advisor, role model, humanist and a strategist who exemplifies a high level of energy and ingenuity.” University of Waterloo.
- **2021 Outstanding Performance Award** “to reward faculty members for outstanding achievements in teaching and scholarship.” University of Waterloo.
- **2018 – 2025 University Research Chair** “to recognize exceptional achievement and pre-eminence in a particular field of knowledge.” University of Waterloo.
- **2017 Outstanding Performance Award** “to reward faculty members for outstanding achievements in teaching and scholarship.” University of Waterloo.
- **2014 Outstanding Performance Award** “to reward faculty members for outstanding achievements in teaching and scholarship.” University of Waterloo.
- **2012 – 2014. David R. Cheriton Faculty Fellow - University of Waterloo** “to recognize a faculty member whose scholarly work is widely known and respected internationally, who is an accomplished teacher at all levels, and who

has displayed a high level of commitment and dedication to her/his department, the Faculty and the University.”

- **2011 Outstanding Performance Award** “to reward faculty members for outstanding achievements in teaching and scholarship.” University of Waterloo.
- **2007 – 2009. David R. Cheriton Faculty Fellow - University of Waterloo** “to recognize a faculty member whose scholarly work is widely known and respected internationally, who is an accomplished teacher at all levels, and who has displayed a high level of commitment and dedication to her/his department, the Faculty and the University.”
- **2008 Outstanding Performance Award** “to reward faculty members for outstanding achievements in teaching and scholarship.” University of Waterloo.
- **2003 – 2005. Faculty of Mathematics Fellow - University of Waterloo** “to recognize a faculty member whose scholarly work is widely known and respected internationally, who is an accomplished teacher at all levels, and who has displayed a high level of commitment and dedication to her/his department, the Faculty and the University.”

Dissertation Awards received by Supervised PhD Students

- **Shihab Chowdhury: Best Dissertation Award 2022**, IEEE/IFIP International Network Operations and Management Symposium (NOMS), Budapest, Hungary, April 25 – 29, 2022. For Dissertation Digest titled "Resource Management in Softwarized Networks", by S. Chowdhury and R. Boutaba.
- **Shihab Chowdhury: Alumni Gold Medal 2021**. University of Waterloo (Fall 2021 convocation): “Only one medal, university-wide, for outstanding academic performance on completion of a PhD program may be awarded every year”.
- **Nashid Shahriar: Best Dissertation Award 2021**, IFIP/IEEE Integrated Network Management Symposium (IM), Bordeaux, France, May 17-21, 2021. For Dissertation Digest titled "Survivable Virtual Network Embedding", by N. Shahriar and R. Boutaba.
- **Nashid Shahriar: Mathematics Doctoral Prize 2021**, “conferred annually to recognize the achievements of top graduating and graduated doctoral students in the Faculty of Mathematics”.
- **Nashid Shahriar: Alumni Gold Medal 2020**. University of Waterloo (Fall 2020 convocation): “Only one medal, university-wide, for outstanding academic performance on completion of a PhD program may be awarded every year”.
- **Faizul Bari: David R. Cheriton Inaugural Doctoral Dissertation Award 2020**. This award was established in 2019 “to recognize excellence in computer science doctoral research and writing”.
- **Qi Zhang: Best Dissertation Award 2014**, IEEE/IFIP Network Operations and Management Symposium (NOMS), Krakow, Poland, May 5-9, 2014. For Dissertation Digest titled "Dynamic Workload Management in Heterogeneous Cloud Computing Environments", by Q. Zhang and R. Boutaba.
- **Carol Fung: Best Dissertation Award 2013**, IFIP/IEEE Integrated Network Management Symposium (IM), Ghent, Belgium, May 27-31, 2013. For Dissertation Digest titled "Design and Management of Collaborative Intrusion Detection Networks", by C. Fung and R. Boutaba.
- **Carol Fung: Alumni Gold Medal 2013**. University of Waterloo (Fall 2013 convocation): “Only one medal, university-wide, for outstanding academic performance on completion of a PhD program may be awarded every year”.

Best Paper Awards/Nominations

- **2025. Best Paper Award of the IEEE Communications Society Technical Committee on Network Operations and Management (CNOM)**. For paper: M. Sulaiman, M. Ahmadi, M. Salahuddin, R. Boutaba, A. Saleh. Generalizable Resource Scaling of 5G Slices using Constrained Reinforcement Learning. IEEE/IFIP Symposium on Network Operations and Management. Miami, FL, USA, May 2023.
- **2024. Test of Time Paper Award**. IEEE Technical Committee on Network Operations and Management (CNOM) for the paper Dynamic Controller Provisioning in Software Defined Networks presented at IEEE CNSM 2013.
- **2023. Runner Up for Best Paper Award**. IEEE/ACM/IFIP International Conference on Network and Service Management (CNSM), Niagara, Canada, October 30 – November 2, 2023.
- **2023. Best Paper Award**. IEEE/IFIP International Network Operations and Management Symposium (NOMS), Miami, Florida, USA, May 8 – 12, 2023

- 2022. **Best Poster Award.** IFIP Network Traffic Measurement and Analysis Conference (TMA), Enschede, The Netherlands, June 27-28, 2022.
- 2022. **Best Paper Award.** IEEE/IFIP International Network Operations and Management Symposium (NOMS), Budapest, Hungary, April 25 – 29, 2022.
- 2022. **Best Student Paper Award.** IEEE/IFIP International Network Operations and Management Symposium (NOMS), Budapest, Hungary, April 25 – 29, 2022.
- 2021. **Kenneth C. Sevcik Outstanding Student Paper Award.** ACM SIGMETRICS, Beijing, China, June 14–18, 2021.
- 2021. **Best Paper Award of the IEEE Communications Society Technical Committee on Network Operations and Management (CNOM).** For paper: A. Abou Daya, M. Salahuddin, N. Limam, R. Boutaba. BotChase: Graph-based Bot Detection using Machine Learning. IEEE Transactions on Network and Service Management - Special Issue on Cybersecurity Techniques for Managing Networked Systems. IEEE Press, Vol. 17(1), pp. 15-29, March 2020.
- 2019. **Best Paper Award.** IEEE/ACM/IFIP International Conference on Network and Service Management (CNSM), Halifax, Canada, October 21 – 25, 2019.
- 2019. **Best Paper Award.** IEEE International Conference on Network Softwarization (NetSoft), Paris, France, June 24 – 28, 2019.
- 2019. **Best Student Paper Award.** IEEE International Conference on Network Softwarization (NetSoft), Paris, France, June 24 – 28, 2019.
- 2018. **Best Student Paper Award.** IEEE International Conference on Blockchain (Blockchain), Halifax, Canada, April 20 – August 3, 2018.
- 2017. **Best Paper Award.** IEEE/ACM/IFIP International Conference on Network and Service Management (CNSM), Tokyo, Japan, November 26 – 30, 2017.
- 2016. **Runner Up for Best Paper Award.** IEEE/ACM/IFIP International Conference on Network and Service Management (CNSM), Montreal, Canada, October 31 – November 4, 2016.
- 2016. **Runner Up for Best Paper Award.** IEEE/IFIP International Symposium on Network Operations and Management (NOMS), Istanbul, Turkey, April 25-19, 2016.
- 2015. **Runner Up for the IEEE Communications Society William R. Bennett Prize – IEEE Transactions on Network and Service Management (TNSM) Best Paper Award.**
- 2015. **Runner Up for Best Paper Award.** IEEE/ACM/IFIP International Conference on Network and Service Management (CNSM), Barcelona, Spain, November 9-13, 2015. This selective single-track conference is the premier fall event in the area with an average acceptance ratio of 15%.
- 2014. **Best Paper Award,** IEEE/IFIP International Conference on Network and Service Management (CNSM), Rio De Janeiro, Brazil, November 17-21, 2014. This selective single-track conference is the premier fall event in the area with an average acceptance ratio of 15%.
- 2013. **Runner Up for Best Paper Award.** IEEE/ACM/IFIP International Conference on Network and Service Management (CNSM), Zurich, Switzerland, October 14-18, 2013. This selective single-track conference is the premier fall event in the area with an average acceptance ratio of 15%.
- 2013. **Best Paper Runner-Up Award,** IEEE ICDCS 5th Int. Workshop on Hot Topics in Peer-to-peer computing and Online Social networking (HotPOST), Philadelphia, USA, April 2013.
- 2012. **Best Poster Prize,** International Symposium on Information Technology Convergence Engineering (ITCE), Seoul, Korea, July 2012
- 2010. **Best Student Paper Award,** IFIP/IEEE International Conference on Network and Services Management (CNSM), Niagara, Canada, October 2010. This selective single-track conference is the premier fall event in the area with an average acceptance ratio of 15%.
- 2010. **Best Poster Award,** International Symposium on Information Technology Convergence Engineering (ITCE), Pohang, Korea, August 2010.
- 2009. **Best Paper Award,** IFIP/IEEE Integrated Network Management (IM), Long Island, USA, June 2009.

- 2008. **IEEE Communication Society 2008 Fred W. Ellersick Paper Prize** for the paper "Resource and Service Discovery in Large-Scale Multi-Domain Networks", IEEE Comm. Surveys & Tutorials, Vol. 9 (4): 1-30, Oct. 2007.
- 2007. **Best Student Paper Award**, IFIP/IEEE Integrated Network Management Symposium (IM), Munich (Germany), May 2007
- 2006. **Runner up for Best Paper Award** of the IEEE GLOBECOM 2006, San Francisco, USA.
- 2005. **Runner Up for the IEEE Communications Society Leonard G. Abraham Prize** – IEEE Journal on Selected Areas in Communications (JSAC) Best Paper Award.
- 2004. **Best Student Paper Award** at MMNS 2004, the IFIP/IEEE International Conference on Management of Multimedia Networks and Services (MMNS), San Diego (USA), October 2004
- 2003. **Best Paper Award** of the MMNS 2003, the IFIP/IEEE International Conference on Management of Multimedia Networks and Services (MMNS), September 2003
- 2001. **Best paper award** of the International KICS/ IEEE Journal of Communication Networks

INVITED TALKS, SEMINARS, PANELS, TUTORIALS

Keynote Addresses:

1. 3rd IEEE Virtual Conference on Communications (VCC), Virtual, November 5, 2025.
2. 18th IEEE Colombian Conference on Communications (ColCom), Popayan, Colombia, August 14, 2025.
3. 7th International Workshop on Cyber-Security Threats and Privacy Management in Software-defined and Virtualized Infrastructures (SecSoft), co-located with IEEE NetSoft, Budapest, Hungary, June 27, 2025.
4. 8th International Balkan Conference on Communications and Networking (BalkanCom). Piraeus, Greece, June 18, 2025.
5. 13th IEEE International Conference on Cloud Networking (CloudNet). Rio de Janeiro, Brazil. Nov. 27, 2024.
6. 14th IFIP/IEEE Wireless and Mobile Networking Conference (WMNC). Sousse, Tunisia, Oct. 17, 2022
7. 40th Brazilian Symposium on Computer Networks and Distributed Systems (SBRC). Online 5 May 2022.
8. 22nd ACM/IFIP Middleware Conference (Middleware). December 10, 2021.
9. Facebook Network Infrastructure Summit (Online). December 7, 2021.
10. IEEE Global Communications Conference (Globecom) 2nd Workshop on Network Management for 6G Communication Systems. December 7, 2021.
11. 12th IEEE International Conference on Network of the Future, Coimbra, Portugal. October 6, 2021.
12. International Conference on Innovation and Intelligence for Informatics, Computing, and Technologies (3ICT), Bahrain, December 20-21, 2020.
13. 33rd IEEE Canadian Conference on Electrical and Computer Engineering (CCECE), London, Ontario, Canada, August 30 - September 2, 2020.
14. 16th IEEE Wireless Communications and Mobile Computing Conference (IWCMC), Limassol, Cyprus, June 15-19, 2020.
15. 10th IEEE Annual Information Technology, Electronics and Mobile Communications Conference (IEMCON), Vancouver, BC, Canada, October 17-19, 2019.
16. 3rd International Conference on Internet of Things and Applications (IoT), IEEE, Isfahan, Iran, April 17-18, 2019.
17. 16th IFIP/IEEE Integrated Network Management Symposium (IM), Washington DC, USA, April 11, 2019.
18. 3rd International Conference on Cloudification of the Internet of Things (CIoT), IEEE/IFIP, Paris, France, July 2-4, 2018
19. 6th IEEE International Black Sea Conference on Communications and Networking (BlackSeaCom), Batumi, Georgia, 4-7 June 2018

20. Network Innovators Community Event (GENI NICE) - NSF sponsored workshop in conjunction with IEEE ICNP Conference, Toronto, Canada, October 10, 2017.
21. 15th IFIP/IEEE Integrated Network Management Symposium (IM), Lisbon, Portugal, May 9, 2017.
22. 7th IEEE/IFIP International Conference on Network of the Future (NoF), Búzios, Brazil, November 17, 2016.
23. 9th IFIP/ACM Latin America Networking Conference (LANC), Valparaíso, Chile, October 13-14, 2016.
24. 4th ACCESS Industrial Workshop: Cloud Computing and Services, Stockholm, Sweden, May 2, 2016.
25. 12th Int. Conference on Design of Reliable Communication Networks (DRCN), Paris, France, March 15-17, 2016.
26. 19th Int. Conference on Innovations in Clouds, Internet and Networks (ICIN), Paris, France, March 1-3, 2016.
27. 7th Graduate Studies and Scientific Research, Khartoum, Sudan, February 20-23, 2016.
28. International Conference on Smart Sustainable City Technologies (S2CT), Toronto, Canada, October 13-14, 2015.
29. International School of Cloud Computing (ISCC), Tunis, Tunisia, April 3-6, 2015.
30. 1st ACM/IEEE International Conference on Networking Systems and Security (NSysS), Dhaka, Bangladesh, January 5-7, 2015.
31. 10th IEEE/IFIP Int. Conference on Network and Service Management (CNSM). Rio De Janeiro, Brazil, November 17-21, 2014.
32. 6th IEEE Global Information Infrastructure Symposium (GIIS). Montreal, Canada, September 14-18, 2014.
33. 7th IEEE International Symposium on Telecommunications (IST). Tehran, Iran, September 9-11, 2014.
34. 14th IEEE/IFIP Int. Symposium on Network Operations and Management (NOMS), Krakow, Poland, May 8, 2014.
35. 2nd Computer Engineering Frontiers Symposium and Exhibition on Mobile and Cloud Computing (CEFS), Dammam, Saudi Arabia, 10th March 2014.
36. 1st International Cloud Computing School (ICCS), IEEE, Hammamet (Tunisia), December 15-19, 2013.
37. 25th IEEE International Teletraffic Congress (ITC 25), Shanghai, China, September 10-12, 2013.
38. 4th IEEE International Conference on "Computer as a Tool" (EUROCON). Zagreb, Croatia, July 1-4, 2013.
39. 4th IEEE Int. Conference on Information Science and Applications (ICISA). Pattaya, Thailand, June 25, 2013.
40. 31st Brazilian Symposium on Computer Networks and Distributed Systems (SBRC). Brasilia, May 6-10, 2013.
41. 20th IEEE International Conference on Telecommunication (ICT). Casablanca, Morocco, May 6-8, 2013.
42. 4th IEEE Int. Global Information Infrastructure Symposium (GIIS). Choroní, Venezuela, Dec. 17-19, 2012.
43. 8th IEEE Wireless Communications and Mobile Computing Conf. (IWCMC), Limassol, Cyprus, Aug. 27-31, 2012.
44. IEEE International Conference on Advanced Infocomm Technology (ICAIT). Paris (France), July 25-27, 2012.
45. 29th Brazilian Symposium on Computer Networks and Distributed Systems (SBRC). Campo Grande, MS, Brazil, May 30 - June 3, 2011
46. 9th Congress on Network and Service Management (GRES). Montreal (Canada), 13-15 October 2010.
47. 3rd ICST/ACM Conference on Autonomic Computing and Communications (AUTONOMICS). Limasol (Cyprus), September 9-11, 2009.
48. 1st IFIP/IEEE Wireless Days Conference. Dubai (United Arab Emirates). November 24-27, 2008.
49. 33rd IEEE Conference on Local Computer Networks (LCN). Montreal, Quebec, Canada. 14-17 October 2008.
50. 13th IEEE Symposium on Computers and Communications (ISCC). Marrakech, Morocco. July 6 - 9, 2008.
51. 6th IEEE/ACM Conference on Communication Networks and Services Research (CNSR). Halifax, Nova Scotia, Canada. May 5 - 8, 2008
52. 3rd IEEE/IFIP International Conference on Network Management (MANWEEK). San Jose, USA. Nov. 2, 2007.
53. 4th International Workshop on "Next Generation Networking Middleware" (NGNM). Samos (Greece). 7 June 2007.
54. 4th IEEE European Conf. on Universal Multiservice Networks (ECUMN). Toulouse (France), 14-16 Feb. 2007.
55. 6th Asia Pacific Networks Operation and Management Symposium (APNOMS'02), Jeju (Korea), 25-27 Sept. 2002.

Invited talks (Conferences and University/Industry Research Seminars):

56. "Network Virtualization: Past, Present and Future". Research Seminar. Azerbaijan University of Architecture and Construction. Baku (Azerbaijan), December 17, 2025.
57. "No One Secure Alone: It takes a network to secure a network" ESCAPE Seminar. Politecnico di Torino, October 28, 2025.
58. "Network Virtualization: Past, Present and Future". International Distinguished Lecture Series. School of Engineering, College of Arts and Sciences, Texas A&M International University, January 30, 2025.
59. "Network Virtualization: past, present and moving forward". International Telecommunications Union (ITU) Webinar Series hosted by the ITU Journal, June 18, 2024.

60. "Network Virtualization: past, present and moving forward". Distinguished Lecture Series. School of Computer Science, University of Oklahoma, USA, April 29, 2024.
61. "AI-Driven Slice Orchestration in 5G and Beyond Networks". IEEE Workshop on Network Automation. Princeton, New Jersey, USA. March 25, 2024.
62. "Autonomous Management in 5G and Beyond Networks". Topical and Vertical Track 3 on Full Stack Automation in 5G & Beyond (5GB) Networks. IEEE Future Networks World Forum. Baltimore, MD, USA, Nov. 13, 2023,
63. "Unity is strength and so is collaborative security". Inaugural Distinguished Speaker Series. Concordia Cybersecurity Research Center, Concordia University, Montreal, September 28, 2023.
64. "Implications of Open RAN adoption on AI-driven Management of 5G and Beyond Networks". IEEE Globecom. Rio de Janeiro, Brazil, December 5, 2022.
65. "Cloud Data Centers at the Core (and the Edge) of Network Automation". Huawei Data Center Networking Workshop (DCN). Toronto, November 29-30, 2022.
66. "Unity is strength and so is collaborative security". Joint Cybersecurity and Resilience Initiative and IPSI Public Lecture Series. University of Toronto (Online Event), March 29, 2022.
67. "Data Center Networks: An Opportunity for Network Automation". Huawei Data Center Networking Workshop (DCN). Online Event, 30 November 2021.
68. "Elastic Optical Network Slicing Technologies". Industry Forum on All optical service networks for F5G in conjunction with the Asia Communications and Photonics Conference (ACP). Shanghai, China (Online event), 24 October 2021.
69. "Elastic Optical Network (EON) Slicing Technologies". Huawei Strategy and Technology Workshop (STW) 2021, Online Event, 16 October, 2021.
70. "Traffic Classification in the New Reality of an Encrypted Internet". Feature Talk. IEEE Summit on Communications Futures, Online Event, 16 January, 2021.
71. "Network Management and AI". Feature Talk. IEEE Summit on Communications Futures, Honolulu, Hawaii, USA, 18 January, 2020.
72. "Self-driving networks". Future Network Frontiers Research Workshop. Montreal, Canada. July 18, 2019.
73. "Self-driving networks". Departmental Seminar. Department of Computer Science and Engineering, Kyung Hee University, Seoul (Korea), May 16, 2019.
74. "Securing smart connected infrastructures with the Blockchain". Smart Connected Infrastructure and Digital Services Workshop (SIS), Western University, London, ON. (Canada), November 14-15, 2018.
75. "The Cloud" to "Things" Continuum". Laboratoire d'informatique Gaspard Monge (LIGM), Université Paris-Est Marne-la-Vallée (UPEM), Paris, France, July 3, 2018.
76. "Convergence of IT & Telecommunications: Towards Programmable, Intelligent and Resilient Networks". INRIA International Chair Inaugural Talk. Centre Inria Nancy Grand - Est, Nancy (France), May 29, 2018.
77. "Recent Directions in Network Softwarizations". Masdin Seminar, INRIA. Nancy, France. July 27, 2017.
78. "Reliable Network Slicing: From Transport Networks to 5G". INRIA Nancy Grand Est. France. July 13, 2017.
79. "Orchestration and Management of Service Function Chains in Network Function Virtualization (NFV)". IETF Network Management Research Group Meeting held during NOMS 2016. Istanbul, Turkey, April 27, 2016.
80. "VNFs and VNF Chains Orchestration". GTA, University Federal do Rio de Janeiro (UFRJ). Rio De Janeiro, Brazil. December 16, 2015.
81. "On Orchestrating Virtual Network Functions". International DMTF Academic Alliance Workshop on Datacenter and Cloud Management (DCM). Co-located with the IEEE/IFIP/ACM International Conference on Network and Service Management. Barcelona, Spain. November 9, 2015.
82. "A Software-Defined Edge Cloud for Future Application Platforms". Department of Computer Science, University Federal do Minas Gerais (UFMG). Belo Horizonte, Minas Gerais, Brazil. May 29, 2015.
83. "Smart Edge: A Software-Defined Infrastructure for Future Application Platforms". GTA, University Federal do Rio de Janeiro (UFRJ). Rio De Janeiro, Brazil. May 27, 2015.
84. "Overview of Cloud Computing Research". Ecole Supérieure des Telecommunications (SUPCOM). Tunis, Tunisia, April 7, 2015.
85. "What's Next in Online Social Networking". 18th IEEE International Conference on Innovations in Services, Networks and Clouds (ICIN). Paris, France, February 17-19, 2015.
86. "Smart Edge: A Software-Defined Infrastructure for Future Application Platforms". Orange Labs Seminar. Issy Les Moulineaux, France. February 18, 2015. 2014.
87. "Distributed OpenFlow Testbed; A Roadmap". Univ. Federal do Rio de Janeiro, RJ, Brazil, Nov. 18, 2014.
88. "On Intrusion Detection Networks". Univ. Federal do Rio de Janeiro, Rio De Janeiro (Brazil), Nov. 11, 2014.

89. "Trends in Cloud Resource Management". Univ. Federal do Rio de Janeiro, RJ, Brazil, Nov. 10, 2014.
90. "Cloud Management: Knowing is Half The Battle". IEEE Montreal Section and Concordia University Seminar Series, Montreal (Canada), September 17, 2014.
91. "Efficient Workload Management in Heterogeneous Cloud Data Centers". Iran's University of Sciences and Technology (IUST), Tehran (Iran), September 8, 2014.
92. "McNaughton Lecture". IEEE Canadian Conference on Electrical and Computer Engineering (CCECE), Toronto (Canada), May 6, 2014.
93. "On Cloud Resource Management". Center for Communication, Media and Information technologies, Department of Electronic Systems. Aalborg University Copenhagen (Denmark). April 28, 2014.
94. "Research Directions in Cloud Computing". KFPUM Computer Engineering Department, Dammam (Saudi Arabia), March 11, 2014.
95. "Dynamic Capacity Provisioning in Production Clouds". The 2013 Cheriton Research Symposium, Waterloo, Ontario, Canada, September 13, 2013.
96. "Resource Management in Production Clouds: Challenges and Opportunities". Distinguished Seminar Series. Division of IT Convergence Engineering, Pohang University of Science and Technology (POSTECH), Pohang, Korea, June 17, 2013.
97. "Peer-to-peer Web Hosting: Architecture and Challenges". Orange Labs Workshop on Information Centric Networking. Issy-Les-Moulineaux, France, June 3, 2013.
98. "Heterogeneity-Aware Cloud Resource Management", Departmental Seminar. Interdisciplinary Center for Security, reliability and Trust - University of Luxembourg, Luxembourg, May 31, 2013.
99. "On Intrusion Detection Networks". Nanyang Technological University (NTU) Seminars on Security, Singapore, March 5, 2013.
100. "On Cloud Computational Models and the Heterogeneity Challenge". Workshop on the Future of Middleware (FOME'11) co-located with the ACM/IFIP/USENIX 12th Middleware Conference (Middleware 2011), Lisboa (Portugal), December 13, 2011.
101. "Research Trends in Cloud Computing". Electronics and Telecommunications Research institute (ETRI) -- Internet Research Division -- Seminar Series, Daejeon (Korea), Dec. 5, 2011.
102. "pWeb: Serverless Web Hosting". Bell Canada. Toronto, April 8, 2011.
103. "Network Virtualization: Identity Management and Network Embedding". POSTECH-HIT Joint Workshop on Networking. Pohang University of Science and Technology (POSTECH), Pohang (Korea), August 18, 2010.
104. "Network Virtualization: State of the Art and Research Challenges". Workshop on Networking. Hanoi National University, Hanoi (Vietnam), April 9, 2010.
105. "Network Virtualization: Identity Management and Network Embedding". HUT Workshop on Networking. Hanoi University of Technology (HUT), Hanoi (Vietnam), April 8, 2010.2009.
106. "Network Virtualization". Second Workshop on Information Technology Convergence Engineering (ITCE). POSTECH, Pohang (Korea), April 17, 2009.
107. "On the Implementability & Manageability of Autonomic Networks". First International Symposium on Information Technology Convergence Engineering (ITCE). POSCO Int. Center, Pohang (Korea), Sep. 16-17, 2009.
108. "Distributed Search Revisited: Resolving the Conflict of Efficiency and Flexibility". University of Toronto Network Seminar Series (TON), Toronto (Canada), October 2008.
109. "Distributed Pattern Matching: Concept and Applications". Univ. Villetaneuse, Paris (France), June 2008.
110. "Peer-to-Peer Networks; State of the Art and Research Directions". Ecole Nationale Supérieure des Telecommunications (ENST), Paris (France), January 2006.
111. "Towards Autonomic Networking". ECE Seminar, McGill University, July 2005.
112. "WUCLP: Waterloo User-Controlled Lightpaths System". Korea Telecom, Daejeon (Korea), Jun. 15, 2004.
113. "Internet Next Generation: QoS Architectures for Multimedia Applications". Department of Computer Science and Engineering, POSTECH, Pohang (Korea), March 17, 2004.
114. "Customer-Centric Network Planning". Korea Telecom (KT), Seoul (Korea), Feb. 13, 2004.
115. "Net-Oracle: A Tool for Customer-Centric Network Analysis and Planning". Distributed Processing and Network Management Research Lab., POSTECH, Pohang (Korea), Feb. 5, 2004.
116. "Multi-Domain Service Provisioning". CANARIE's Advanced Networks Workshop. 2004.
117. "Topology and Mobility Considerations in Mobile Ad hoc Networks". 2nd Ad Hoc Networking Workshop. 2003.
118. "On Routing in Ad hoc Networks". 16th Congress on New Architectures for Communications (DNAC'02). 2002.
119. "Network Management Research at University of Waterloo". Alcatel Canada, Ottawa (Canada), 2003.
120. "Trends in Network Management". Alcatel France, Paris (France), 2003.

121. "Network Management: Trends & Enabling Technologies". Annual RISQ Conference (RISQ'02). 2002.
122. "Policy-Based Routing in Ad hoc Networks". 1st Ad Hoc Networking Workshop (Med-hoc-Net'02). 2002.
123. "The Network Management Viewpoint on Certification and Security". International Workshop on Certification and Security in E-Services (CSES'02), held as part of the IFIP World Computer Congress. 2002.
124. "Network Management: The State of the Art". IFIP World Computer Congress (WCC'02) TC6 Stream on Communication Systems. 2002.
125. "Network Architectures for the Internet". 7th Conference on Computer Science (MCSEAI'02). 2002.
126. "Meta-Policies for Network Programming". Active Networks Workshop. 2002.
127. "Self-Configuring Networks". Ecole Polytechnique, University of Montreal, Montreal (Canada), Sep. 20, 2002
128. "Towards Self-Managed Networks". Horizon Speaker Series, NORTEL, Ottawa (Canada), June 6, 2002
129. "Towards Self-Managed Networks". Board of Governors Reception, University of Waterloo, June 4, 2002
130. "Towards Self-Managed Networks". Nortel Networks Knowledge Interaction Workshop, University of Waterloo, Waterloo (Canada), April 25, 2002
131. "Scalable Policy-based Management". KTH, Stockholm (Sweden), Apr. 11, 2002
132. "Management of Networks and Distributed Systems Research". IFIP Technical Committee on Communication Systems Meeting, Saariselka (Finland), April 6-7, 2002
133. "Computer Networks: How it actually works?". Summer Institute for Computer Studies Educators, Aug. 2002
134. "Network Management in the e-commerce era". Networking Workshop organized as part of the annual conference held by the IBM Centre for Advanced Studies (CASCON). 1999.
135. "Automated Network Management". Network and Distributed Systems Group (Waterloo), Waterloo, 1999.
136. "Programmable Management of Large-scale Networks". Computer Science and Telecommunications Research Institute (DePaul University), Chicago, 1999.
137. "Distributed Object-oriented Network Management". Department of Electrical and Computer Engineering. University of Western Ontario, London, ON, 1998.
138. "Network Management Programmability". Network Architecture Lab. (University of Toronto), Toronto, 1998.
139. "Trends in Integrated and Automated Management of Networks and Distributed Systems". Department of Electrical and Computer Engineering. McGill University, Montreal, QC, 1998.
140. "A System Approach to Load Balancing in Distributed Multimedia Environments". School of Information Technology Engineering. University of Ottawa, Ottawa, ON, 1998.
141. "Network and Distributed Systems Management: State of the Art, Status of Standards and Open Issues". In Networking Laboratory. ESIGETEL School of Engineering, Fontainebleau, France, 1997.
142. "Intelligent Management of Mobile Wireless Networks". In Department of Electrical and Computer Engineering. Concordia University, Montreal, QC, 1997.
143. "High Availability of Multimedia Services: Application in Video-on-Demand Environments". French-Brazilian Symposium on Architectures for Distributed Systems (SFBSID). 1997.
144. "QoS Management in Video-on-Demand Environments". Int. Conf. on Networks and Services Management (GRES). 1997.
145. "Towards Intelligent Management of Mobile Cellular Networks.". ACM/IEEE/IFIP International Workshop on Mobile and Wireless Communications Networks (MWCN). 1997.
146. "Intelligent Management System for Fault Diagnosis in Cellular Telecommunication Networks". IEEE International Conference on Telecommunications (ICT). 1997.
147. "Distributed Systems and Applications Management: Needs for Integration and Automation". World's Information Technology Conference and Exhibits (COMDEX). 1996.
148. "Towards Integrated and Automated Management of Network and Distributed Systems". Department of Computer Science. University of Montreal, Montreal, QC. 1996.
149. "Network Management versus Traffic Control in ATM Networks". PRISM Laboratory. University of Versailles Saint-Quentin en Yvelines, Versailles, France. 1995.

Panels at International Conferences:

150. Panel on AI in "Sustainable Network Management in the Age of AI: Reducing Power Consumption and Carbon Footprint". 21st International Conference on Network and Service Management (CNSM). Bologna, Italy, October 30, 2025.
151. Panel on AI in "Communications and Networking". 8th International Balkan Conference on Communications and Networking (BalkanCom). Piraeus, Greece, June 19, 2025.

152. Panel on "AI-based Orchestration Technologies" at the 2025 IEEE/IFIP Network Operations and Management Symposium (NOMS). Honolulu, Hawaii, USA, May 13, 2025.
153. Experts Panel on "Intelligent Network Slicing and Orchestration". Rogers 5G Partnership Summit. Brampton, Ontario, Canada, June 22, 2023.
154. Panel on "Artificial Intelligence for Network Operation and Management: Can it meet the requirements of tomorrow's networks". IFIP/IEEE Network Operations and Management Symposium (NOMS) 2023, Miami, FL, USA, May 11, 2023.
155. Panel on "Blockchain for Future Networks". Blockchain Technology Symposium (BTS) 2022. University of Calgary. Calgary (Canada), June 9, 2022.
156. Academic Leader Panel. Canadian Academy of Engineering International Workshop on Sustainable, Intelligent Next Generation Systems. Ottawa (Canada). March 15, 2022.
157. Distinguished Expert Panel on "Management in the Age of Softwarization, Artificial Intelligence, and Cybersecurity". IEEE/IFIP Network Operations and Management Symposium (NOMS 2020), Online, 23 Apr. 2020.
158. Panel on "High-Precision Networking Services and Service Function Chaining: Frontier or Solution?". International Workshop on High-Precision Networks Operations and Control, Segment Routing and Service Function Chaining (HiPNet+SR/SFC 2019), Halifax (Canada), October 25, 2019.
159. Panel on "Future Network Frontiers". Future Network Frontiers Research Workshop, Montreal (Canada), July 18, 2019.
160. Distinguished Expert Panel on "Towards a Denationalization of Money". IEEE International Conference on Blockchain and Cryptocurrency (ICBC), Seoul (South Korea), May 17, 2019.
161. Distinguished Expert Panel on "Intelligent Management for the Future Wave of Enterprises". IFIP/IEEE IFIP/IEEE International Symposium on Integrated Network Management (IM), Washington DC (USA), April 11, 2019.
162. "Mixing IoT technologies for better performance". 3rd International Conference on Cloudification of the Internet of Things (CIoT), IEEE/IFIP, Paris, France, July 4, 2018.
163. "Network Research in the Age of Internet Ossification". IEEE International Conference on Network Protocols (ICNP), October 13, 2017.
164. "Hot Topics in Networking and their Testbed Requirements". GENI Network Innovators Community Event (NICE), Toronto (Canada), October 10, 2017. 2017.
165. "Success factors for 5G networks, today and tomorrow", 21st Conference on Innovations in Clouds, Internet and Networks (ICIN), IEEE/ACM/IFIP, Paris (France), February 22, 2017.
166. "Network Research in the Age of Internet Ossification". IEEE International Conference on Network Protocols (ICNP), October 13, 2017.
167. "Hot Topics in Networking and their Testbed Requirements". GENI Network Innovators Community Event (NICE), Toronto (Canada), October 10, 2017.
168. "Transition to Software-Based Infrastructure". SAVI Annual General Meeting, July 7, 2016.
169. "Fully agile carrier-grade telco NFV - Science fiction or tomorrow's reality?". IEEE/IFIP Network Operations and Management Symposium (NOMS), Istanbul (Turkey), April 28, 2016.
170. Distinguished Expert Panel on "Smart Management in a Virtualized World". IEEE/IFIP/ACM International Conference and Network and Service Management (CNSM), Barcelona (Spain), November 12, 2015.
171. "SDN and NFV for Telco and Data Centre Operators – How can They be Incorporated into the Business Model?" 6th IEEE Global Information Infrastructure Symposium (GIIS). Montreal, Canada, September 14-18, 2014.
172. "Bridging Network Management and Software-Defined Networking". IEEE/IFIP International Symposium on Network Operations and Management (NOMS), Krakow, Poland, May 8th 2014.
173. "The Future of Mobile and Cloud Computing". 2nd Computer Engineering Frontiers Symposium and Exhibition on Mobile and Cloud Computing (CEFS), Dammam, Saudi Arabia, 10th March 2014.
174. "Cloud Computing: What Research". Int. Cloud Computing School (ICCS), IEEE, Tunisia, Dec.15-19, 2013.
175. "Smart Management in a Virtualized World". Distinguished Expert Panel. IEEE/IFIP International Symposium on Integrated Network Management (IM'13), Ghent (Belgium), May 30, 2013
176. "Race Against the Machine: Automating the Human Manager". IEEE/IFIP International Symposium on Integrated Network Management (IM'13), Ghent (Belgium), May 30, 2013
177. "Information Centric Networking: Impact on Design and Management". IEEE/IFIP Network Operations and Management Symposium (NOMS'02), Maui (Hawaii), April 18, 2012
178. "Next Generation Services Overlay Networks". At the IFIP/IEEE International Symposium on Integrated Network Management. Dublin (Ireland), April 26, 2011.

179. "Smart Grid Management Research: Challenges and Opportunities". At the 1st IEEE/IFIP International Workshop on the Management of the Smart Grid. Osaka (Japan), April 23, 2010. Also served as Panel Moderator.
180. "What Did We Learn From Autonomic Communications Research". At the IEEE/IFIP Autonomic Communications and Network Management (ACNM), co-located with the IFIP/IEEE International Symposium on Integrated Network Management (IM). Long Island (USA), June 5, 2009. Also served as Panel Moderator.
181. "Cloud Computing and Management". At the IEEE/IFIP International Conference on Network Management (MANWEEK). Venice (Italy), October 26-30, 2009.
182. On the Management of Ubiquitous Multimedia Communication. In IEEE International Conference on Communications (ICC), Beijing (China), May 21, 2008.
183. Self-Management: Separating facts from fiction. In IEEE/IFIP Network Operations and Management Symposium (NOMS), Vancouver (Canada), April 2006.
184. Future of Wireless Networks (4G, Ad-Hoc, Sensor Networks: Opportunities and Challenges Ahead). In IEEE International Symposium on Computer and Communications (ISCC'03), 2003.
185. Emergence of SLA as Information Technology Business Workhorse. In IEEE International Conference on Communications (ICC'03), 2003.
186. Challenges in Managing Multimedia Wireless Networks. In IFIP/IEEE International Conference on the Management of Multimedia Networks and Services (MMNS'01), 2001.
187. Quality-of-Service in the Internet: Reality or Hype? In IFIP/IEEE International Conference on the Management of Multimedia Networks and Services (MMNS'00), 2000.
188. Quality-of-Service in IP Networks. Int. Conference on Networks and Services Management (GRES'99), 1999.
189. Design of Enterprise Networks with Open TCP/IP Technologies. In IEEE International Conference on Enterprise Networks and Applications (EntNet'97), 1997.

Tutorials at International Conferences:

190. "Virtualization in Future Wireless Networks: Why is it Still Hard to Achieve?". At the IEEE Global Communications Conference (Globecom), 8-12 December 2024, Cape Town, South Africa (with Soumaya Hamouda and Rami Langar).
191. Research Directions in Cloud Computing. 7th IEEE International Symposium on Telecommunications (IST). Tehran, Iran, September 9-11, 2014.
192. Peer-to-Peer Networking: State of the art and research challenges. 29th Brazilian Symposium on Computer Networks and Distributed Systems (SBRC), Campo Grande (Brazil), May 30 - June 3, 2011.
193. Peer-to-Peer Networking: State of the art, research challenges and P2P Networking for Consumer Electronics. IEEE Consumer Communications and Networking Conference (CCNC), Las Vegas, USA, Jan. 9-12, 2011.
194. Peer-to-Peer Networking: State of the Art and Research Challenges. IEEE Consumer Communications and Networking Conference (CCNC). Las Vegas (USA), Jan. 10, 2009.
195. Peer-to-Peer Networking: State of the Art and Research Challenges. IEEE Global Information Infrastructure Symposium (GIIS). Hammamet (Tunisia), June 26, 2009.
196. Peer-to-Peer Networking: State of the Art and Research Challenges. 7th International Conference on Computer Communications (ICC), Beijing (China), May 23, 2008.
197. Peer-to-Peer Networking: State of the Art and Research Challenges. 10th IEEE/IFIP Network Operations and Management Symposium (NOMS), Salvador (Brazil), April 11, 2008.
198. Peer-to-Peer Networking: State of the Art and Research Challenges. 7th Int. Conference on New Technologies of Distributed Systems (NOTERE), Marrakech (Morocco), June 5, 2007.
199. Peer-to-Peer Networking: State of the Art and Research Challenges. 10th IFIP/IEEE Integrated Network Management Symposium (IM), Munich (Germany), May 17, 2007.
200. Peer-to-Peer Networking: State of the Art and Research Challenges. 1st International Conference on New Technologies, Mobility and Security (NTMS), Paris (France), May 2, 2007.
201. Peer-to-Peer Networking. IFIP Networking Conference (Networking'06), Coimbra (Portugal), May 15, 2006.
202. Peer-to-Peer Networking. IFIP Conference on Network Control and Engineering for QoS, Security and Mobility (NetCon'05), Lannion (France), November 14, 2005.
203. Peer-to-Peer Networking. International Workshop on Mobility Aware Technologies and Applications (MATA'05), sponsored by IEEE and IFIP. Montreal (Canada), October 17, 2005.
204. Peer-to-Peer Networks: Concept, Applications and Management. At the IFIP/IEEE Symposium on Integrated Network Management (IM 2005), Nice (France), May 2005.

205. Internet Multimedia Applications: Challenges and Design. IFIP Conference on Network Control and Engineering for QoS, Security and Mobility (NETCON'04), Palma de Mallorca (Spain), November 1, 2004
206. QoS Management in Internet Networks. IFIP/ACM SIGCOM LANC 2003
207. QoS in Wireless Ad hoc Networks. IFIP/IEEE Med-Hoc-Net, 2003
208. QoS in Wireless Ad hoc Networks. 2nd IFIP Mediterranean Workshop on Ad hoc Networks (Med-Hoc-Net'03), June 25-27, Mahdia (Tunisia), 2003
209. QoS Control in the Internet. 6th Asia - Pacific Networks Operation and Management Symposium (APNOMS'02), September 25-27, Jeju (Korea), 2002
210. Network Management: Basics, Standards and Evolution towards Intelligent Cost-effective Architectures, in IFIP/ACM Latin America Networking Conference (LANC), Santa Fe (Argentina), September 9-11, 2002
211. MPLS-Based VPNs: Design, QoS and Management, in IEEE/IFIP Network Operations and Management Symposium (NOMS'02), Florence (Italy), April 15-19, 2002
212. Quality-of-Service in Virtual Private Networks. In 4th International IFIP/IEEE Conference on Management of Multimedia Networks and Services (MMNS'01), 2001.
213. Virtual Private Networks: Design, Architectures, Planning and Management. IFIP/IEEE International Conference on Integrated Network Management (IM'01), 2001.
214. Middleware: Concept and Future Directions. 14th Congress on New Architectures for Communications, 1997.
215. Network Management: How to face emerging high-speed Network Technologies (with N. Agoulmine). 13th Congress on New Architectures for Communications (DNAC'96), 1996.

PROFESSIONAL CITIZENRY/SERVICE

Society Membership and Positions Held

- Chair, Awards Standing Committee, IEEE Communications Society, 2026-2027
- Member, IEEE Canada Awards Committee, IEEE Canada / Region 7. 2024
- Member, Awards Committee, IEEE Communications Society, 2020-2022
- Founding member, Executive Committee, and Chair of the Publication Committee, IEEE Blockchain initiative, 2018-2020
- Lead, IEEE Communications Society Software-Defined Networks initiative, 2018-2020
- Member of the IEEE Communications Society Emerging Technology Committee, 2018-2021.
- Member of the IEEE Communications Society Board of Governors, Publications Council, Online Content Board, and the Technical Services Board. 2016-2017
- Director, IEEE Communications Society Magazines. 2016-2017.
- Co-chair of Publications Committee, and Member of the Steering and Conference Committees, IEEE SDN initiative. 2014 – 2017.
- Canadian National Delegate to the IFIP (International Federation for Information Processing) Technical Committee on Communications Systems (TC6). 2012 – present.
- Director, Conference Publications Board of the IEEE Communications Society. 2008-2010.
- Director, Society Relations Board of the IEEE Communications Society. 2006-2008.
- Founding Director, IEEE Communications Society Standards Board. 2005-2006.
- Chairman, IEEE Communications Society Ad-hoc Committee on Standards. 2004-2005.
- Member of the IEEE Communications Society Board of Governors. 2005- 2010.
- Founding Chair, Autonomic Communications Technical Committee, under emerging technologies of the IEEE Communications Society. 2006-present
- Chair, TCII (Technical Committee on Information Infrastructure) of the Communications Society of IEEE. 2006-2010
- Vice Chair, TCII (Technical Committee on Information Infrastructure) of the Communications Society of IEEE. 2003-2005
- Chair, Technical Program. TCII (Technical Committee on Information Infrastructure) of the Communications Society of IEEE. 2001-2003

- Chairman, IFIP (International Federation for Information Processing) - Technical Committee on Communications (TC6) - Working Group (WG6.6) on Network and Distributed Systems Management. 2001-2007
- Founding Secretary of AHSNTC (Ad Hoc and Sensor Networks Technical Committee) of the IEEE Communications Society. 2005.
- Voting member of the IEEE Communications Society Board of Meetings and Conferences. Represent the technology sector “Networks and Systems Management”. 2004-present.
- Member of the IEEE Communications Society Standards Board. 2006-2008.
- Member of the IEEE Communications Society Online Content Board. 2004-2005.
- Member of the IEEE Communications Board of Journals. 2004-2010.
- Director, Autonomic Communication Forum. 2004-present.
- Fellow of the IEEE, member of ACM, member of IFIP WG6.2, WG6.9 and WG6.10, member of IEEE ComSoc (Communications Society), CNOM (Committee on Network Operation and Management) and AHSN (Committee on Ad Hoc and Sensor Networks)
- Chair, IEEE Communications chapter, Kitchener/Waterloo, since 2005
- Chair, IEEE joint Communications, Vehicular Technology chapter, Kitchener/Waterloo, 2002-2005
- Chair, IEEE joint Computer, Communications and Vehicular Technology chapter, Kitchener/Waterloo, 2000-2002

Scientific Councils and Advisory Boards

- Advisory Board Member, EU Horizon 2020 AI@EDGE Project. 2021-2024.
- Advisory Board Member. Research Center in Communications and processing of Big Data in clouds and fogs, University of Campinas (UNICAMP), Brazil
- Advisory Board Member, Portuguese Programas de Actividades Conjuntas MobiWise Project. 2016 – 2020.
- Advisory Board Member, EU Horizon 2020 reTHINK Project. 2015-2017
- Scientific and Industry Council Member, EU FP7 Flamingo Network of Excellence. 2013-2015

Editorial Positions

JOURNALS:

- **Editor-in-Chief.** IEEE Journal on Selected Areas in Communications. 2018-2021. Impact Factor: 16.4
- **Member of the Steering Committee.** IEEE Cloud Computing Magazine. IEEE. 2016-2017
- **Member of the Editorial Council.** IEEE China Communications Magazines. IEEE. 2016-2017
- **Co-Editor.** Journal of Internet Services and Applications - thematic series on Computational intelligence for Internet services and applications. Springer. 2016 - present
- **Advisory board.** IEEE Transactions on Network and Service Management. 2011-present.
- **Founding Editor-in-Chief.** IEEE Transactions on Network and Service Management. 2007-2010. IF: 5.3
- **Associate Editor.** IEEE Transactions on Mobile Computing. 2011 - 2016. IF: 7.9
- **Associate Editor.** Vehicular Communications. Elsevier. 2013 - 2019.
- **Associate Editor.** IEEE Communications Surveys and Tutorials. 2011-2012.
- **Editorial Board Member.** International Journal on Network Management. ACM/Wiley. 2011 - 2016.
- **Editorial Board Member.** Journal of Internet Services and Applications. Springer. 2010-present.
- **Editorial Board Member.** Journal of Wireless Communications and Mobile Computing. Wiley. 2010-2016.
- **Editor.** KICS/IEEE International Journal on Communications and Networks (JCN). 2002-2016.
- **Advisory Editorial Board member.** Int. Journal of Network and Systems Management. Springer. 2001-present.
- **Editorial Board Member.** J. of Autonomic and Trusted Computing. American Scientific Publishers. 2005 – present.
- **Editorial Board member.** Computer Networks Journal. Elsevier Science. 2006-2008.

- **Founding Editor-in-Chief.** Electronic Transactions on Network and Service Management, sponsored by the IEEE Communications Society. 2004-2006.
- **Editorial Board Member.** Int. Journal of Network and Systems Management (JNSM). Springer. 1999-2001.
- **Guest Co-editor.** Elsevier Computer Networks Journal, special issue on Artificial Intelligence for Future 6G Systems – 2025-2026.
- **Guest Co-editor.** ITU Journal on Future and Evolving Technologies, special issue on Network Orchestration and Management for 6G and Beyond – 2025-2026.
- **Guest Co-editor.** IEEE Transactions on Green Communications and Networking, special issue on Open Radio Access Networks: Architecture, Challenges, Opportunities, and Use Cases – 2023-2024.
- **Guest Co-editor.** Springer Annals of Telecommunications, special issue on 6G Networks –2024.
- **Guest Co-editor.** IEEE Networking Letters, special issue on Networking Enablers for 6G Use Cases – 2023.
- **Guest Co-editor.** Springer Journal of Network and Systems Management, special issue on High-Precision, Predictable and Low-Latency Networking – Vol. 30-31. 2023.
- **Guest Co-editor.** IEEE Networking Letters, special issue on Networking Enablers for 6G Use Cases – 2022-2023.
- **Guest Co-editor.** ACM/Wiley International Journal of Network Management, special issue on Challenges and Opportunities of Blockchain and Cryptocurrency – Vol. 30(5). 2020.
- **Guest Co-editor.** IEEE Transactions on Network and Service Management (TNSM), special issue on Novel Techniques for Managing Softwarized Networks – Vol. 15(4), December 2018.
- **Guest Co-editor.** IEEE Transactions on Network and Service Management (TNSM), special issue on Advances in Management of Softwarized Networks – Vol. 14(4), pp. 786 – 791, December 2017.
- **Guest Co-editor.** IEEE Transactions on Network and Service Management, special issue on Management of Softwarized Networks –Vol. 13(3), Sept 2016.
- **Guest Co-editor.** Vehicular Communications, special issue on Vehicular Cloud Communications. Elsevier. Vol. 4 (2016), April 2016.
- **Guest Co-editor.** IEEE Transactions on Network and Service Management, special issue on Efficient Management of SDN and NFV-based Systems – Part I. IEEE. Vol. 12 (2), June 2015.
- **Guest Co-editor.** IEEE Transactions on Network and Service Management, special issue on Efficient Management of SDN and NFV-based Systems – Part II. IEEE. Vol. 12 (1), March 2015.
- **Guest Co-editor.** Computer Networks Journal, special issue on Cloud Communications and Networks II. Elsevier. Vol. 93 (2015), October 2015.
- **Guest Co-editor.** Computer Networks Journal, special issue on Cloud Communications and Networks. Elsevier. Vol. 68 (2014), August 2014.
- **Guest Co-editor.** International Journal of Distributed Sensor Networks, Special Issue on Experiences in Planning and Deployment of Sensor Networks. Hindawi, Volume 2014. <http://dx.doi.org/10.1155/2014/198139>
- **Guest Co-editor.** China Communications, Issue on Service Computing. IEEE Press, Vol. 10(9), September 2013.
- **Guest Co-editor.** International Journal on Internet Services and Applications, special issue on Network Virtualization. Springer, Volume 4, Issue 11. November 2012.
- **Guest Co-editor.** Computer Networks Journal, Issue on Network Convergence. Elsevier, Vol. 55(7), May 2011.
- **Guest Co-editor.** Computer Networks Journal, Special Issue on Wireless Multi-Hop Networking for Infrastructure Access. Elsevier, Vol. 54, Issue 2. February 2010
- **Guest Co-editor.** IEEE Journal on Selected Areas in Communications, Issue on Autonomic Communications. IEEE Press, IEEE Press, Vol 28, Issue 1, January 2010.
- **Guest Co-editor.** Computer Communications Journal, Special Issue on Monitoring and Measurements of IP Networks. Elsevier Science, Vol. 29, Issue 10, June 2006.
- **Guest Co-editor.** Computer Networks Journal, Special Issue on Management in Peer-to-Peer Systems: Trust, Reputation and Security. Elsevier Science, Vol. 50, Issue 4, March 2006.

- **Guest Co-editor.** IEEE Journal on Selected Areas in Communications, Issue on Autonomic Communication Systems. IEEE Press, Vol. 23, Issue 12, December 2005.
- **Guest Co-editor.** IEEE Journal on Selected Areas in Communications, Special Issue on Recent Advances in Managing Enterprise Network Services. IEEE Press, Vol. 23, Issue 10, October 2005.
- **Guest Co-editor.** International Journal of Network and Systems Management (JNSM), special issue on Active Management of Multimedia Networks and Services. Springer, Vol. 8, Issue 1, March 2000.
- **Guest Editor.** International Journal on Interoperable Communication Networks, special issue on QoS Management in Multimedia Networks, Vol.2, Issue 4, January 2000.
- **Guest Editor.** ACM/Baltzer International Journal on Mobile Networks and Applications (MONET), special issue on Resource Management in Wireless Networks. ACM/Baltzer, Vol. 4, Issue 2, June 1999.

BOOK SERIES:

- Co-Editor, IEEE Press Book Series on Network and Service Management, 2026 - present
- Member of the International Advisory Board. IEEE Book Series on Network and Service Management, 2019 - 2026
- Member of the scientific committee. ISTE Science Publishing - London (UK) Networks and Telecommunications Book Series. (Books published either by ISTE Ltd and Wiley, or ISTE Press and Elsevier), 2025 - present

Conference Organization

- **Conference Steering Committees**
 - **Member.** IFIP/IEEE International Conference on Performance Evaluation and Modeling in Wired and Wireless Networks. 2022 – present
 - **Founding Member.** IEEE Conference on Blockchain and Cryptocurrencies (ICBC) 2018 – present.
 - **Member.** IFIP/IEEE Smart Cloud Networks & Systems Conference (SCNS) 2018.
 - **Chair.** IEEE/ACM/IFIP Int. Conference on Network and Service Management (CNSM) 2010 – present.
 - **Chair.** IEEE International Conference on Cloud Networking (CloudNet). 2012 – 2020
 - **Chair.** IFIP/IEEE International Symposium on Integrated Management (IM). 2001 – present
 - **Chair.** IEEE/IFIP International Symposium on Network Operation and Management (NOMS). 2001 – present
 - **Member.** IEEE Conference on Network Softwarization (NetSoft). 2015 – 2021
 - **Member.** IEEE Workshop on Analytics for Network and Service Management (AnNet). 2017 – present
 - **Member.** IEEE/IFIP Workshop on Distributed Autonomous Network Management Systems (DAMNS). 2009 – 2013
 - **Member.** IFIP Wireless Days Conference. 2008 – 2013
 - **Member.** International Workshop on CrossCloud Infrastructures. 2014 – 2019.
 - **Member.** International Conference on Networking Systems and Security (NSysS). 2015 – present.
 - **Member.** IEEE MASS Workshop on Cloud of Things (CoT). 2016.
 - **Member.** IEEE ICC Workshop on Application of green techniques to emerging communication and computing paradigms (GCC). 2012 – 2017
 - **Member,** IFIP/IEEE Int. Conference on the Cloudification of the Internet of Things (CloT). 2016 – 2018.
 - **Member.** IEEE International Conference on Telecommunications (ICT). 2012
 - **Founding Chair.** IEEE Global Information Infrastructure Symposium (GIIS). 2007 – 2016.
 - **Chair.** IEEE/IFIP Management Week (MANWEEK) 2005 – 2009.
 - **Chair.** IFIP/IEEE International Workshop on Distributed Systems Operation and Management (DSOM). 2001–2009
 - **Chair.** IFIP/IEEE Inter. Conf. on Management of Multimedia Networks and Services (MMNS). 1997 – 2009
 - **Member.** IFIP International Conference on Autonomic Networking. 2006.
 - **Member.** IFIP International Workshop on Autonomic Communications (WAC). 2005

- **Conference Executive Committees**

- **Technical Program Chair.** IEEE Global Communications Conference, Honolulu, Hawaii, USA, December 2028.
- **General Co-chair.** ACM/IEEE/IFIP International Conference on Network and Service Management (CNSM), Niagara Falls, Canada, October 30 – November 2, 2023
- **General Co-chair.** IEEE International Conference on 6G Networking, Paris, France, October 18-20, 2023
- **General Co-chair.** IFIP/IEEE International Conference on Performance Evaluation and Modeling in Wired and Wireless Networks. Waterloo, Canada, November 23-25, 2021
- **Workshops Co-Chair.** 3rd International Workshop on High-Precision, Predictable, and Low-Latency Networking (HiPNet). October 29, 2021.
- **Publication Co-chair.** IEEE International Conference on Communications (ICC'21), Montreal (Canada), June 2021.
- **General Co-chair.** IFIP Networking Conference, Paris (France), June 22-26, 2020.
- **Finance Chair.** IEEE Global Communications Conference (GLOBECOM'19), Hawaii (USA), Dec. 2019.
- **Finance Chair.** IEEE International Conference on Communications (ICC'18), Kansas City (USA), June 2018.
- **Program Co-Chair.** 3rd International Conference on Internet of Vehicles (IOV), Yanuca Island (Fiji), Dec. 2016.
- **International Liaison.** 18th Asia-Pacific Network Operations and Management Symposium (APNOMS'16). Kanazawa (Japan). October 5-7, 2016.
- **Special Sessions Co-Chair.** 5th IEEE Cloud Networking Conference (CLOUDNET). Pisa (Italy), October 3-5, 2016
- **Finance Chair.** IEEE Global Communications Conference (GLOBECOM'15), San Diego (USA), Dec. 2015.
- **General Chair.** IEEE Cloud Networking Conference (CloudNet'15), Niagara Falls (Canada), Oct. 2015.
- **General Co-chair.** IFIP/IEEE International Symposium on Integrated Network Management (IM'15), Ottawa (Canada), May 2015.
- **Founding Technical Program Co-Chair.** First IEEE Conference on Network Softwarization (NETSOFT), London, UK, Apr. 2015
- **General Chair.** 5th IEEE Workshop on Energy Efficiency in Wireless Networks Wireless Networks for Energy Efficiency (E2Nets'14) in conjunction with IEEE ICC 2014. Sydney (Australia), June 10-14, 2014.
- **Keynotes and Panels Co-Chair.** IEEE Black Sea Conference on Communications and Networking (BlackSeaComm'14). Odessa, Ukraine, May 27-30, 2014.
- **Finance Chair.** IEEE/IFIP Network Operations and Management Symp. (NOMS). Krakow, Poland, May 5-9, 2014.
- **General Co-Chair.** Workshop on Cross-Cloud Systems (CrossCloud'14) in conjunction with the 33rd IEEE INFOCOM 2014, Toronto (Canada), April 27 – May 2, 2014.
- **Workshops Co-Chair.** IEEE Wireless Communications and Networking Conf. (WCNC). Istanbul, April 6-9, 2014.
- **General Co-Chair.** 3rd International Conference on Network of the Future (NoF'13), IEEE. Pohang, Korea, October 23-25, 2013.
- **Publicity Co-Chair.** 1st International Black Sea Conference on Communications and Networking (BlackSeaComm'13), IEEE. Batumi, Georgia, July 3-5, 2013.
- **Founding Co-Chair.** 1st IEEE Workshop on Management and Security technologies for Cloud Computing (MANSEC-CC'12). Anaheim, CA, USA, December 2012.
- **Founding General Co-Chair,** 1st IEEE International Conference on Cloud Networking Conference (CloudNet'12), Paris (France), November 28-30, 2012.
- **Symposium Co-chair.** 3rd IEEE International Conference on Smart Grid Communications (SmartGridComm'12) - Symposium on Smart Grid Services and Management Models. Taipei (Taiwan), November 5-8, 2012.
- **Finance Chair,** IFIP/IEEE/ACM Conf. on Network and Service Management (CNSM), Las Vegas, USA, Oct. 2012.
- **Track Co-Chair.** IEEE 76th Vehicular Technology Conference (VTC'Fall12) Track on Wireless Networks, Québec City, Canada, September 3-6, 2012.

- **Program Co-Chair**, 8th International Wireless Communications and Mobile Computing Conference (IWCMC'12), IEEE. Limassol, Cyprus, August 2012.
- **Technical Program Co-Chair**. 52nd IEEE Int. Conf. on Communications (ICC'12). Ottawa, Canada, Jun. 10-15, 2012.
- **Track Chair**. 5th International Conference on Human System Interaction (HSI'12) – Track on Telemedicine and eHealth. Perth, Australia, June 6-8, 2012.
- **General Co-Chair**. 3rd IEEE Workshop On Energy Efficiency in Wireless Networks & Wireless Networks for Energy Efficiency (E2Nets'12). Ottawa, Canada, June 10, 2012.
- **Finance Chair**. IEEE/IFIP Network Operations and Management Symposium (NOMS'12). Maui, Hawaii, USA, April 16-10, 2012.
- **Patrons Chair**. IFIP/IEEE/ACM Conf. on Network and Service Management (CNSM). Paris (France), Oct. 2011.
- **General Chair**. 4th IFIP Wireless Days (WD'11). Niagara Falls, Canada, October 10-12, 2011.
- **Program Co-chair**. 7th International Wireless Communications and Mobile Computing Conference (IWCMC'11), IEEE. Istanbul, Turkey, July 5-8, 2011
- **General Co-chair**. 7th IEEE International Conference on Autonomic and Trusted Computing (ATC'10), Xi'an (China), October 2010
- **Founding General Chair**. IEEE/ACM/IFIP Conference on Network and Service Management (CNSM'10). Niagara Falls (Canada), October 2010.
- **Founder and General Co-Chair**. IFIP/IEEE International Workshop on Management of Smart Grids. Co-located with IEEE/IFIP NOMS 2010, Osaka (Japan), April 23, 2010
- **Publication Co-Chair**. IEEE Conf. on Computer Communications (INFOCOM'10). San Diego (USA), Apr. 2010
- **Finance Chair**. IEEE International Conference on Communications (GLOBECOM'09), Hawaii (USA), Nov. 2009.
- **International Liaison**. 12th IEEE Asia Pacific Network Operations and Management Symposium (APNOMS'09), Jeju (Korea), September 2009.
- **General Co-Chair**. IEEE Workshop on Autonomic Communications and Network Management (ACNM'09), co-located with IM 2009, Long Island (USA), June 2009
- **General Chair**. IEEE Global Information Infrastructure Symposium (GIIS'09), Tunisia, Jun. 23-25, 2009.
- **Symposium Co-Chair**. IEEE International Conference on Communications (ICC'09) - Symposium on Communications and Information Security Symposium. Dresden, Germany, June 2009.
- **Technical Program Co-Chair**. The 11th International Symposium on Stabilization, Safety, and Security of Distributed Systems (SSS 2009) – Track on System Safety and Security, Lyon (France), Nov. 3-6, 2009.
- **Track Co-Chair**. 24th IEEE Conference on Advanced Information Networking and Application (AINA) – Autonomic Computing and Communication. Perth, Australia, Apr. 20-23, 2010.
- **General Co-Chair**. IEEE Distributed and Autonomous Management of Networks and Services Workshop (DAMNS), co-located with the Global Communications Conference - Globecom 2008, New Orleans, LA (USA), Nov. 2008.
- **Symposium Co-Chair**. IEEE Global Communications Conference (GLOBECOM'08) - Symposium on Wireless Sensors and Adhoc Networks. Globecom 2008, New Orleans, LA (USA), Nov. 2008.
- **Co-founder and General Co-chair**. IFIP/IEEE Autonomic Communications and Network Management Workshop (ACNM'08), co-located with NOMS 2008, Salvador (Brazil), April 2008
- **Finance Chair**. IEEE Network Operations and Management Symposium (NOMS'08), Salvador (Brazil), April 2008.
- **Program Co-Chair**. Dagshtul Seminar on Self-Managing Networks. 2007
- **Symposium Co-Chair**. IEEE International Conference on Communications (GLOBECOM'07) - Symposium on Wireless Ad Hoc and Sensor Networks. ICC 2007, Glasgow, Scotland, June 2007
- **Founding General Co-chair**. IFIP/IEEE Autonomic Communications and Network Management Workshop (ACNM), co-located with IM 2007, Munich (Germany), May 2007
- **IEEE Liaison**. IEEE Consumer Communications and Networking Conf. (CCNC'07), Las Vegas (USA), Jan. 2007
- **Symposium Co-Chair**. IEEE Global Communications Conference (GLOBECOM'06) - Symposium on Wireless Sensors and Adhoc Networks. Globecom 2006, San Francisco (USA), November 2006

- **International Liaison.** IEEE Asia Pacific Network Operations and Management Symposium (APNOMS), Busan (Korea) September 2006
- **Technical Program Co-Chair.** Workshop on Autonomic Computing and Communications. ACC 2006, Niagara Falls (USA), June 2006
- **Symposium Co-Chair.** IEEE International Conference on Communications (ICC'06) – Special Areas in Communications. ICC 2006, Istanbul (Turkey), June 2006
- **General Chair.** IEEE/IFIP Symposium on Network Operations and Management (NOMS'06), Vancouver (Canada), April 2006
- **Technical Track Chair.** IEEE Vehicular Technology Conference (VTC), Montreal (Canada), Sep. 2006
- **Founder and General Chair.** First IEEE/IFIP Management Week (MANWEEK'05) - co-location of fall network management events: 8th MMNS, 16th DSOM, 5th IPOM and SSS. Barcelona (Spain), October 2005
- **Program Co-Chair.** IFIP/UNESCO Commission on building the infrastructure, WITFOR 2005, Gaborone (Botswana), August 2005.
- **Technical Program Co-Chair.** 3rd International Workshop on Self-Adaptive and Autonomic Computing Systems. SAACS 05, Copenhagen (Denmark), August 2005.
- **Technical Program Co-Chair.** Workshop on Autonomic Computing and Communications (ACC'05), Taormina (Italy), June 2005
- **Technical Program Co-Chair.** IEEE International Conference on Communications (ICC'05) Symposium on Next Generation Universal Services, Seoul (Korea), May 2005
- **Patrons Chair.** IFIP/IEEE Integrated Network Management Symposium (IM'05), Nice (France), May 2005.
- **Technical Program Chair,** IFIP Networking Conference (Networking'05), Waterloo (Canada), May 2005
- **Technical Program Chair.** IEEE Consumer Communications and Networking Conference (CCNC'05), Las Vegas (USA), January 2005
- **Technical Program Co-Chair.** IEEE/IFIP International Symposium on Network Operation and Management (NOMS'04), Seoul (Korea), April 2004
- **Tutorials Chair,** IEEE Int. Symposium on Computer Communications (ISCC'04), Alexandria (Egypt), July 2004
- **Panel Chair,** IEEE International Conference on Communications (ICC'03)
- **Finance Chair,** IFIP/IEEE International Conference on Integrated Network Management (IM'03). Colorado Springs, USA, March 2003.
- **Keynotes/Distinguished Expert Panel/Birds-of-a-Feather Chair,** IFIP/IEEE International Conference on Integrated Network Management (IM'01). Seattle, USA, May 2001.
- **Panel Chair,** IFIP/IEEE Int. Conf. on Management of Multimedia Networks and Services (MMNS'01).
- **Program Co-Chair,** IFIP/IEEE Int. Conf. on Management of Multimedia Networks & Services (MMNS'00).
- **Program Co-Chair,** IFIP Mini-conference on Active & Programmable Networks 2000.
- **Publicity Chair,** IFIP Networking Conference (Networking) 2000.
- **Co-Chairman,** IFIP/IEEE Int. Conf. on Management of Multimedia Networks and Services (MMNS'98).
- **Founder and Program Chair,** IFIP/IEEE International Conference on Management of Multimedia Networks and Services (MMNS'97).
- **Program Co-Chair,** IEEE Workshop on Feature Interactions in Telecommunication Networks (FIW'97).
- **Conference Technical Program Committees:**
 - IFIP/IEEE International Symposium on Integrated Management (IM) 2001 – present.
 - IEEE/IFIP Asia Pacific Network Operations and Management Symposium (APNOMS). 2006 – present.
 - IEEE/ACM/IFIP Int. Conference on Network and Service Management (CNSM). 2010 – present.
 - IEEE International Conference on Computer Communications (INFOCOM). 2007 – 2014.
 - IFIP Networking Conference. 2005 – present.
 - ACM Symposium on Applied Computing (SAC) – Track on Networking. 2007 – present.

- IEEE Global Information Infrastructure Symposium (GIIS). 2007 – 2017.
- International Teletraffic Congress (ITC), IEEE. 2007 2009 2013 2015
- IFIP Wireless and Mobile Networking Conference (WMNC). 2011– 2015.
- International Conference on Network of the Future (NoF). 2011 – 2015.
- IEEE International Workshop on Data Mining in Networks (DaMNet). 2011 – 2015.
- IEEE Symposium on Smart Grid Management and Service Design (SmartGridComm). 2011 – 2015.
- IFIP Int. Conf. on Autonomous Infrastructure, Management and Security (AIMS). 2011 – 2016.
- IEEE Latin American Conference on Cloud Computing and Communications (LatinCloud). 2012 - 2016.
- IFIP/IEEE International Workshop on QoE Centric Management (QCMan). 2012 - 2015
- IEEE INFOCOM Workshop on Smart Grids and Green networks (CCSES). 2012 – 2014.
- IEEE INFOCOM Workshop on Name Oriented Mobility (NOM). 2014
- ACM/IEEE 14th Cluster, Cloud and Grid Computing (CCGrid). 2014
- Intelligent Cloud Computing Conference. 2014
- IEEE/ACM Distributed Cloud Computing Workshop colocated with Utility and Cloud Computing (UCC). 2013
- IEEE Software Defined Networks for Future Networks and Service (SDN4FNS). 2013
- IEEE Tyrrhenian Workshop on Digital Communications: Green ICT (TIWDC). 2013
- IEEE International Conference on Cloud and Green Computing (CGC). 2013
- ACM Cloud and Autonomic Computing Conference (CAC). 2013
- IEEE International Workshop on Management of Cloud Systems (MoCS). 2013
- IEEE Workshop on Computational Intelligence for the Internet of Things (CIIoT). 2012
- Cloud Optimization workshop with the 12th ACM/IEEE Cluster, Cloud and Grid Computing (CCGrid). 2012.
- IEEE Workshop on Multimedia Communications over Emerging Networks (MCEN). 2012.
- IEEE International Workshop on Social Networks and TV (SNTV). 2012.
- Int. Conference on Advances in Computing, Communications and Informatics (ICACCI). 2012
- IEEE Conference on Advanced Infocomm Technologies (ICAIT). 2012.
- IEEE Workshop on Rural Communications (RuralComm). 2011 – 2013
- IEEE International Workshop on Machine-to-Machine Communications (M2M). 2011 – 2013.
- USENIX Hot Topics in Management of Internet, Cloud, Enterprise Networks and Services (Hot-ICE). 2011 – 2012.
- IEEE Australian Telecommunication Networks and Applications Conference (ATNAC). 2011.
- IEEE ICC Workshop on Networking Technologies and Strategies for Emerging Markets (NTSEM). 2011
- IFIP Workshop on Provisioning and Management of Service Oriented Architecture and Cloud Computing. 2011
- IEEE Federation of Telecommunications Engineers of the European Community International Congress. 2011.
- IEEE International Workshop on Smart Grid Communications and Networks (SG-ComNeTs). 2011.
- ICCCN 2011 Workshop on Social Interactive Media Networking and Applications (SIMNA). 2011.
- International Workshop on Networking Issues in Multimedia Entertainment (NIME). 2011.
- IEEE International Symposium on Programming and Systems (ISPS). 2011 - 2013
- IEEE Int. Symposium on Personal, Indoor and Mobile Radio Communications (PIMRC). 2011.
- Workshop on Provisioning and Management of Service Oriented Architecture and Cloud Computing. 2011.
- IEEE International Conference on Smart Measurements for Future Grids (SMFG). 2011.
- IEEE International Workshop on Security and Privacy in Internet of Things (SPIoT). 2011.
- IEEE Symposium on Wireless Personal Multimedia Communications (WPMC). 2011.
- IEEE/IFIP Cloud Management Workshop (CloudMan). 2010 – 2012.
- IEEE Int. Symposium on Policies for Distributed Systems and Networks (POLICY), 2010 – 2012.

- IEEE INFOCOM Work in Progress Track (WiP). 2010.
- Workshop on Future Trends on Ad-hoc and Sensor Networks (FT-ASN) in conjunction with the 8th ACS/IEEE International Conference on Computer Systems and Applications (AICCSA). 2010.
- International Conference on Wireless and Ubiquitous Systems (ICWUS). 2010.
- IEEE/IFIP Workshop on Embedded Network Management (NEMA). 2010.
- IFIP/IEEE International Workshop on Management of the Future Internet (ManFI). 2009 – 2012
- IFIP Wireless Days. 2008 – present.
- IEEE International Workshop on Personalized Networks (PerNet). 2008 2012.
- International Conference for Internet Technology and Secured Transactions (ICITST), IEEE. 2008.
- End-to-end Virtualization and Grid Management (EVMG). 2008.
- IFIP Personal Wireless Communications (PWC). 2008.
- ACM Symp. on Performance Evaluation of Wireless Ad Hoc, Sensor, and Ubiquitous Networks (PE-WASUN). 2008.
- Workshop on Algorithms and Mobile Ad hoc Networks (WAMAN). 2008
- IEEE Symposium on Pervasive Computing and Ad Hoc Communications (PCAC). 2008
- Workshop on Multimedia Security in Communication (MUSIC). 2008.
- IEEE Workshop on ITS for Ubiquitous Roads (UBIROADS). 2007 – 2011.
- IEEE Int. Conference on Self-Adaptive and Self-Organizing Systems (SASO). 2007 – 2009.
- Annual HP Software University Association Workshop (HP-SUA). 2007 – 2008.
- IEEE Workshop on Information Assurance Middleware for Communications (IAMCOM). 2007.
- International Conference on New Technologies of Distributed Systems (NOTERE). 2007.
- International Conference on New Technologies, Mobility and Security (NTMS), IEEE. 2007.
- International Conference for Internet Technology and Secured Transactions (ICITST). 2007.
- ACM Conference on Autonomic Computing and Communication Systems (Autonomics). 2007.
- Conference on Security in Network Architectures and Information Systems (SAR). 2007.
- EUROPEAN Conference on Universal Multiservice Networks (ECUMN) 2007
- IEEE Workshop on Distributed Autonomous Network Management Systems (DANMS). 2006 – 2012
- IFIP/IEEE Broadband Convergence Networks (BcN). 2006 – 2011.
- Colloque Francophone sur l'Ingenierie des Protocoles (CFIP). 2006 – 2008.
- IEEE/ACM Int. Workshop on Mobility in the Evolving Internet Architecture (MobiArch) 2006
- IEEE International Workshop on Self-Managed Networks, Systems & Services (SelfMan) 2006
- International Conference on Telecommunications and Multimedia (TEMU) 2006
- IFIP Wireless Communications and Information Technology in Developing Countries (WCIT) 2006
- IFIP Workshop on Application Controlled Optical Networks (ACON) 2006
- Colloque Francophone sur l'Ingenierie des Protocoles (CFIP) 2006
- IEE International Conference on Mobile Technology, Applications and Systems (Mobility) 2006
- International Conference for Internet Technology and Secured Transactions (ICITST) 2006
- IEEE Consumer Communications and Networking Conference (CCNC) 2005 – 2006; 2011.
- IEEE Conference on Sensor and Ad Hoc Networks (SECON) 2005 – 2006.
- IEEE Conference on Local Computer Networks (LCN) 2005 – 2006.
- IEEE International Conference on Autonomic and Trusted Computing (ATC) 2005 – 2006.
- International Workshop on Context Aware Networks Technology and Applications (CANET) 2005
- ACM SIGCOM Poster Program 2005
- International Workshop on Convergence of Heterogeneous Wireless Networks (ConWiN) 2005

- Workshop on Internet Compatible QoS in Ad hoc Wireless Networks (IC-QAWN) 2005
- IFIP Open Conference on Metropolitan Area Networks (MAN) 2005
- IEEE International Workshop on Management Issues and Challenges in Mobile Computing (MICMC) 2005
- IFIP International Workshop on Active Networks (IWAN) 2005
- ACM/CreatNet Int. Mobile and Multimedia Communications Conference (MobiMedia) 2005 .
- IFIP Workshop on Trusted and Autonomic Ubiquitous and Embedded Systems (TAUES). 2005
- International Workshop on Next Generation Networking Middleware (NGNM) 2004 2005
- IEEE Workshop on Reliability and Autonomic Management in Parallel and Distributed Systems (RAMPDS) 2005
- IEEE Conference on Wireless Communications (WirelessCom) 2005
- IEEE Int. Workshop on Radio Resource Management for Wireless Cellular Networks (RRM-WCN) 2005
- IEEE Int. Conf. on Wireless and Mobile Computing, Networks and Communications (WiMob) 2005 – 2008.
- International workshop on Mobile Ad Hoc Networks and Interoperability issues (MANET) 2005
- IEEE Wireless QoS Symposium (WiQoS) 2005
- International Conference on Information Networking (ICOIN), IEEE. 2004 – 2007
- IEEE Brazilian Symposium on Computer Networks (SBRC) 2004 – 2007.
- IEEE/ACM/IEICE Int. Conference on E-Business and Telecommunication Networks (ICETE) 2004 – 2005.
- IFIP International Workshop on Autonomic Communication (WAC) 2004 – 2005.
- IFIP Conference on Intelligence in Communication Systems (Intellcomm) 2004 – 2005
- International workshop on Next Generation Networking Middleware (NGNM) 2004 – 2005.
- IFIP Mediterranean Workshop on Ad Hoc Networks (Med-Hoc-Net) 2004 – 2005.
- International Conference on Electronic Commerce Research (ICECR) 2004
- IEEE Canadian Conference on Electrical and Computer Engineering (CCECE) 2004
- IEEE Int. Conference on High Speed Networks and Multimedia Communications (HSNMC) 2004
- IEEE Vehicular Technology Conference (VTC) 2003 2006 2007
- IEEE Workshop on End-to-End Monitoring (E2EMON) 2003 – 2007.
- IFIP/IEEE Network Control and Engineering Conference (NETCON) 2003 – 2005.
- IEEE Canadian Workshop on Information theory (CWIT) 2003
- IFIP Mediterranean Workshop on Ad Hoc Networks (Med-Hoc-Net) 2002 2003 2004 2005.
- IFIP World Computer Congress (WCC) 2002
- IEEE International Conference on Computer Communications (ICCC) 2002
- IEEE Wireless Communications and Networking Conference (WCNC) 2002
- SPIE Int. Conference on Quality of Service over Next Generation Data Networks (QoS) 2001 2002 2003
- IFIP Latin America Networking Conference 2002 2005
- International Conference on Electronic Commerce Research (ICECR-5) 2002 2005
- Magrebian Conference on Software Engineering and Artificial Intelligence 2002
- IEEE IP Operations and Management Workshop (IPOM) 2002
- International Conference on "Communication Systems and Networks (CSN) 2002
- IEEE Latin America Conference on Network Operation and Management (LANOMS) 2001 – 2005.
- Int. Symposium on Innovation in Information & Communication Technology (ISIICT) 2001 – 2003
- IEEE Symposium on Computers and Communications (ISCC) 2001 – 2003
- International Symposium on Software and Systems (I3S) 2001
- International Conference on Wireless and Optical Communications (WOC) 2001
- International Conference on Advances in Communications (AIC) 2001

- IEEE/IFIP International Symposium on Network Operation and Management (NOMS) 2000 – present.
- ACM Int. Conf. on Software Engineering Applied to Networking and Parallel/ Distributed Computing (SNPD) 2000
- International Conference on Networks and Services Management (GRES) 1999 – 2011
- IEEE Int. Workshop on Mobile Agents for Telecommunication Applications (MATA) 1999–2004.
- IFIP/IEEE Int. Workshop on Distributed Systems Operation and Management (DSOM) 1999–2009
- Annual Congress on New Architectures for Communications (DNAC) 1997 – present.
- IFIP/IEEE Int. Conference on Management of Multimedia Networks and Services (MMNS) 1997 – 2009.
- IEEE Workshop on Feature Interactions in Telecommunication Networks (FIW) 1997

Refereeing and reviewing

- Royal Society of Canada (RSC), Science Academies of the G7 (S7) Task Force, content in the context of Canada's presidency of the G7 in 2025
- Royal Institute of Technology (KTH) in Stockholm, International panel for KTH research assessment.
- ETH Zurich Research Commission for scientific evaluation
- Research Grants Council (RGC) of Hong Kong
- National Institutes of Science and Technology (INCT), Brazil
- Ontario Research Fund (ORF)
- NSERC Appeal Advisor. Discovery Grants program.
- Austrian Science Fund (FWF), Austria
- European Research Council (ERC), European Union
- MITACS
- Ontario Centres of Excellence (OCE) and its Communications and Information Technology Ontario (CITO) Division.
- Natural Sciences & Engineering Research Council of Canada (NSERC): Discovery Grants; Collaborative Research Grants; Strategic Research Grants; NSERC Industry Research Chairs; Steacy Fellowships, NSERC Create Grants.
- Canadian Fund for Innovation (CFI).
- Quebec's Fonds de recherche sur la nature et les technologies (FQRNT)
- Science Foundation of Ireland (SFI), Ireland
- French Agence Nationale de la Recherche (ANR)
- Qatar National Research Fund (QNRF), UAE
- Portuguese Foundation of Science and Technology (FCT)
- CNPq (Conselho Nacional de Desenvolvimento Científico e Tecnológico): National Council for Scientific and Technological Development, Brazil
- Ministry of higher education of Saudi Arabia
- Competitive Internal Research Award (CIRA) program, Khalifa University of Science & Technology, UAE.
- Research funding program of the King Fahd University of Petroleum and Minerals (KFUPM), Saudi Arabia
- National Commission for Scientific and Technological Development (CONICYT) and the Superior Council of the National Fund for Scientific & Technological Development (FONDECYT), Chile
- Telecom Paris-Sud (INT) "Future et Rupture" scholarship program
- German-Israeli Foundation for Scientific Research and Development (GIF), Israel
- Narodowe Centrum Nauki (NCN), Poland.
- National Center of Science and Technology, Republic of Kazakhstan.
- A book for IEEE and a number of book proposals for various publishers.
- Frequently for a number of international journals (IEEE Journal on Selected Areas in Communications, ACM/IEEE Transactions on Networking, IEEE Transactions on Network Management, IEEE Transactions on Mobile Computing,

IEEE Transactions on Cloud Computing, IEEE Communications Magazine, IEEE Network, IEEE Communications Letters, J. on Network and Systems Management, Computer Networks, IEEE Transactions on Wireless, Wireless Communications and Mobile Computing, Computer Networks, Computer Communications,)

- Numerous international conferences and workshops

Research Review Panels

- Research Assessment of KTH (Royal Institute of Technology) in Sweden
- Natural Science and Engineering Research Council of Canada (NSERC), Research Tools and Instruments Grants.
- International Review Panel of INRIA “Networks and Telecommunications” theme evaluation (15 research groups).
- Ontario Graduate Scholarships (OGS).
- Fonds Quebecois de Recherche sur la Nature et les Technologies (FQRNT).
- Science Foundation of Ireland.
- Portuguese Research Foundation (FCT).
- Natural Science and Engineering Research Council of Canada (NSERC), Discovery Grants Program.
- Agence Nationale de la Recherche - France (ANR).
- Review Panel for the Accreditation of the College of IT, United Arab Emirates University (UAEU).
- iGrants, Office of Research Support at Qatar University (QU)

Academic Programs/Hiring Review Panels

- Computer Networks graduate programs, Toronto Metropolitan University. 2025
- Ecole de Technologies Supérieure (ETS) in Montreal, Bachelor’s Degree in Distributed Computing. 2023
- University of Vienna professorial appointments 2022
- Polytechnique Montreal Canada Research Chair applications 2021
- School of Computing and Engineering (SCE) in the University of Missouri-Kansas City’s (UMKC). 2021
- University of Zurich Wirtschaftswissenschaftliche Fakultät, Faculty of Business, Economics and Informatics, committee for professorial hiring, 2020
- Telecom ParisTech committee for professorial hiring, 2020.
- Undergraduate major in Computer Science and Engineering (CSE), Electrical and Computer Engineering (ECE), American University of Beirut (AUB). 2018.
- Member of the Review Panel for the Accreditation of the College of IT (BSc in IT, Computer Engineering, CS, Computer Security, Master of Science in IT Management, in Information Security, in Network Engineering, and in Science in Software Engineering), United Arab Emirates University (UAEU), UAE. 2017

RESEARCH AND SCHOLARSHIPS

Areas of Interest

- Network and service management
- Network virtualization and cloud computing
- Software-Defined Networking and Network Function Virtualization
- Resource management in wireless and mobile networks
- Resource management in Quantum Networks
- Network security and blockchains

PUBLICATIONS

Books (authored):

- [1] R. Ahmed and R. Boutaba. Collaborative Web Hosting: Challenges and Research Directions. Springer, ISBN # 978-3-319-03806-3. January 2014.
- [2] C. Fung and R. Boutaba. Intrusion Detection Networks: A Key to Collaborative Security. CRC Press (Taylor & Francis Group), an Auerbach Book, ISBN # 978-1-4665-6412-1. November 2013.

Books (edited):

- [3] N. Fonseca and R. Boutaba (editors), "Cloud Services, Networking, and Management". Wiley-IEEE Press, ISBN # 978-1118845943, April 2015.
- [4] R. Boutaba and A. Gallis. "Software-Defined Infrastructures for Networks, Clouds and Services". IEEE Press, ISBN # 978-1-4799-7898-4. April 2015.
- [5] S. Secci, M. Brunner, R. Boutaba and G. Pujolle (editors), "Cloud Networking". IEEE Press, November 2012.
- [6] R. Boutaba, M. Guizani and G. Hadjichristofi (editors), "Wireless Communications and Mobile Computing". IEEE Press, August 2012.
- [7] R. Boutaba, Y. Ghamri-Doudane and M. Saint-Hilaire (editors), "Wireless Networking". IEEE Press, October 2011.
- [8] S. Das, R. Boutaba and M. Guizani (editors), "Wireless Communications and Mobile Computing". IEEE Press, July 2011.
- [9] R. Boutaba, J. Schönwälder and Filip De Turck (editors), "Management of the Smart Grid". IEEE Press, April 2010.
- [10] R. Boutaba, M. Brunner, S. Shmidt, and L. Granville (editors), "Autonomic Communications and Network Management". IEEE Press, June 2009.
- [11] R. Boutaba, F. Kamoun, A. Mehaoua, S. Tabbane, M. Ulema, and B. Walp (editors). "Global Information Infrastructures". IEEE Press, ISBN: 978-1-4244-4624-7, June 2009.
- [12] R. Boutaba, M. Brunner, S. Shmidt, and L. Granville (editors), "Autonomic Communications and Network Management". IEEE Press. April 2008.
- [13] N. Agoulmine, R. Boutaba and A. Serhrouchni (editors), "Global Information Infrastructures". IEEE Press, ISBN: 1-4244-1375-3, 223 pages. July 2007.
- [14] R. Boutaba, M. Brunner and S. Shmidt (editors), "Autonomic Communications and Network Management". IEEE Press. May 2007.
- [15] R. Boutaba, K. Almeroth, R. Puigjaner, S. Shen and J Black (editors), "Networking". LNCS, Springer Verlag 2005 (1483 pages).
- [16] R. Boutaba (editor). "Enabling Pervasive Consumer Communications" IEEE Press, January 2005 (600 pages).
- [17] R. Boutaba and S. B. Kim (editors), "Managing Next Generation Convergence Network and Services", IEEE Press, April 2004 (900 pages).
- [18] J. N. de Souza and R. Boutaba (editors). Managing QoS in Multimedia Networks and Services. Kluwer Academic Publishers, 2000 (296 pages).
- [19] P. Dini, R. Boutaba and L. Logrippo (editors). Feature Interactions in Telecommunication Networks. IOS Press 1997 (373 pages).
- [20] R. Boutaba, A. Hafid (editors). Management of Multimedia Networks and Services. Chapman & Hall, 1997 (280 pages).

Chapters in books:

- [21] O. Salem, P. Ea, A. Mehaoua and R. Boutaba. Real-time Sign Language Recognition Based on Motion Gesture Identification Using Wireless Body Area Sensors. In Horizons in Computer Science Research. T. S. Clary (editor). Volume 16. pp. 87-116, Nova Science Publishers, Inc. 2024.

- [22] R. Boutaba, N. Shahriar, M. A. Salahuddin N. Limam. Managing Virtualized Networks and Services with Machine Learning. In *Communication Networks and Service Management in the Era of Artificial Intelligence and Machine Learning*, IEEE/Wiley Book Series, 2021.
- [23] L. Goldberg, T. Engel, J. Francois, R. Ahmed, S. R. Chowdhury and R. Boutaba. Network Configuration and Flow Scheduling for Big Data Applications. In *Networking for Big Data*. S. YU, X. Lin, J. Mistic, S. Shen (editors). CRC Press 2015.
- [24] R. Boutaba and N. Fonseca. Cloud Architectures, Networks, Services, and Management. In *Cloud Services, Networking, and Management*. N. Fonseca and R. Boutaba (editors). Wiley-IEEE Press, ISBN # 978-1118845943, April 2015.
- [25] F. Zhani and R. Boutaba. Survivability and Fault-tolerance in the Cloud. In *Cloud Services, Networking, and Management*. N. Fonseca and R. Boutaba (editors). Wiley-IEEE Press, ISBN # 978-1118845943, April 2015.
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- [1] H. J Tsang, M. A. Salahuddin, N. Limam R. Boutaba. A Meta-Reinforcement Learning Framework for Threat Mitigation in Software-Defined Networks. IEEE 48th Conference on Local Computer Networks (LCN). Daytona Beach, Florida, USA, October 2-5, 2023.
- [2] M. Zangooei, M. T. Arashloo, R. Boutaba. Towards Verifying Monotonicity and Robustness Properties for Domain-Specific DRL Algorithms. ICML 2nd Workshop on Formal Verification of Machine Learning. Honolulu, Hawaii, United States, July 28, 2023.
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- [7] A. Moayyedi, M. Ahmadi, M. A. Salahuddin, R. Boutaba, A. Saleh. Robust GNN-based 5G RAN/MEC Slicing and Admission Control in Metropolitan Networks. IEEE/IFIP Network Operations and Management Symposium (NOMS). Miami, USA, May 8 - 12, 2023.
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- [10] J. Ky, B. Mathieu, A. Lahmadi and R. Boutaba. Assessing Unsupervised Machine Learning solutions for Anomaly Detection in Cloud Gaming. IEEE CNSM Workshop on High-Precision, Predictable, and Low-Latency Networking (HiPNet), Thessaloniki, Greece, October 31 - November 4, 2022.
- [11] J. Ky, B. Mathieu, A. Lahmadi and R. Boutaba. Characterization and troubleshooting of cloud gaming applications on mobile networks. Network Traffic Measurement and Analysis Conference (TMA), Enschede, The Netherlands, June 27-28, 2022. *Poster. (Recipient of the Best Poster Award)*.
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- [13] Y. Dong, I. Goldberg, S. Gorbunov, and R. Boutaba. Astrape: Anonymous Payment Channels with Boring Cryptography. 20th International Conference on Applied Cryptography and Network Security (ACNS). Rome, Italy, June 20-23, 2022. **Acceptance rate: 23.78%**
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- [15] S. R. Chowdhury and R. Boutaba. Resource Management in Softwarized Networks. IEEE/IFIP Network Operations and Management Symposium (NOMS). Budapest, Hungary, April 25-29, 2022. *Dissertation Digest Paper (Recipient of the Best Dissertation Award)*.
- [16] M. Sulaiman, A. Moayyedi, M. A. Salahuddin, R. Boutaba, A. Saleh. Multi-Agent Deep Reinforcement Learning for Slicing and Admission Control in 5G-CRAN. IEEE/IFIP Network Operations and Management Symposium (NOMS). Budapest, Hungary, April 25-29, 2022. **Acceptance rate: 25.1% (Recipient of the Best Paper Award)**
- [17] S. S. Johari, N. Shahriar, M. Tornatore, R. Boutaba, A. Saleh. Anomaly Detection and Localization in NFV Systems: An Unsupervised Learning Approach. IEEE/IFIP Network Operations and Management Symposium (NOMS). Budapest, Hungary, April 25-29, 2022. **Acceptance rate: 25.1% (Recipient of the Best Student Paper Award)**
- [18] A. Laraba, J. François, I. Chrisment, S. R. Chowdhury, R. Boutaba. Detecting Multi-Step Attacks: A Modular Approach for Programmable Data Plane. IEEE/IFIP Network Operations and Management Symposium (NOMS). Budapest, Hungary, April 25-29, 2022. **Acceptance rate: 25.1%**
- [19] N. Saha, A. James, N. Shahriar, R. Boutaba, A. Saleh. Demonstrating Network Slice KPI Monitoring in a 5G Testbed. IEEE/IFIP Network Operations and Management Symposium (NOMS). Budapest, Hungary, April 25-29, 2022. *Demo Paper*.
- [20] R. Boutaba, N. Shahriar, M. A. Salahuddin, S. R. Chowdhury, N. Saha, A. James. AI-driven Closed-loop Automation in 5G and beyond Mobile Networks. In Proceedings of the 4th ACM SIGCOMM Workshop on Flexible Networks Artificial Intelligence Supported Network Flexibility and Agility. Online, August 23-27, 2021.
- [21] S. Taeb, N. Shahriar, S. R. Chowdhury, M. Tornatore, R. Boutaba, J. Mitra, M. Hemmati. Reoptimizing Network Slice Embedding on EON-enabled Transport Networks. IEEE/ACM/IFIP Conference on Network and Service Management (CNSM). Izmir, Turkey, October 25-29, 2021. **Acceptance rate: 19.4%**
- [22] I. Akbari, M.A. Salahuddin, S. Wen, N. Limam, R. Boutaba, B. Mathieu, S. Moteau, and S. Tuffin. A Look Behind the Curtain: Traffic Classification in an Increasingly Encrypted Web. ACM SIGMETRICS 2021. Beijing, China, June 14-18, 2021. **Acceptance rate: 14% (Recipient of the Kenneth C. Sevcik Outstanding Student Paper Award)**.
- [23] S. R. Chowdhury, R. Boutaba, and J. Francois. LINT: Accuracy-adaptive and Lightweight In-band Network Telemetry. IEEE/IFIP International Symposium on Integrated Network Management (IM). Bordeaux, France, May 17 - 21, 2021. **Acceptance rate: 24.1%**
- [24] N. Shahriar and R. Boutaba. Survivable virtual network embedding. IFIP/IEEE International Symposium on Integrated Network Management (IM). Bordeaux, France, May 17-21, 2021. *Dissertation Digest Paper. (Recipient of the Best Dissertation Digest Paper)*.
- [25] M. A. Salahuddin, M. F. Bari, H. A. Alameddine, V. Pourahmadi, R. Boutaba. Time-based Anomaly Detection using Autoencoder. IEEE/ACM/IFIP Conference on Network and Service Management (CNSM). Virtual Conference, November 2-6, 2020. **Acceptance rate: 19.8%**

- [26] M. Ghaznavi, E. Jalalpour, B. Wong, R. Boutaba, A. Mashtizadeh. Fault Tolerant Service Function Chaining. ACM SIGCOMM 2020. New York, USA, August 10-14, 2020. **Acceptance rate: 21%**
- [27] A. Laraba, J. Francois, I. Chrisment, S. R. Chowdhury, and R. Boutaba. Defeating Protocol Abuse with P4: An Application to Explicit Congestion Notification. IFIP Networking 2020 Conference. Paris, France, June 22-26, 2020. **Acceptance rate: 23.4%**
- [28] N. Salhab, R. Rahim, R. Langar, and R. Boutaba. Deep Neural Networks approach for Power Head-Room Predictions in 5G Networks and Beyond. IFIP Networking 2020 Conference. Paris, France, June 22-26, 2020. **Acceptance rate: 23.4%**
- [29] N. Salhab, R. Rahim, R. Langar, and R. Boutaba. Offloading Network Data Analytics Function to the Cloud with Minimum Cost and Maximum Utilization. IEEE International Conference on Computer Communications (ICC). Dublin, Ireland, June 7-11, 2020.
- [30] E. H. Bouzidi, A. Outtagarts, A. Hebbbar, R. Langar, and R. Boutaba. Online based learning for predictive end-to-end network slicing in 5G networks. IEEE International Conference on Computer Communications (ICC). Dublin, Ireland, June 7-11, 2020.
- [31] I. Akbari, E. Tahoun, M.A. Salahuddin, N. Limam, and R. Boutaba. ATMoS: Autonomous Threat Mitigation in SDN using Reinforcement Learning. IEEE/IFIP Network Operations and Management Symposium (NOMS). Budapest, Hungary, April 20-24, 2020. **Acceptance rate: 29.6%**
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- [33] N. Shahriar, M. Zulfiqar, S.R. Chowdhury, S. Taeb, M. Tornatore, R. Boutaba, J. Mitra, and M. Hemmati. Disruption-minimized Re-adaptation of Virtual Links in Elastic Optical Networks. OSA Optical Fiber Communication Conference (OFC). San Diego, CA, USA, March 8-12, 2020.
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- [35] N. Salhab, Rana Rahim-Amoud, Rami Langar, and R. Boutaba. Machine Learning based Resource Orchestration for 5G Network Slices. IEEE Global Communications Conference (GLOBECOM). Waikoloa, HI, USA, December 9-13, 2019.
- [36] N. Shahriar, S. Taeb, S.R. Chowdhury, M. Zulfiqar, M. Tornatore, R. Boutaba, J. Mitra, and M. Hemmati. Reliable Slicing of 5G Transport Networks with Dedicated Protection. IEEE/ACM/IFIP Conference on Network and Service Management (CNSM). Halifax, Canada, October 21-25, 2019. **Acceptance rate: 16.5%** (*Recipient of the Best Paper Award*).
- [37] H. Bian, T. Bai, M.A. Salahuddin, N. Limam, A. Abou Daya, and R. Boutaba. Host in Danger? Detecting Network Intrusions from Authentication Logs. IEEE/ACM/IFIP Conference on Network and Service Management (CNSM). Halifax, Canada, October 21-25, 2019. **Acceptance rate: 16.5%**
- [38] D. Harutyunyan, R. Fedrizzi, N. Shahriar, R. Boutaba, and R. Riggio. Orchestrating End-to-end Slices in 5G Networks. IEEE/ACM/IFIP Conference on Network and Service Management (CNSM). Halifax, Canada, October 21-25, 2019. **Acceptance rate: 16.5%**
- [39] S. Taeb, N. Shahriar, S.R. Chowdhury, M. Tornatore, R. Boutaba, J. Mitra, and M. Hemmati. Virtual Network Embedding with Path-based Latency Guarantees in Elastic Optical Networks. IEEE International Conference on Network Protocols (ICNP). Chicago, IL, USA, October 7-10, 2019. **Acceptance rate: 19.3%**
- [40] T. Bai, H. Bian, A. Abou Daya, M.A. Salahuddin, N. Limam and R. Boutaba. A Machine Learning Approach for RDP-based Lateral Movement Detection. IEEE Conference on Local Computer Networks (LCN). Osnabrück, Germany, October 14-17, 2019. **Acceptance rate: 28.9%**
- [41] B. Henry, S.R. Chowdhury, A. Lahmadi, R. Azais, J. Francois, and R. Boutaba. SPONGE: Software-Defined Traffic Engineering to Absorb Influx of Network Traffic. IEEE Conference on Local Computer Networks (LCN). Osnabrück, Germany, October 14-17, 2019. **Acceptance rate: 28.9%**
- [42] Y. Dong and R. Boutaba. Elasticoin: Low-Volatility Cryptocurrency with Proofs of Sequential Work. IEEE International Conference on Blockchain and Cryptocurrency (ICBC). Seoul, South Korea, May 14-17, 2019. **Acceptance rate: 19.2%**

- [43] D. Harutyunyan, N. Shahriar, R. Boutaba, and R. Riggio. Latency-Aware Service Function Chain Placement in 5G Mobile Networks. IEEE Conference on Network Softwarization (NetSoft). Paris, France, June 24-28, 2019. **Acceptance rate: 19.2% (Recipient of the Best Student Paper Award).**
- [44] S.R. Chowdhury, A. Anthony, H. Bian, T. Bai, and R. Boutaba. μ NF: A Disaggregated Packet Processing Architecture. IEEE Conference on Network Softwarization (NetSoft). Paris, France, June 24-28, 2019. **Acceptance rate: 19.2% (Recipient of the Best Paper Award).**
- [45] N. Shahriar, S. Taeb, S.R. Chowdhury, M. Tornatore, R. Boutaba, J. Mitra, M. Hemmati. Achieving a Fully-Flexible Virtual Network Embedding in Elastic Optical Networks. IEEE International Conference on Computer Communications (INFOCOM). Paris, France. April 29 - May 2, 2019. **Acceptance rate: 19.7%**
- [46] A. Abou Daya, M.A. Salahuddin, N. Limam, R. Boutaba. A Graph-Based Machine Learning Approach for Bot Detection. IFIP/IEEE Integrated Network Management Symposium (IM). Washington DC, USA. April 8-12, 2019. **Acceptance rate: 24.8%**
- [47] E. Jalalpour, M. Ghaznavi, R. Boutaba, T. Ahmed. TMAAS: Traffic Monitoring Analytics System Leveraging Machine Learning. IFIP/IEEE Integrated Network Management Symposium (IM). Washington DC, USA. April 8-12, 2019. **Acceptance rate: 24.8%**
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- [49] A. Anthony, S. Chowdhury, T. Bai, R. Boutaba, J. Francois. UNiS: A User-space Non-intrusive Workflow-aware Virtual Network Function Scheduler. IEEE/ACM/IFIP Conference on Network and Service Management (CNSM). Rome, Italy. November 5-9, 2018.
- [50] Y. Dong, W. Kim, R. Boutaba. Bitforest: a portable and efficient blockchain-based naming system. IEEE/ACM/IFIP Conference on Network and Service Management (CNSM) (Mini-conference). Rome, Italy. November 5-9, 2018.
- [51] Y. Dong, W. Kim, and R. Boutaba. Conifer: centrally-managed PKI with blockchain-rooted trust. IEEE International Conference on Blockchain (Blockchain-2018). Halifax, Canada, Jul 30, 2018 - Aug 3, 2018. **(Recipient of the Best Student Paper Award).**
- [52] E. Jalalpour, M. Ghaznavi, D. Migault, S. Preda, M. Pourzandi, R. Boutaba. Dynamic Security Orchestration for CDN Edge-Servers. IEEE Conference on Network Softwarization (NetSoft). Montreal, Canada, June 25-29, 2018 (Demo).
- [53] E. Jalalpour, M. Ghaznavi, D. Migault, S. Preda, M. Pourzandi, R. Boutaba. A Security Orchestration System for CDN Edge Servers. IEEE Conference on Network Softwarization (NetSoft). Montreal, Canada, June 25-29, 2018.
- [54] S. Ayoubi, S. R. Chowdhury, R. Boutaba. Breaking Service Function Chains with Khaleesi. IFIP Networking Conference. Zurich (Switzerland), May 14-16, 2018.
- [55] A. Azzouni, R. Boutaba, N.T.M. Trang, G. Pujolle. sOFTDP: Secure and Efficient Topology Discovery Protocol for SDN. IEEE/IFIP Network Operations and Management Symp. (NOMS). Taipei (Taiwan), April 23-27, 2018.
- [56] N. Shahriar, S.R. Chowdhury, R. Ahmed, M. Sharmin, R. Boutaba, B. Mthieu. Availability in P2P based online social networks. 4th Int. Conf.e on Networking, Systems and Security, Dhaka (Bangladesh), Dec. 18-20, 2017
- [57] S.R. Chowdhury, S. Ayoubi, R. Ahmed, N. Shahriar, R. Boutaba, J. Mitra, and L. Liu. MULE: Multi-Layer Virtual Network Embedding. IEEE/ACM/IFIP Conference on Network and Service Management (CNSM). Tokyo, Japan. November 26-30, 2017. **Acceptance rate: 17.6% (Recipient of the Best Paper Award).**
- [58] A. Alleg, T. Ahmed, M. Mosbah, R. Riggio, and R. Boutaba. Delay-aware VNF Placement and Chaining based on a Flexible Resource Allocation Approach. IEEE/ACM/IFIP Conference on Network and Service Management (CNSM). Tokyo, Japan. November 26-30, 2017.
- [59] A. Azzouni, R. Boutaba, G. Pujolle. NeuRoute: Predictive Dynamic Routing for Software-Defined Networks. 4th International Workshop on Management of SDN and NFV Systems. Tokyo, Japan. November 26-30, 2017.
- [60] C. Zidi, F. Bouabdallah, R. Boutaba, A. Mehaoua. MC-UWMAC: A Multi-Channel MAC Protocol for UnderWater Sensor Networks. International Conference on Wireless Networks and Mobile Communications (WINCOM). Rabat, Morocco, November 1-4, 2017.
- [61] A. Azzouni, T. M. T Nguyen, R. Boutaba, G. Pujolle. Limitations of OpenFlow Topology Discovery Protocol. 16th Annual Mediterranean Ad Hoc Networking Workshop (MedhocNet). Budva, Montenegro, June 28-30, 2017.

- [62] N. Shahriar, S. R. Chowdhury, R. Ahmed, A. Khan, R. Boutaba, J. Mitra, and L. Liu. Joint Backup Capacity Allocation and Embedding for Survivable Virtual Networks. IFIP Networking. Stockholm, Sweden, June 12-16, 2017.
- [63] C. Zidi, F. Bouabdallah, R. Boutaba and A. Mehaoua. Toward Avoiding Energy Holes in UnderWater Acoustic Sensor Networks. 13th International Wireless Communications and Mobile Computing Conference (IWCMC). Valencia, Spain. June 26-30, 2017.
- [64] S. R. Chowdhury, R. Ahmed, N. Shahriar, A. Khan, R. Boutaba, J. Mitra, and L. Liu. ReViNE: Reallocation of Virtual Network Embedding to Eliminate Substrate Bottlenecks. IEEE/IFIP Integrated Network Management Symposium (IM). Lisbon, Portugal. May 8 - 12, 2017. (Acceptance Ratio = 28.6%)
- [65] R. Mijumbi, S. Hasija, S. Davy, A. Davy, B. Jennings, and R. Boutaba. A Connectionist Approach to Dynamic Resource Management for Virtualised Network Functions. IEEE/ACM/IFIP Conference on Network and Service Management (CNSM). Montreal, Quebec, Canada. October 31 - November 04, 2016. **Acceptance rate: 14.7%** (***Highest Ranked Paper by the Reviewers and Runner Up for the Best Paper Award***).
- [66] N. Shahriar, R. Ahmed, A. Khan, S. R. Chowdhury, R. Boutaba, and J. Mitra. ReNoVatE: Recovery from Node Failure in Virtual Network Embedding. IEEE/ACM/IFIP Conference on Network and Service Management (CNSM). Montreal, Quebec, Canada. October 31 - November 04, 2016. **Acceptance rate: 14.7%** (***Second Highest Ranked Paper by the Reviewers and Runner Up for the Best Paper Award***).
- [67] A. R. Roy, S. R. Chowdhury, M. F. Bari, R. Ahmed, and R. Boutaba. Emulating an Infrastructure with EASE. IEEE/ACM/IFIP Conference on Network and Service Management (CNSM) (Mini-conference). Montreal, Quebec, Canada. October 31 - November 04, 2016.
- [68] A. Azzouni, O. Braham, T. M. T. Nguyen, G. Pujolle, R. Boutaba. Fingerprinting OpenFlow controllers: The first step to attack an SDN control plane. IEEE Global Communications Conference (GLOBECOM). Washington, DC, USA. December 4–8, 2016
- [69] S. Q. Zhang, Q. Zhang, A. Tizghadam; B. Park, H. Bennazadeh, A. Leon-Garcia, R. Boutaba. Sector: TCAM Space Aware Routing on SDN. 28th International Teletraffic Conference (ITC), IEEE, ACM. Würzburg (Germany), 12–16 September 2016.
- [70] N. Shahriar, R. Ahmed, S. R. Chowdhury, M. M. A. Khan, R. Boutaba, J. Mitra and F. Zeng. Connectivity-aware Virtual Network Embedding. IFIP Networking, Vienna (Austria), May 17-19, 2016. **Acceptance Ratio = 28.5%**.
- [71] S.R. Chowdhury, R. Ahmed, M. M. A. Khan, N. Shahriar, R. Boutaba, J. Mitra, and F. Zeng. Protecting Virtual Networks with DRONE. IEEE/IFIP Network Operations and Management Symposium (NOMS). Istanbul (Turkey), April 25-29, 2016. – **Acceptance Ratio = 25.3%** (***Runner Up for Best Paper Award***)
- [72] L. R. Bays, L. P. Gasparly, R. Ahmed, R. Boutaba. Virtual Network Embedding in Software-Defined Networks. IEEE/IFIP Network Operations and Management Symposium (NOMS). Istanbul (Turkey), April 25-29, 2016. **Acceptance Ratio = 25.3%**
- [73] L. Dolberg, J. François, S.R. Chowdhury, R. Ahmed, R. Boutaba, and Engel, T. A Generic Framework to Support Application-Level Flow Management in Software-Defined Networks. IEEE NetSoft 2016 (Short paper). Seoul, South Korea, June 6-10, 2016.
- [74] M. F. Bari, S. R. Chowdhury, R. Ahmed, and R. Boutaba. nf.io: A File System Abstraction for NFV Orchestration. IEEE Conference on Network Function Virtualization and Software Defined Networks (NFV-SDN), San Francisco (USA), November 18-21, 2015.
- [75] M. M. A. Khan, N. Shahriar, R. Ahmed, and R. Boutaba. SiMPLE: Survivability in Multi-Path Link Embedding. IEEE/ACM/IFIP International Conference on Network and Service Management (CNSM), Barcelona (Spain), November 9-13, 2015. **Acceptance rate: 17%** (***Runner Up for Best Paper Award***)
- [76] M. F. Bari, S. R. Chowdhury, R. Ahmed, and R. Boutaba. On Orchestrating Virtual Network Functions. IEEE/ACM/IFIP International Conference on Network and Service Management (CNSM), Barcelona (Spain), November 9-13, 2015.
- [77] M. Ghaznavi, A. Khan, N. Shahriar, K. Alsubhi, R. Ahmed, R. Boutaba. Elastic Virtual Network Function Placement. IEEE International Conference on Cloud Networking (CloudNet). Niagara Falls (Canada), October 5-7, 2015.
- [78] M. F. Bari, S. R. Chowdhury, R. Ahmed and R. Boutaba. nf.io: A File System Abstraction for NFV Orchestration. ACM SIGCOMM 2015, London (UK), August 17-21, 2015. (Demo).

- [79] Q. Zhang, S. Zhang, A. Leon-Garcia and R. Boutaba. Aurora: Adaptive Block Replication in Distributed File Systems. In the 35th International Conference on Distributed Computing Systems (ICDCS), Columbus, Ohio (USA), June 29-July 02, 2015.
- [80] D. Marcon, M. Neves, R. Oliveira, L. Bays, R. Boutaba, L. Gaspary, and M. Barcellos. IoNCloud: Exploring Application Affinity to Improve Utilization and Predictability in Datacenters. In the IEEE International Conference on Computer Communications (ICC). London (UK), June 8-12, 2015.
- [81] Z. Liu, Q. Zhang, F. Zhani, R. Boutaba, Y. Liu, Z. Gong. DREAMS: Dynamic Resource Allocation for MapReduce with Data Skew. In IFIP/IEEE Integrated Network Management Symposium (IM). Ottawa, Canada, May 27-31, 2015. **Acceptance rate: 27%**
- [82] J. Li, J. Xiao, J. Hong and R. Boutaba. FSM-based Wi-Fi Power Estimation Method for Smart Devices. In IFIP/IEEE Integrated Network Management Symposium (IM). Ottawa, Canada, May 27-31, 2015. **Acceptance Ratio: 27%**
- [83] S. R. Chowdhury, F. Bari, R. Ahmed and R. Boutaba. Cassandra in the Wild. In IFIP/IEEE Integrated Network Management Symposium (IM). Ottawa, Canada, May 27-31, 2015. **Experience Track.**
- [84] A. Raza, R. Ahmed and R. Boutaba. URL Forwarding for NAT Traversal. In IFIP/IEEE Integrated Network Management Symposium (IM). Ottawa, Canada, May 27-31, 2015.
- [85] A. Amokrane, F. Zhani, Q. Zhang, R. Langar, R. Boutaba, G. Pujolle. On Satisfying Green SLAs in Distributed Clouds. In IEEE/IFIP International Conference on Network and Service Management (CNSM), Rio de Janeiro (Brazil), November 17-21, 2014. **Acceptance rate: 17%. Best Paper Award**
- [86] R. Ahmed, F. Bari, R. Haque, R. Boutaba and B. Mathieu. DEWS: A Decentralized Engine for Web Search. In IEEE/IFIP International Conference on Network and Service Management (CNSM), Rio de Janeiro (Brazil), November 17-21, 2014. Mini-conference Paper.
- [87] J. Li, J. Xiao, H. Azzouz, J. Hong and R. Boutaba. PowerGuide: Accurate Wi-Fi Power Estimator for Smartphones. The 16th Asia-Pacific Network Operations and Management Symposium (APNOMS). Taiwan, September 17-19, 2014.
- [88] C. Zidi, F. Bouabdallah and R. Boutaba. Avoiding Energy Holes in UnderWater Acoustic Sensor Networks. In IEEE Global Communications Conference (GLOBECOM). Austin, TX (USA), December 8–12, 2014.
- [89] J. Li, J. Xiao, H. Azzouz, J. Hong and R. Boutaba. PowerGuide: Accurate Wi-Fi Power Estimator for Smartphones. The 16th Asia-Pacific Network Operations and Management Symposium (APNOMS), Taiwan, September 17-19, 2014.
- [90] A. R. Roy, M. F. Bari, M. F. Zhani, R. Ahmed, and R. Boutaba. DOT: Distributed OpenFlow Testbed. ACM SIGCOMM 2014, Chicago, Illinois, August 17-22, 2014. (Demo).
- [91] M. F. Bari, M. F. Zhani, Q. Zhang, R. Ahmed, and R. Boutaba. CQNCr: Optimal VM Migration Planning in Cloud Data Centers. IFIP Networking 2014 Conference. Trondheim (Norway), June 2-4, 2014.
- [92] R. Ahmed, S. R. Chowdhury, A. Pokluda, M. F. Bari, R. Boutaba and B. Mathieu. pWeb: A Personal Interface to the World Wide Web. IFIP Networking 2014 Conference. Trondheim (Norway), June 2-4, 2014.
- [93] Q. Zhang, M. F. Zhani, M. Jabri, and R. Boutaba. Venice: Reliable Virtual Data Center Embedding in Clouds. Accepted in IEEE International Conference on Computer Communications (INFOCOM), Toronto, Ontario, Canada, April 27 - May 2, 2014. **Acceptance rate: 18%**
- [94] Q. Zhang and R. Boutaba. Dynamic Workload Management in Heterogenous Cloud Computing Environments. In IEEE/IFIP Network Operations and Management Symposium (NOMS), Karakow (Poland), May 5-9, 2014. (Dissertation Digest Paper).
- [95] J. Li, J. Xiao, H.N.M. Nguyen, J. Hong and R. Boutaba. Energy Efficient Wi-Fi Management for Smart Devices. Accepted in IEEE/IFIP Network Operations and Management Symposium (NOMS), Karakow (Poland), May 5-9, 2014. **Acceptance rate: 26%**
- [96] S. Chowdhury, C. Adam, F. Wu, J. Rofrano and R. Boutaba. Managing the File System from the Kernel. Accepted in IEEE/IFIP Network Operations and Management Symposium (NOMS), Karakow (Poland), May 5-9, 2014. **Acceptance rate: 26%**
- [97] S. Chowdhury, F. Bari F, R. Ahmed and R. Boutaba. PayLess: A Low Cost Network Monitoring Framework for Software Defined Networks. Accepted in IEEE/IFIP Network Operations and Management Symposium (NOMS), Karakow (Poland), May 5-9, 2014. **Acceptance rate: 26%**

- [98] C. Fung, D. Lam and R. Boutaba. RevMatch: An Efficient and Robust Decision Model for Collaborative Malware Detection. Accepted in IEEE/IFIP Network Operations and Management Symposium (NOMS), Karakow (Poland), May 5-9, 2014. **Acceptance rate: 26%**
- [99] A. R. Roy, M. F. Bari, M. F. Zhani, R. Ahmed, and R. Boutaba. Design and Management of DOT: A Distributed OpenFlow Testbed. Accepted in IEEE/IFIP Network Operations and Management Symposium (NOMS), Karakow (Poland), May 5-9, 2014. **Acceptance rate: 26%**
- [100] R. Esteves, L. Z. Granville, M. F. Zhani, and R. Boutaba. Evaluating Allocation Paradigms for Multi-Objective Adaptive Provisioning in Virtualized Networks. Accepted in IEEE/IFIP Network Operations and Management Symposium (NOMS), Karakow (Poland), May 5-9, 2014. **Acceptance rate: 26%**
- [101] A. Amokrane, R. Langar, R. Boutaba and G. Pujolle. Online Flow-based Energy Efficient Management in Wireless Mesh Networks. Accepted in the IEEE Global Communications Conference (GLOBECOM). Atlanta, GA (USA), December 9–13, 2013.
- [102] F. Bari, S. R. Chowdhury, R. Ahmed, and R. Boutaba. PolicyCop: An Autonomic QoS Policy Enforcement Framework for Software Defined Networks. In IEEE Software Defined Networks for Future Networks and Services (SDN4FNS), Italy, Trento, November 11-13, 2013.
- [103] C. Buyukkoc, M. Ulema, N. Amogh, L. Jiang Xie, R. Boutaba, and M. Can Vuran. Drivers for the Ecosystem of Software Defined Networks. In IEEE Software Defined Networks for Future Networks and Services (SDN4FNS), Italy, Trento, November 11-13, 2013.
- [104] J. Li, J. Xiao, H. N. M. Nguyen, J. W. Hong and R. Boutaba. BreezChirp: Energy Efficient Wi-Fi Bandwidth Estimator for Smartphones. In 4th International Conference on Network of the Future (NoF), IEEE. Pohang (South Korea), October 23-25, 2013.
- [105] Md. F. Bari, A. R. Roy, S. R. Chowdhury, Q. Zhang, M. F. Zhani, R. Ahmed and R. Boutaba. Dynamic Controller Provisioning in Software Defined Networks. In IEEE/ACM/IFIP Int. Conf. on Network and Service Management (CNSM), Zurich, Switzerland, Oct. 14-18, 2013. **Acceptance rate: 18% – Runner Up for Best Paper Award**
- [106] F. Zhou, J. Liu, G. Simon and R. Boutaba. Joint Optimization for the Delivery of Multiple Video Channels in Telco-CDN. In IEEE/ACM/IFIP International Conference on Network and Service Management (CNSM), Zurich (Switzerland), October 14-18, 2013. (Short Paper)
- [107] C. Fung, D. Lam and R. Boutaba. REM: A Robust and Efficient Decision Model for Collaborative Malware Detection. 22nd USENIX Security Symposium. Washington, DC. (USA), August 14-16, 2013. (Short paper)
- [108] N. Shahriar, S. R. Chowdhury, M. Sharmin, R. Ahmed, R. Boutaba and B. Mathieu. Ensuring Beta-Availability in P2P Social Networks. In 5th International Workshop on Hot Topics in Peer-to-peer computing and Online Social neTworking (HotPOST) held in conjunction with IEEE ICDCS 2013. Philadelphia (USA), July 8, 2013. **Recipient of the Best Paper Runner-Up Award.**
- [109] Q. Zhang, M. F. Zhani, R. Boutaba, and J. L. Hellerstein. HARMONY: Dynamic Heterogeneity-Aware Resource Provisioning in the Cloud. In the 33rd International Conference on Distributed Computing Systems (ICDCS), Philadelphia (USA), July 08-11, 2013. **Acceptance rate: 13%**
- [110] M. Hkimi, R. Langar, S. Secci, R. Boutaba and G. Pujolle. Demands Rescaling for Resource and Power Allocation in Cooperative Femtocell Networks. In the IEEE International Conference on Computer Communications (ICC). Budapest (Hungary), June 9-13, 2013.
- [111] C. Fung and R. Boutaba. Design and Management of Collaborative Intrusion Detection Networks. In IFIP/IEEE Integrated Network Management Symposium (IM), Ghent (Belgium), May 27-31, 2013. (Dissertation Digest Paper). **Recipient of the Best Dissertation Award.**
- [112] M. Rabbani, R. Esteves, M. Podlesny, G. Simon, L. Granville and R. Boutaba. On Tackling Virtual Data Center Embedding Problem. In IFIP/IEEE Integrated Network Management Symposium (IM). Ghent, Belgium, May 27-31, 2013. **Acceptance rate: 27%**
- [113] R. Esteves, L. Granville, H. Bannazadeh and R. Boutaba. Paradigm-based Adaptive Provisioning in Virtualized Data Centers. In IFIP/IEEE Integrated Network Management Symposium (IM). Ghent, Belgium, May 27-31, 2013. **Acceptance rate: 27%**
- [114] F. Zhani, Q. Zhang, G. Simon and R. Boutaba. VDC Planner: Dynamic Migration-Aware Virtual Data Center Embedding for Clouds. In IFIP/IEEE Integrated Network Management Symposium (IM). Ghent, Belgium, May 27-31, 2013. **Acceptance rate: 27%**

- [115] R. Ahmed, F. Bari, S. Chowdhury, M. Rabbani, R. Boutaba and B. Mathieu. AlphaRoute: A Name Based Routing Scheme for Information Centric Networks. In 32nd IEEE International Conference on Computer Communications (INFOCOM). Turin, Italy, Apr. 14-19, 2013. **Acceptance rate: 19%**
- [116] S. Hoteit, S. Secci, R. Langar, G. Pujolle and R. Boutaba. A Bankruptcy Game Approach for Resource Allocation in Cooperative Femtocell Networks. In the IEEE Global Communications Conference (GLOBECOM). Anaheim, California (USA), December 3–7, 2012.
- [117] A. Hatoum, N. Aitsaadi, R. Langar, R. Boutaba and G. Pujolle. QoS-based Power Control and Resource Allocation in OFDMA Femtocell Networks. In the IEEE Global Communications Conference (GLOBECOM). Anaheim, California (USA), December 3–7, 2012.
- [118] K. Alsubhi, F. Zhani and R. Boutaba. Embedded Markov Process based Model for Performance Analysis of Intrusion Detection and Prevention System. In the IEEE Global Communications Conference (GLOBECOM). Anaheim, California (USA), December 3–7, 2012.
- [119] K. Saleh and R. Boutaba. Estimating Service Response Time for Elastic Cloud Applications. In Proc. of 1st IEEE International Conference on Cloud Networking (CloudNet). Paris (France), November 28-30, 2012.
- [120] J. Xiao, J. Li, R. Boutaba and J. Hong. Comfort-Aware Home Energy Management Under Market-Based Demand-Response. In Proc. of 8th IEEE/ACM/IFIP Int. Conference on Network and Service Management (CNSM). Las Vegas (USA), October 22-26, 2012. **Acceptance rate: 15%**
- [121] A. Amokrane, R. Langar, R. Boutaba and G. Pujolle. A Green Framework for Energy Efficient Management in TDMA-based Wireless Mesh Networks. In Proc. of 8th IEEE/ACM/IFIP Int. Conference on Network and Service Management (CNSM) Mini-conference. Las Vegas (USA), October 22-26, 2012.
- [122] Y. Huang, J. Xiao, J. W-K. Hong, A. Mehaoua and R. Boutaba. Event-based Estimation of User Experience for Network Video Streaming. The 14th Asia-Pacific Network Operations and Management Symposium (APNOMS). Seoul (Korea), September 25-27, 2012.
- [123] J. Li, J. Xiao, J. W-K. Hong and R. Boutaba. Application-Centric Wi-Fi Energy Management on Smart Phone. The 14th Asia-Pacific Network Operations and Management Symposium (APNOMS). Seoul (Korea), September 25-27, 2012.
- [124] Q. Zhang, F. Zhani, S. Zhang, Q. Zhu, R. Boutaba, and J.L. Hellerstein. Dynamic Energy-Aware Capacity Provisioning for Cloud Computing Environments. The 9th International Conference on Autonomic Computing (ICAC12). San Jose, California (USA), September 17-21, 2012. **Acceptance rate: 24%**
- [125] S. Waharte, A. Golynski and R. Boutaba. On the Complexity of Routing in Wireless Multihop Network. In Proc. of IEEE International Conference on Wireless Communications and Mobile Computing (IWCMC). Lymassol (Cyprus), August 27-31, 2012.
- [126] J. Li, J. Xiao, J. W-K Hong and R. Boutaba. Energy Efficient Wi-Fi Management for Smart Devices. 4th International Symposium on IT Convergence Engineering, Korea Telecom Advanced Institute of Technology. Soul (Korea), July 12-13, 2012. **Best Poster Award.**
- [127] J-Y Chung, J. Hyun, J. W-K Hong and R. Boutaba. Datacenter Traffic Monitoring Using Traffic Mirroring of Virtual Switch. 4th International Symposium on IT Convergence Engineering, Korea Telecom Advanced Institute of Technology. Seoul (Korea), July 12-13, 2012.
- [128] Q. Zhang, Q. Zhu, F. Zhani and R. Boutaba. Dynamic Service Placement in Geographically Distributed Clouds. In Proc. of 32nd International Conference on Distributed Computing Systems (ICDCS), Macau, China, June 18-21, 2012. **Acceptance rate: 13% – Featured in a wordpress.com blog and the IEEE Newsletter on Sustainable Computing (October 2012).**
- [129] T. Tran, I. Aib, E. Al-Shaer and R. Boutaba. An Evasive Attack on SNORT Flowbits. 13th IEEE/IFIP Network Operations and Management Symposium (NOMS), Maui, Hawaii, USA, Apr. 16-20, 2012. **Acceptance rate: 26.2%**
- [130] A. Kwon, J. Xiao, S. Seo, J. Hong and R. Boutaba. The Effect of Network Performance on Perceived Video Quality and User Experience in H.264/AVC. 13th IEEE/IFIP Network Operations and Management Symposium (NOMS 2012) Mini-conference, Maui, (USA), April 16-20, 2012.
- [131] N. Shahriar, M. Sharmin, R. Ahmed, M. M. Rahman, R. Boutaba and B. Mathieu. Diurnal availability for peer-to-peer systems. The IEEE Consumer Communications and Networking Conference (CCNC). Las Vegas, NV (USA), January 14-17, 2012.

- [132] Q. Zhang, Q. Zhu and R. Boutaba. Dynamic Resource Allocation for Spot Markets in Cloud Computing Environments. In Proc. of the 4th IEEE International Conference on Utility and Cloud Computing (UCC 2011), Melbourne (Australia), December 5-8, 2011.
- [133] C. Fung, Q. Zhu, R. Boutaba, and T. Basar. SMURFEN: A Knowledge Sharing Collaborative Intrusion Detection Network. In the 18th ACM Conference on Computer and Communications Security (CCS). Chicago (USA), October 17-21, 2011. Poster.
- [134] Q. Zhu, C. Fung, R. Boutaba, T. Basar. A Game-Theoretic Approach to Knowledge Sharing in Distributed Collaborative Intrusion Detection Networks: Fairness, Incentives and Security. In Proc. 50th IEEE Conference on Decision and Control and European Control Conference, Orlando (USA), Dec. 12-15, 2011.
- [135] K. Alsubhi, Y. Alhazmi, N. Bouabdallah and R. Boutaba. Rule Mode Selection in Intrusion Detection and Prevention Systems. IEEE Global Communications Conference (GLOBECOM). Houston (USA), Dec. 5–9, 2011.
- [136] H. Saleet, S. Naik, R. Langar, R. Boutaba, A. Nayak, and V. Srivastava. Performance Modeling of Routing Dependability in Home Networks. In the IEEE Global Communications Conference (GLOBECOM). Houston (USA), December 5–9, 2011.
- [137] L. Cheng, R. Boutaba, and Q. Zhang. Mitigating the Negative Impact of Preemption On Heterogeneous MapReduce Workloads. In the 7th International Conference on Network and Service Management (CNSM). Paris (France), 24-28 October 2011. **Acceptance rate: 14.6%**
- [138] C. J. Fung, R. Boutaba, Q. Zhu, and T. Basar. SMURFEN: A Framework of Knowledge Sharing for Collaborative Intrusion Detection. In the 7th International Conference on Network and Service Management (CNSM), Mini-conference. Paris (France), 24-28 October, 2011.
- [139] H. Jiajia, B. Ishibashi, R. Boutaba and D-E. Meddour. Routing internal traffic in multiple gateway Wireless Mesh Networks. In Proc. 4th IFIP Wireless Days Conference. Niagara Falls (Canada), 10-12 October 2011
- [140] Q. Zhang, J. Hellerstein and R. Boutaba. Characterizing Task Usage Shapes in Google’s Compute Clusters. In the 5th Workshop on Large Scale Distributed Systems and Middleware (held in conjunction with VLDB’2011). Seattle (USA), September 2-3, 2011.
- [141] MF. Bari, MR. Haque, R. Ahmed, R. Boutaba and B. Mathieu. Persistent Naming for P2P Web Hosting. In the IEEE International Conference on Peer-to-Peer Computing (P2P). Kyoto (Japan). August 31 to September 2, 2011. **Acceptance rate: 29%**
- [142] F. Bouabdallah and R. Boutaba. A Distributed OFDMA Medium Access Control for Underwater Acoustic Sensors Networks. In the IEEE International Conference on Computer Communications (ICC). Kyoto (Japan), June 5-9, 2011.
- [143] A. Hatoum, N. Aitsaadi, R. Langar, R. Boutaba and G. Pujolle. FCRA: Femtocell Clusterbased Resource Allocation Scheme for OFDMA Networks. In the IEEE International Conference on Computer Communications (ICC). Kyoto (Japan), June 5-9, 2011.
- [144] K. Alsubhi, N. Bouabdallah and R. Boutaba. Performance Analysis in Intrusion Detection and Prevention Systems. In the Proc. of the IFIP/IEEE Integrated Network Management Symposium (IM). Dublin (Ireland), 23-27 May 2011. **Acceptance rate: 29.4%**
- [145] Q. Zhang, E. Gürses, R. Boutaba, and J. Xiao. Dynamic Resource Allocation for Spot Markets in Clouds. In proceedings of the 11th USENIX conference on Hot-topics in management of internet, cloud, and enterprise networks and services (Hot-ICE '11), Boston (USA). March 30–April 1, 2011.
- [146] J. Li, J-Y. Chung, J. Xiao, R. Boutaba and J. W-K Hong. On The Design and Implementation of a Home Energy Management System. In the Proc. of the IEEE Symposium on Wireless and Pervasive Computing (ISWPC). Hong Kong (China), 23-25 February 2011
- [147] R. Langar, S. Njima, N. Bouabdallah, R. Boutaba, and G. Pujolle. Towards Efficient Use of Radio Resources in Single Channel Wireless Mesh Networks. In Proc. of the IEEE Global Telecommunications Conference (GLOBECOM), IEEE Press, Miami (USA), 6-10 Dec. 2010.
- [148] H. Saleet, R. Langar, S. Naik, R. Boutaba, A. Nayak, and N. Goel. QoS Support in Delay Tolerant Vehicular Ad Hoc Networks. In Proc. of the IEEE Global Telecommunications Conference (GLOBECOM), IEEE Press, Miami (USA), 6-10 December 2010.

- [149] C. J. Fung, J. Zhang, and R. Boutaba. Effective Acquaintance Management for Collaborative Intrusion Detection Networks. In the 6th International Conference on Network and Service Management (CNSM). Niagara Falls (Canada), 25-29 October 2010. **Acceptance rate: 15.3% – Recipient of the Best Student Paper Award.**
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- [391] T. Ahmed, A. Mehaoua and R. Boutaba, Interworking between SIP and MPEG-4 DMIF, IETF Internet Draft, draft-ahmed-dmif-sip-00.txt. September 2001 (16 Pages). *Internet Draft*
- [392] R. Boutaba and A. Polyraakis, COPS-PR with Meta-Policy Support, IETF Internet Draft, draft-boutaba-copsprmp-00.txt. April 2001 (24 pages). *Internet Draft*

Patents:

- [1] Blockchain Based Secure Naming and Update Verification. US Patent Application No. 17,876,482 B2. Issued February 27, 2024. **Divisional Patent**
- [2] Enhanced Anomaly Detection for Distributed Networks Using Federated Learning with Outlier Exposure. US Patent No. US18/562,496. Issued November 11, 2022

- [3] Blockchain Based Secure Naming and Update Verification. US Patent No. 11,438,139 B2. Issued September 6, 2022.
- [4] System and method for elastic optical networks. US Patent No. 11,146,349 B2. Issued October 12, 2021. **Used Patent**
- [5] System and Method for Joint Embedding and Backup Provisioning in Virtual Networks. US Patent No. 10,873,502 B2. Issued December 2020. **Used Patent**
- [6] Methods and systems for failure recovery in a virtual network environment. US Patent No. 10,505,840. Issued December 10, 2019. **Used Patent**
- [7] Method and system for latency-aware embedding of a virtual network onto a substrate optical network. US Patent Application No. 16/600,103. Filed October 11, 2019
- [8] Dedicated Protection for Virtual Network Embedding. US Patent No. 10,313,195. Issued June 04, 2019. **Used Patent**
- [9] Energy-Efficient Method and Apparatus for Application-Aware Packet Transmission. US Patent No. 9,832,282. Issued November 28, 2017
- [10] Method and system for reliability-aware embedding of a virtual network onto an elastic optical network. US Patent No. 10,841,183. Issued November 17, 2020. **Used Patent**
- [11] System and Method for Multi-layer Virtual Network Embedding. US Patent Application No. 15/815,871. Filed November 17, 2017.
- [12] Connectivity-Aware Virtual Network Embedding. US Patent No. 9,813,287. Issued November 7, 2017. **Used Patent**
- [13] Apparatus for Monitoring Video Quality and Method Thereof. Korean Patent No. 1013277090000 Issued Oct. 31, 2013.
- [14] Stochastic Call Admission Control for Wireless Cellular Packet Networks. Serial Number 10/958,170. Filed in the US Patent and Trademark Office, October 4, 2004. Issued Mar 31, 2009. Patent # 7,512,068. **Used Patent**
- [15] Software Fault Management System. Serial Number 08/918,100. Filed in the US Patent and Trademark Office, August 21, 1997. Issued Jan 4, 2000. Patent # 6,012,152. **Used Patent**

Technology Transfer

- [16] pWeb. Decentralized Web Hosting System and Software. Transferred to Orange Labs. in 2013
- [17] CyberPlanner. Network Planning Software, Licensed to Bell Canada in 2003

Software Distributions

- [1] open5gs-k8s: Cloud-native 5G core network deployment using Open5GS on Kubernetes (**Open Source**)
<https://github.com/niloysh/open5gs-k8s>
- [2] 5G-MONARCH: platform for monitoring and management of 5G network slices (**Open Source**)
<https://github.com/niloysh/5g-monarch>
- [3] NWDAF: closed-loop Network Data Analytics Function (**Open Source**)
<https://github.com/nrg-uw/closed-loop-nwdaf>
- [4] DND Stay Connected: connectivity for defence and public safety scenarios (**Open Source**)
<https://github.com/nrg-uw/DND-stay-connected>
- [5] Your portal to the outside world. (**Open Source**)
- [6] GEPH: Your portal to the outside world. (**Open Source**)
<https://github.com/bunsim/geph/>
- [7] nf-io: file system abstraction for VNF management. (**Open Source**)
- [8] <http://faizulbari.github.io/nf.io/>
- [9] DOT: Distributed Openflow Testbed (**Open Source**)

<https://github.com/dothub/dot>

- [10] pWeb: Host Yourself (**Open Source**)
<http://pwebproject.net/>
- [11] Google Cloud Demand and Usage Traces (**Processed Data Traces**)
<http://rboutaba.cs.uwaterloo.ca/Cluster-statistics-OneMonth.zip>
- [12] Algorizmi (**Open Source**)
<http://sourceforge.net/projects/algorizmi/>
- [13] pMeasure (**Open Source**)
<http://bcr2.uwaterloo.ca/~w7liu/pmeasure.html>
- [14] Waterloo User Controlled Lightpaths (**Shareware**)
<http://bcr2.uwaterloo.ca/~canarie>
- [15] Realistic Mobility Model (**Open Source**)
<http://bcr2.uwaterloo.ca/~jcapka/index.htm>
- [16] MPEG Insight Project (**Open Source**)
<http://sourceforge.net/projects/mip/>
- [17] Meta-Policy Management Tool (**Open Source**)
<http://sourceforge.net/projects/metapib/>

Datasets

- [1] Intrusion Detection Provenance Graph Dataset
<https://rboutaba.cs.uwaterloo.ca/Downloads/compressed>
- [2] Federated Learning for DDoS Detection Dataset
<https://rboutaba.cs.uwaterloo.ca/Downloads/UW-FL-Dataset.zip>
- [3] Orange Encrypted Web Traffic Dataset
<https://rgw.cs.uwaterloo.ca/IAKBARIA-bucket0/sigmetrics-uwaterloo-2020.tgz>
- [4] Google Data Centre Demand and Usage Traces
<https://github.com/nrg-uw/DND-stay-connected>

GRANT RECORD

Total Research Funds: \$ 33,747,748

As Principal Investigator:

Source	Title	Amount	Period
MITACS	“5G-AUTO: Enabling Automation in 5G and Beyond Networks”	\$ 600,000	2026-2030
NSERC Alliance Grant	“5G-AUTO: Enabling Automation in 5G and Beyond Networks”	\$ 1,000,000	2026-2030
Department of National Defence	“Cross-Layer Innovations for Seamless and Resilient NTN-TN Integration”	\$ \$503,870	2026-2027
Department of National Defence	“Seamless Cross-Domain Handover for Resilient Communications over 5G Networks”	\$ 200,000	2025-2027
Canada Research Chair Tier 1	“Network Intelligence”	\$ 1,400,000	2025-2032
Rogers	“Network Resilience”	\$ 200,000	2025-2027
Rogers	“Chair in Network Automation”	\$ 838,462	2024-2028
CANARIE	“Joint Security Project – Data Aggregation &	\$40,000	2024

	Visualization Tools – Extended Maintenance”		
CANARIE	“Joint Security Project – Data Aggregation & Visualization Tools – Extended Maintenance”	\$91,894	2023
CFI JELF	“Timely and privacy-preserving threat intelligence using machine learning”	\$85,000	2023-2024
Department of National Defence	“DnD IDEaS 5G Security MicroNet”	\$1,500,000	2022-2024
NSERC Alliance Grant	“5G-Leap: Flexible Open RAN Platform for 5G and beyond networks”	\$200,000	2022-2024
MITACS	“5G-Leap: Flexible Open RAN Platform for 5G and beyond networks”	\$200,000	2022-2024
Rogers	“5G-Leap: Flexible Open RAN Platform for 5G and beyond networks”	\$200,000	2022-2024
CANARIE	“University of Waterloo Intrusion Detection System Extension”	\$250,000	2022
NUCC (National Research Council of Canada – UW Centre)	“Integrated Satellite-Terrestrial Network Security”	\$180,000	2022-2025
CANARIE	“Joint Security Project – Data Aggregation & Visualization Tools – Extended Maintenance”	\$70,000	2021
MITACS	“5G-Elite: Data-drive Orchestration, operation, and Management of 5Gnetwork slices”	\$450,000	2020-2023
Rogers	“5G-Elite: Data-drive Orchestration, operation, and Management of 5Gnetwork slices”	\$450,000	2020-2023
CANARIE	“Joint Security Project – Data Aggregation & Visualization Tools”	\$240,000	2020
MITACS Elevate	“Edge security” (PDF for H Alamuddin)	\$130,000	2019-2021
Department of National Defense (DND Discovery Supplement)	“Orchestration and Management of Softwarized Networks”	\$120,000	2019-2021
NSERC Discovery Grant	“Orchestration and Management of Softwarized Networks”	\$445,000	2019-2023
NSERC CRD Grant	“Securing elastic radio access networks”	\$76,738	2019-2021
Ericsson Canada	“Securing elastic radio access networks”	\$50,000	2019-2021
NSERC CRD Grant	“Autonomous Optical Network Engine”	\$148,000	2018-2020
Huawei Canada	“Autonomous Optical Network Engine”	\$230,000	2018-2019
NSERC CRD Grant	“Data-Driven Software-Defined Security”	\$516,000	2018-2021
Royal Bank of Canada (RBC)	“Data-Driven Software-Defined Security”	\$605,000	2018-2021
CANARIE	“Security Data Analytics Platform”	\$112,518	2018
NSERC CRD Grant	“Network Virtualization Engine”	\$152,958	2015-2016
Huawei	“Network Virtualization Engine”	\$190,000	2014-2015
NSERC Discovery Grant	“Automated Cloud Management ”	\$310,000	2014-2019
MITACS Accelerate	“Integrated Fault Management in SDN”	\$13,333	2013
IBM Faculty Award	“Service Automation”	\$26,000	2013
NSERC Strategic Project Grant	“PWeb: Serverless Web Hosting”	\$387,000	2012-2014
MITACS Elevate	“Distributed Web Search” (PDF for R. Ahmed)	\$55,000	2012
NSERC Equipment Grant	“Experimental Cluster for Cloud Computing”	\$137,000	2010
Google Research Award	“Cost and benefits of process migration in Cloud”	\$99,000	2010
NSERC Discovery Grant	“Fundamentals of Automated Network Management”	\$350,000	2009-2014
NSERC Discovery Accelerator	“Fundamentals of Automated Network Management”	\$120,000	2009-2012
Cisco Systems	“End-to-end Network Virtualization”	\$75,000	2009
NSERC Special Research Opportunity	“Autonomic Network Architecture”	\$420,000	2006-2009
NSERC Strategic Project Grant	“Proactive Security for Next-Generation Firewalls	\$390,000	2006-2009

	”		
ORDCF (STG- Visionary Res.)	“Overlay Sensor Networks”	\$15,000	2007
Bell Canada	“Metrics composition software”	\$30,000	2006
NSERC Equipment Grant	“Network of Sensors ”	\$71,466	2005
CITO	“Network planning and monitoring ”	\$212,896	2004-2005
CITO	“Wireless Mesh Networks ”	\$199,800	2004-2005
Bell Canada	“CyberPlanner: IP network monitoring and planning”	\$230,000	2004-2005
NSERC CRD Grant	“CyberPlanner: IP network monitoring and planning”	\$278,310	2004-2005
Nortel Networks	“Resource Management in Wireless Mesh Networks”	\$120,000	2004-2005
NSERC Discovery Grant	“Self-Managing Networks”	\$188,500	2004-2009
ORDCF (STG- Visionary Res.)	“Multipath Routing”	\$21,855	2006
ORDCF (STG- Visionary Res.)	“Sensor Networking”	\$21,218	2005
ORDCF (STG- Visionary Res.)	“Sensor Networking”	\$20,000	2004
CANARIE	“User Controlled Lightpaths”	\$225,000	2003
Waterloo Academic Development Fund	“IFIP WG on Network and Distributed Systems Management”	\$4,000	2004
Alcatel	“Enabling Distributed (Management) Applications for Network Services” Phase 2	\$48,000	2004
Alcatel	“Enabling Distributed (Management) Applications for Network Services” Phase 1	\$42,000	2004
Bell Bridging Funds	“Broadband IP Metrics”	\$25,000	2004
Bell Canada	“Broadband IP Metrics”	\$90,000	2003
CANARIE	“User Controlled Lightpaths”	\$225,000	2003
NSERC CRD Grant	“Change management in dynamic telecommunications networks”	\$78,120	2002
Canadian Institute for Telecom. Research (CITR)	“Internet Economic Management”	\$98,000	2001-2002
Canadian Institute for Telecom. Research (CITR)	“Innovation Grant”	\$50,100	2002
University of Waterloo	“Academic Development Fund”	\$8,000	2002
Bell Canada	“Bell University Labs: Equipment grant”	\$70,000	2002
Canadian Institute for Telecom. Research (CITR)	“Bridging Funds for Student Graduation”	\$15,000	2002
Bell University Laboratory	“PC Network”	\$20,000	2001
NSERC CRD Grant	“Resource Management in Mobile Ad-hoc Networks”	\$201,000	2003-2006
University of Waterloo Academic Development Fund	“IFIP WG on Network and Distributed Systems Management”	\$16,000	2001-2002
Canadian Institute for Telecom. Research (CITR)	“Programming the Internet”	\$49,000	2001
Canadian Institute for Telecom. Research (CITR)	“Training of highly Qualified Personnel”	\$42,000	2001
Ontario Premier’s Research Excellence Award	“Towards Self-managed Networks”	\$100,000	2000-2004
Canadian Institute for Telecom. Research (CITR)	“Billing in Programmable Networks”	\$42,000	2000-2001
Nortel Networks	“Resource Management in Mobile Ad-hoc Networking”	\$180,000	2000-2003
Bell Canada	“Internetworking”	\$26,715	2000
NSERC Discovery Grant	“Network Management and Active Networks”	\$137,020	2000-2004

Canadian Institute for Telecom. Research (CITR)	“Applications of Programmable Network Concepts to the Internet”	\$39,000	2000
NSERC CRD Grant	“Change management in dynamic telecommunications networks”	\$147,296	1999-2000
Nortel Networks	“Change management in dynamic networks”	\$165,000	1999-2002
University of Waterloo	Start-up Grant	\$30,000	1999
NSERC Discovery Grant	“Distributed, Integrated, Intelligent and Automated Network and Systems Management”	\$97,484	1996-2000
Ericsson Canada	“Intelligent fault management in mobile networks”	\$900,000	1996-1997
Eicon & Positron Fiber Systems	“Multimedia Networking”	\$600,000	1996-1997
iXmedia	“Multimedia Games over the Internet”	\$7,625	1996
MediaSoft Telecom.	“Interactive Multimedia Communications”	\$20,000	1996-1997
Eicon Technologies	“Distributed Network Management”	\$373,464	1996-1997
Positron Fiber Systems	“Sonet Network Management”	\$445,526	1996-1997
Bell Canada & Teleglobe	“High Capacity Network Architecture”	\$8,000.00	1996
Stentor	“Multimedia apps over broadband networks”	\$25,000.00	1996

With co-investigators:

Co-investigators	Source	Title	Amount	Years
M. Karsten, S. Al-Kiswani and 2 others	Ontario Research Fund (ORF)	“Designing the Next-G Platform for Future 5G and Beyond Applications”	\$2,000,000	2025-2028
M. Karsten, S. Al-Kiswani and 2 others	Ontario Research Fund (ORF)	“Designing the Next-G Platform for Future 5G and Beyond Applications”	\$2,000,000	2025-2028
M. Karsten, S. Al-Kiswani and 2 others	Ontario Research Fund (ORF)	“Designing the Next-G Platform for Future 5G and Beyond Applications”	\$2,000,000	2025-2028
M. Debbabi and 5 others	National Cybersecurity Consortium (NCC)	“Building cyber resilient and secure 5G networks through automation and AI”	\$1,000,000	2023-2026
T. Jennewein and 8 others	DnD IDEaS Quantum Technologies MicroNet	“Reliable and Agile Quantum Key Distribution Networks and Beyond”	\$3,000,000	2023-2028
A. Layton	CFI JELF / ORF	“A data-informed model for predicting kidney outcomes”	\$236,442	2023
A. Leon-Garcia and 4 others	NSERC Collaborative Research and Training Experience (CREATE)	“Network Softwarization”	\$1,650,000	2017-2023
S. Boumaiza and 6 others	NSERC Research Tools and Instruments (RTI)	“Modular Testbed for Characterizing Channels, Circuits and Systems in the 6090 GHz Band”	\$150,000	2017
A. Leon-Garcia and 6 others	NSERC Research Tools and Instruments (RTI)	“Operations & Maintenance Support for Smart Applications and Virtual Infrastructure Testbed”	\$101,858	2017

A. Khandani and 4 others	NSERC Research Tools and Instruments (RTI)	“Operations & Maintenance Support for Smart Applications and Virtual Infrastructure Testbed”	\$148,280	2015
A. Leon-Garcia and 12 others	NSERC Strategic Research Network	Smart Applications on Virtualized Infrastructure	\$5,000,000	2010-2016
C. Rosenberg and Paul Ward	NORTEL Networks	“Wireless Mesh Testbed”	\$110,000	2005
Johnny Wong	Bell-University Lab Bell Canada	“Network Simulation Server”	\$95,000	2001
Toni Vanelli and Henry Volkowics	Bell Canada	“Broadband and IP Metrics: Modeling, Measurements and Optimization”	\$429,000	2001-2003

THESES SUPERVISION/EXAMINATION

Thesis Supervision

University of Waterloo:

Post-doctoral fellows: 22

Doctoral students: 24

Masters students (thesis): 51

Masters students (essays): 5

Undergraduate Research Assistants: 50+

Other Universities:

Doctoral students (co-supervised): 6

Doctoral students (visiting): 20

Masters students: 4

Post-Doctoral Fellows

	Name	Time Frame	Current position
1	Nathalie Wehb	March 2026 – present	Mitacs PDF – University of Waterloo and Ericsson
2	Xiao Yang	March 2025 – present	PDF – University of Waterloo
3	Philippe Graff	May 2024 – present	Mitacs PDF – University of Waterloo and Rogers
4	Moshfeka Rahman	Mar. 2024 – Aug. 2025	Unknown
5	Bo Sun	Jun. 2023 – Jun. 2025	Assistant Professor, University of Ottawa
6	Azadeh Tabiban	Jan. 2023 – Aug. 2023	Assistant Professor, University of Manitoba
7	Morteza Golkarifard	Jan. 2022 – Aug. 2023	Software Engineer, Ericsson Ottawa
8	Mahdieh Ahmadi	Jan. 2022 – Aug. 2023	Software Engineer, Ericsson Ottawa
9	Hyame Alameddine	Jun. 2019 – Jan. 2021	Senior Security Researcher – Ericsson Montreal
10	Faizul Bari	Sep. 2018 – Apr. 2020	CTO, Spectrum Software Ltd., Bangladesh
11	Mohammad Ali Salahuddin	Oct. 2016 – Sep. 2019	Research Assistant Professor, University of Waterloo
12	Sara Ayoubi	Aug. 2016 – Sep. 2017	Research Scientist, Nokia Bell Labs, France
13	Reaz Ahmed	Apr. 2013 – Mar. 2015	Software Engineer, Google, Waterloo
14	Faten Zhani	Sep. 2011 – Aug. 2014	Professor, Institut Supérieur d'Informatique et des Techniques de Communication, Tunisia
15	Maxim Podlesny	Sep. 2011 – Aug. 2012	Manager, Digital Strategy Architecture and Governance, Athabasca University, Alberta
16	Fatma Bouabdallah	Apr. 2010 – Jan. 2011	Associate Professor, King AbdulAziz University, Saudi Arabia
17	Lu Cheng	Sep. 2009 – Dec. 2011	Senior Developer, MappleSoft, Waterloo
18	Eren Gurses	Jan. 2008 – Dec. 2010	Machine Learning Engineer, Apple, San Francisco, USA

19	Issam Aib	Mar. 2008 – Feb. 2010	Senior Technical Manager, Software Solutions, Ontario Public Service, Toronto
20	Rami Langar	Sep. 2006 – Aug. 2008	Professor, École de Technologie Supérieure (ETS), Montreal
21	Mi-Jung Choi	Sep. 2005 – Aug. 2006	Associate Professor, Department of Computer Science, Kangwon National University, South Korea
22	Youssef Iraqi	Apr. 2003 – Jan. 2004	Associate Professor, School of Computer Science, Mohammed VI Polytechnic University, Morocco

Doctoral Students – University of Waterloo

	Name	Time Frame	Current position
1	Tyler Liu	Sep. 2023 – present	PhD student, University of Waterloo
2	Mehdi Bolourian	Sep. 2023 – present	PhD student, University of Waterloo
3	Mohammad Zangoeei	Sep. 2021 – present	PhD student, University of Waterloo
4	Mohammad Rouili	Sep. 2021 – present	PhD student, University of Waterloo
5	Elham Akbari Azirani	Sep. 2020 – present	PhD student, University of Waterloo
6	Seyed Soheil Johari	Sep. 2020 – present	PhD student, University of Waterloo
7	Hauton Tsang	Sep. 2020 – present	PhD student, University of Waterloo
8	Muhammad Sulaiman	Sep. 2020 – present	PhD student, University of Waterloo
9	Niloy Saha	Sep. 2020 – present	PhD student, University of Waterloo
10	Yuhao (Eric) Dong	Sep. 2015 – Aug. 2023	Founder & CEO, Mel Systems, Chicago, United States
11	Shihabur R. Chowdhury	Sep. 2013 – Feb. 2021	Senior Software Engineer, Apple, Seattle, United States
12	Nashid Shahriar	May. 2014 – Jul. 2020	Assistant Professor, University of Regina
13	Mojtaba Gharibi	Jan. 2016 – May. 2020	Post-doctoral fellow, University of Texas at Austin
14	Milad Ghaznavi	Sep. 2014 – Aug. 2020	Senior Software Engineer, Google, Toronto
15	Faizul Bari	Sep. 2010 – Aug. 2018	CTO, Spectrum Software Ltd. Bangladesh
16	Khalid Alsubhi	Jan. 2009 – Mar. 2016	Associate Professor, King AbdulAziz University, Saudi Arabia
17	Jun (Carol) Fung	Sep. 2007 – Apr. 2013	Associate Professor, Concordia University, Montreal
18	Qi Zhang	Jan. 2007 – Sep. 2013	Senior Software Engineer, Microsoft, Seattle, Washington, United States
19	Maxwell Young	Jan. 2007 – Oct. 2011	Associate Professor, Mississippi State Univ.
20	Loubna Mekouar	Sep. 2001 – Oct. 2010	Assistant Professor, School of Computer Science, Mohammed VI Polytechnic University, Morocco
21	Jin Xiao	Sep. 2001 – Jan. 2010	Senior Software Engineer - Data Architect NYDIG, United States
22	Sonia Waharte	Jan. 2003 – Dec. 2008	Director Carrier Engineering, Fuze, Ottawa
23	Reaz Ahmed	Sep. 2003 – May 2007	Software Engineer, Google, Waterloo
24	Majid Ghaderi	Sep. 2002 – Sep 2006	Professor, University of Calgary

Doctoral Students – Co-supervised at other Universities

	Name	Time Frame/University	Current position
1	Joël Roman Ky	Sep. 2022 – present INRIA/University Lorraine	PhD student, INRIA/University de Lorraine, France
2	Abir Laraba	Sep. 2018 – Oct. 2022 INRIA/University Lorraine	Associate Professor, Université Toulouse III, Paul Sabatier & IRIT, France
3	Salima Omari	1997 – 2003 UVSQ University of Versailles	Senior Consultant, A.I. Consulting Inc, Toronto
4	Youssef Iraqi	1997 – 2003 University of Montreal	Associate Professor, School of Computer Science, Mohammed VI Polytechnic University, Morocco

5	Petre Dini	1995 – 1997 University of Montreal	Retired after a career at Cisco, San Jose, United States
6	Ahmed Mehaoua	1994 – 1997 UVSQ University of Versailles	Professor, Université Paris Cité (formerly Paris Descartes), France

Visiting Doctoral Students – University of Waterloo

	Name	Time Frame / Home University	Current position
1	Leonardo Alberro	Sep. 2024 – Feb. 2025 Universidad de la República, Uruguay	PhD student, Universidad de la República, Uruguay
2	Daniela Casas Velasco	Jan. 2023 – Jul. 2023 University of Campinas, Brazil	PhD student, University of Campinas, Brazil
3	Rodrigo Augusto Cardoso da Silva	Oct. 2019 – Apr. 2020 University of Campinas, Brazil	Assistant Professor, Universidade Federal do ABC, Santo André, Brazil
4	Diogo Gonçalves	Jan. 2019 – Jun. 2019 University of Campinas, Brazil	PhD student, University of Campinas, Brazil
5	Nazih Salhab	Oct. 2019 – Dec. 2019 Université Paris-Est, France	5G Innovation Project Director, SNCF-Réseau, France
6	Davit Harutyunyan	Sep. 2018 – Dec. 2018 University of Trento, Italy	Research Engineer, Bosh, Germany
7	Felipe Estrada-Solano	Sep. 2016 – May. 2017 University of Cauca, Columbia	Post-Doctoral Fellow, Concordia University, Montreal
8	Ali Hmaity	Sep. 2016 – Dec. 2016 Politecnico di Milano, Italy	Deutsche Börse, Luxembourg
9	Abdelhadi Azouni	Oct. 2015 – Jan. 2017 Sorbonne University, France	Head of Engineering, Rely.io, France
10	Min Feng	Sep. 2014 – Aug. 2015 Beijing University of Posts and Telecommunications	unknown
11	Leonardo Richter Bays	Jan. 2014 – Dec. 2015 Universidade Federal do Rio Grande do Sul, Brazil	unknown
12	Zhihong Liu	Sep. 2013 – Aug. 2015 National University of Defense Technology, China	unknown
13	Lautaro Dolberg	Feb. 2014 – May. 2014 University of Luxembourg	Engineering Manager, Capchase, Luxembourg
14	Ahmed Amokrane	Oct. 2012 – Jan. 2013 Sorbonne University, France	Senior Manager, Cybersecurity Services, KPMG, France
15	Youngjoon Won	Jul. 2012 – Dec. 2012 Pohang University of Science and Technology, South Korea	Assistant Professor - Hanyang University, South Korea
16	Shuo Zhang	Oct. 2013 – Sep. 2015 National University of Defense Technology, China	unknown
17	Rafael Pereira Esteves	May. 2011 – Apr. 2012 Universidade Federal do Rio Grande do Sul, Brazil	Professor, Federal Institute of Rio Grande do Sul, Brazil
18	Issam Aib	May. 2005 – Apr. 2007 Sorbonne University, France	Senior Technical Manager, Software Solutions, Ontario Public Service
19	François Jérôme	May. 2006 – Aug. 2007 LORIA/CNRS/INRIA Nancy	Research Scientist, University of Luxembourg
20	Toufik Ahmed	Jan. 2002 – Dec. 2002 UVSQ Univ. de Versailles	Professor, University of Bordeaux, France

Masters Students (Thesis) – University of Waterloo

	Name	Time Frame	Current position
1	Abdenour Belarbi	Jan. 2026 – present	Masters Student, University of Waterloo
2	Taha Cheema	Jan. 2026 – present	Masters Student, University of Waterloo
3	Nizar Kanaan	Jan. 2026 – present	Masters Student, University of Waterloo
4	Amaan Ahmed	Sep. 2025 – present	Masters Student, University of Waterloo
5	Fatima Sohail	Jan. 2025 – present	Masters Student, University of Waterloo
6	Eimaan Saqib	Sep. 2024 – present	Masters Student, University of Waterloo
7	Qifan (Eric) Yan	Sep. 2024 – present	Masters Student, University of Waterloo
8	Setareh Alagheh Band	Jan. 2024 – present	Masters Student, University of Waterloo
9	Fatemeh Shafiei Ardestani	Sep. 2023 – present	Masters Student, University of Waterloo
10	Amiromohammad Ghassemi	Sep. 2023 – present	Masters Student, University of Waterloo
11	Sun Gyu Park	Sep. 2023 – present	Masters Student, University of Waterloo
12	Bohang Zhang	Sep. 2022 – F24	Research Associate, University of Waterloo
13	Zeshan Fayyaz	Sep. 2022 – F24	Masters Student, University of Waterloo
14	Navid Malekghaini	Sep. 2020 – Jan. 2023	Software Engineer, Huawei, Burnaby, BC, Canada
15	Saif Zabarrah	Jan. 2020 – Dec. 2022	Machine learning and Systems Engineer, Ottawa Hospital research Institute
16	Arash Moayeddi	Apr. 2020 – Jan. 2023	Algorithm Engineer, Roche, Toronto
17	Iman Akbari Azirani	Sep. 2019 – May. 2021	Technical Solutions Engineer, Google, Waterloo
18	Anthony Ang	Jan. 2018 – Jan. 2020	Software Engineer II, Microsoft Vancouver
19	Haibo Bian	Sep. 2016 – Sep. 2019	Software Engineer, Bioinformatics Solutions Inc., Waterloo
20	Zhenyu (Tim) Bai	May. 2017 – Sep. 2019	Software Engineer, Google, Waterloo
21	Abbas Abou Daya	Sep. 2017 – Mar. 2019	CEP and Founder, Gearlay Technologies Inc.
22	Sepehr Taeb	Sep. 2016 – Jan. 2019	Software Engineer, Huawei, Ottawa
23	Eric Woojung Kim	Sep. 2016 – Oct. 2018	Blockchain Developer Evangelist, Ground X, South Korea
24	Haibo Bian	Sep. 2016 – Sep. 2019	Software Engineer, Bioinformatics Solutions Inc., Waterloo
25	Sepehr Taeb	Sep. 2016 – Jan. 2019	Software Engineer, Huawei, Ottawa
26	Elaheh Jalapour	Sep. 2016 – Aug. 2018	Machine Learning Engineer, Square, Toronto
27	Md Mashrur Alam Khan	Sep. 2013 – Aug. 2015	Senior Software Engineer, Flexport, Kitchener
28	Arup Raton Roy	Sep. 2012 – Apr. 2014	Software Engineering Manager, Arista Networks, Burnaby, BC, Canada
29	Md Golam Rabbani	Sep. 2011 – Jan. 2014	Software Development Engineer, Amazon, Richmond, BC, Canada
30	Rakibul Haque	May. 2010 – Jun. 2012	Software Development Engineer, Amazon, Austin, Texas, United States
31	Samuel Fady	Oct. 2009 – Feb. 2011	Vice President (Site lead), Goldman Sachs, Toronto
32	Muhamed Sukkar	Sep. 2007 – Sep. 2010	Data Solutions Architect, TD Bank, Toronto

33	Jiajia Han	Jan. 2009 – Jul. 2010	Co-Founder, Halftime Sports, Mountain View, CA, United States
34	Raihan Muntasir	Sep. 2008 – May 2010	Principal Machine Learning Engineer, Microsoft, Bellevue, Washington, USA
35	Fida Zaheer	Sep. 2008 – May 2010	CEO, Syncoria, Toronto
36	Constantine Murenin	May. 2008 – May 2010	Software Engineer, FreeBSD, Greenville, North Carolina, United States
37	Nabeel Butt	Jan. 2008 – Jan. 2010	Software Engineer, Oculus VR, San Francisco, CA, United States
38	Tung Tran	Sep. 2006 – Jan. 2009	Research Assistant, Stony Brook University
39	Khalid Alsubhi	Jan. 2006 – Dec. 2008	Associate Professor, King AbdulAziz University, Saudi Arabia
40	Karim Hamdan	Sep. 2007 – Dec. 2009	Associate Professor, CS, University of Alberta
41	Mosharaf Chowdhury	May. 2007 – Jun. 2009	Associate Professor, CSE, University of Michigan, Ann Arbor, United States
42	Ahn Le	Sep. 2006 – Aug. 2008	Co-Founder, CTO, Shoelace Wireless, Irvine, United States
43	Bassam Aoun	2004 – 2006	Co-founder and Principal Engineer, Everyday Agents, San Francisco, United States
44	Joanna Ziembicka	Sep. 2003 – Dec. 2005	Infrastructure Development Engineer, University of Kent, Canterbury, UK
45	Wenli Liu	2002 – 2005	Software Developer, Bridgeways, Ottawa
46	Brent Ishibashi	Jan. 2001 – Dec. 2004	unknown
47	Joe Capka	2001 – 2004	Software Engineering Manager III, Google, Boulder, Colorado, United States
48	Wojciech Golab	2002 – 2004	Associate Professor, ECE, University of Waterloo
49	Tianshu Li	2001 – 2003	unknown
50	Ajay Pal Singh Virk	2001 – 2003	unknown
51	Wayne Szeto	2000 – 2002	Consultant, Agilea Solutions

Masters Students (Essays) – University of Waterloo

	Name	Time Frame	Current position
1	Zeshan Fayyaz	May 2022 – present	Master’s student, University of Waterloo
2	Aimal Khan	Sep. 2013 – Aug. 2016	DevOps Engineer, Samsung Electronics, Waterloo
3	Ahsan Raza	Sep. 2013 – Jan. 2016	Senior Software Engineer, Workday, San Francisco, United States
4	Alexander Pokluda	Sep. 2012 – Aug. 2014	Senior Member of Technical Staff, VMware, Waterloo
5	Mohamed Soliman	2001 – 2002	unknown

Masters Students (Thesis) – Other Universities

	Name	Time Frame / University	Current position
1	Anna Evlogimenou	2000 – 2001 University of Toronto	Head of Digital Certificate Services, Athens Exchange Group, Greece
2	Andreas Polyraakis	1999 – 2001 University of Toronto	Director of Business Development, Digital reality, Greece
3	D. Defadima	1999 – 2000 University of Montreal	unknown
4	Adel Ghlamallah	1998 – 1999 University of Montreal	Solution Architect, Nomadek Solutions, Montreal

Theses Examination

–2026 :

- External Examiner, Ph.D. thesis, A. GUPTA, IIT Kharapur, India, March 20256.
- Internal-External Examiner, Ph.D. comprehensive exam, Z. Li, ECE Department, University of Waterloo, April 1, 2026.

–2025 :

- External Examiner, Ph.D. thesis, B. ADHIKARI, Electrical and Computer Engineering, Toronto Metropolitan University, December 2025.
- Examiner, “Habilitation à Diriger les Recherches” (HDR) thesis, F. ZHANI, Université de Versailles Saint-Quentin-en-Yvelines, France, July 4, 2025.
- External Examiner, Ph.D. thesis, M. MOUSSAOUI, Telecom SudParis, Institut Polytechnique de Paris, France, June 24, 2025.

–2024 :

- Internal-External Examiner, Ph.D. thesis, M. HASSAN, ECE Department, University of Waterloo (Canada), August 6, 2024.
- External Examiner, Ph.D. thesis, S. ABASI ZADEH, University of Toronto, July 15, 2024.

–2023 :

- External Examiner, Ph.D. thesis, F. CARPIO, Institute for Data Technology and Communication Networks, Technical University Braunschweig, June 19, 2023.
- External Examiner, “Habilitation à Diriger les Recherches” (HDR) thesis, A. HAKIRI, Université de Toulouse, May 3, 2023.

–2022 :

- External Examiner, Ph.D. thesis, V. VALLOIS, Computer Science, Université Paris Cité, December 12, 2022.
- External Examiner, Ph.D. thesis, S. KETABI, Computer Science, University of Toronto, November 23, 2022.
- External Examiner, “Habilitation à Diriger les Recherches” (HDR) thesis, F. BOUABDALLAH, Université Paris Cité (France), November 18, 2022.
- External Examiner, “Habilitation à Diriger les Recherches” (HDR) thesis, K. SINGH, Université Jean Monnet St-Etienne (France), July 6, 2022.
- External Examiner, Ph.D. thesis, N. HEWAHI, University of Bahrein, June 26, 2022.

–2021 :

- External Examiner, “Habilitation à Diriger les Recherches” (HDR) thesis, M. ESSEGHIR, Université de Technologies de Compiègne (France), November 16, 2021.
- External Examiner, Ph.D., N. KODIROV, Computer Science Department, University of British Columbia, September 21, 2021.
- External Examiner, “Habilitation à Diriger les Recherches” (HDR) thesis, S. MEDJIAH, Institut National Polytechnique de Toulouse (France), January 14, 2021.

–2020 :

- External Examiner, Ph.D. thesis, M. NAGHSHVARIANJAHROMI, McMaster University (Canada), August 4, 2020.
- External Examiner, Ph.D. thesis, T. OJHA, Indian Institute of Technology (IIT) - Kharagpur (India), July 24, 2020.
- External Examiner, Ph.D., A. SEVERIMOUTOU, École Nationale Supérieure Mines-Telecom Atlantique, May 15, 2020.

–2019 :

- Internal-External Examiner, Ph.D., K. ALDUBAIKHY, ECE Department, University of Waterloo (Canada), September 10, 2019.
- Examiner, Ph.D., A. ALLEG, University of Bordeaux, July 11, 2019
- External Examiner, Ph.D., G. RUTY, Telecom ParisTech, February 15, 2019.
- External Examiner, Ph.D., D. CERVIĆ, Sorbonne Université, February 7, 2019.

- External Examiner, Ph.D., M. TANHA, University of Victoria, January 15, 2019.
- 2018 :**
- Examiner, “Habilitation à Diriger les Recherches” (HDR) thesis, Z. MOVADI, Computer Science department, Sorbonne Université (France), July 12, 2018.
 - Internal-External Examiner, Ph.D. comprehensive exam, M. HASSAN, ECE Department, University of Waterloo (Canada), July 4, 2018.
 - External Examiner, “Habilitation à Diriger les Recherches” (HDR) thesis, E. BERTIN, Sorbonne Université (France), February 19, 2018.
- 2017 :**
- External Examiner, Ph.D., B. DAB, Université Paris-Est, July 5, 2017.
 - Examiner and Committee Chair, Ph.D., M. OBADIA, Paris Institute of Technology (ParisTech), June 15, 2017.
 - Internal-External Examiner, P.D. Comprehensive Background Examination, M. HASSAN, ECE Department, University of Waterloo (Canada), May 12, 2017.
 - Internal-External Examiner, Ph.D., N. ALSHARIF, ECE Department, University of Waterloo (Canada), March 6, 2017.
 - External Examiner, “Habilitation à Diriger les Recherches” (HDR) thesis, O. SALEM, Université Paris Descartes (France), February 4, 2017.
- 2016 :**
- Internal-External Examiner, Ph.D. Comprehensive Examination, K. ALDUBAIKHY, ECE Department, University of Waterloo (Canada), November 30, 2016.
 - External Examiner, “Habilitation à Diriger les Recherches” (HDR) thesis, H. KAFFEL BEN AYED, Faculty of Sciences of Tunis (Tunisia), November 21, 2016.
 - External Examiner, Ph.D., S. SINGH, CSE Department, Thapar University, Patiala (India), October 3, 2016.
 - Examiner, “Habilitation à Diriger les Recherches” (HDR), N. AIT SAADI, Université Paris Est (France), July 18, 2016.
 - External Examiner, Ph.D., R. YANGGRATOKE, KTH Royal Institute of Technology (Sweden), May 3, 2016.
 - Internal-External Examiner, Ph.D., A. MUKHOPADHYAY, ECE Department, University of Waterloo. Waterloo (Canada), January 29, 2016.
- 2015 :**
- External Examiner, Ph.D., J. ERNST, CS Department, University of Guelph (Canada), December 3, 2015.
 - Internal-External Examiner, Ph.D., E. M. H. ABOUELENIN, ECE Department, University of Waterloo. Waterloo (Canada), November 3, 2015.
 - External Examiner, Ph.D., L. DOLBERG, University of Luxembourg (Luxembourg), May 4, 2015.
 - Internal-External Examiner, Ph.D., J. QIAO, ECE Department, University of Waterloo. Waterloo (Canada), April 2, 2015.
 - External Examiner, Ph.D., D. DAS, Computer Science and Engineering, Tezpur University (India), March 15, 2015.
 - External Examiner, Ph.D., K. MOKHTARIAN, ECE Department, University of Toronto (Canada), March 9, 2015.
- 2014 :**
- Examiner, Ph.D., A. AMOKRANE, Université Pierre & Marie Curie, Paris (France), December 8, 2014.
 - Examiner, Ph.D. thesis, M. MECHTRI, Mines-ParisTech (France), December 1, 2014.
 - Internal-External Examiner, Ph.D., Z. ZHENG, ECE Department, University of Waterloo. November 27, 2014.
 - Internal-External Examiner, Ph.D., H. IBRAHIMZADEH, ECE Department, University of Waterloo. Sept. 2, 2014.
 - External Examiner, Ph.D., M. BARRERE, University of Lorraine, Nancy (France), June 12, 2014.
 - External Examiner, Ph.D., E. KUDA, Department of Electronic Systems, Aalborg University (Danmark), April 29, 2014.
 - External Examiner, Ph.D., P. TALEBIFARD, ECE Department, University British Columbia (UBC), Vancouver, UBC (Canada), April 9, 2014.
 - External Examiner, Ph.D., D. F. VENMANI, TELECOM SudParis (France), February 26, 2014.
 - Internal-External Examiner, Ph.D., E. H. M. A. AMINABADI, ECE Department, University of Waterloo. Waterloo (Canada), February 6, 2014.

–2013 :

- Opponent, Ph.D. Licenciante thesis, M. UDDIN, Electrical Engineering Department, KTH, Stockholm, Sweden, October 14, 2013.
- External Examiner, “Habilitation à Diriger les Recherches” (HDR), A. KSENTINI, Université de Rennes 1, Rennes (France), July 3, 2013.
- External Examiner (Rapporteur), Ph.D. thesis, A. AMAMOU, Université Pierre & Marie Curie (PARIS VI), Paris (France), September 26, 2013.
- Internal-External Examiner, Ph.D. Comprehensive Examination, A. MUKHOPADHYAY, ECE Department, University of Waterloo. Waterloo (Canada), June 26, 2013.
- Examiner, Ph.D. thesis, W. He, David R. Cheriton School of Computer Science, University of Waterloo. Waterloo (Canada), May 13, 2013.
- Internal-External Examiner, Ph.D. thesis, S. TAHA, ECE Department, University of Waterloo. Waterloo (Canada), March 28, 2013.
- Internal-External Examiner, Ph.D. Comprehensive Examination, A. M. H. ABOUELENIN, ECE Department, University of Waterloo. Waterloo (Canada), March 15, 2013.
- Internal-External Examiner, Ph.D. thesis, A. HAQUE, ECE Department, University of Waterloo. Waterloo (Canada), March 14, 2013.
- Reader, MMath thesis, S. FORSYTH, David R. Cheriton School of Computer Science, University of Waterloo. Waterloo (Canada), March 6, 2013.

–2012 :

- Internal-External Examiner, Ph.D. thesis, S. SHABDANOV, ECE Department, University of Waterloo. Waterloo (Canada), November 26, 2012.
- Internal-External Examiner, Ph.D. Comprehensive Examination, A. M. H. ABOUELENIN, ECE Department, University of Waterloo. Waterloo (Canada), November 16, 2012.
- Internal-External Examiner, Ph.D. Comprehensive Examination, Z. M. ZHENG, ECE Department, University of Waterloo. Waterloo (Canada), November 14, 2012.
- Internal-External Examiner, Ph.D. Comprehensive Examination, I. A. QUAIMKHANI, ECE Department, University of Waterloo. Waterloo (Canada), November 7, 2012.
- External Examiner, Ph.D. thesis, I. FAJJARI, Université Pierre & Marie Curie (PARIS VI), Paris (France), September 12, 2012.
- Internal-External Examiner, Ph.D. Comprehensive Examination, W. HE, ECE Department, University of Waterloo. Waterloo (Canada), September 11, 2012.
- Internal-External Examiner, Ph.D. Comprehensive Examination, N. H. ALSHARIF, ECE Department, University of Waterloo. Waterloo (Canada), July 20, 2012.
- External Examiner, Ph.D. thesis, M. KHABBAZ, ECE, Concordia University, Montreal (Canada), June 29, 2012.
- Internal-External Examiner, Ph.D. thesis, S. BIRMIWAL, ECE Department, University of Waterloo. Waterloo (Canada), June 15, 2012.
- External Examiner, “Habilitation à Diriger les Recherches” (HDR), P. ANELLI, Univ. la Réunion (France), May 11, 2012.
- Internal-External Examiner, Ph.D. thesis, S. FASHANDI, ECE Department, University of Waterloo. Waterloo (Canada), January 4, 2012.

–2011 :

- Internal-External Examiner, Ph.D. Comprehensive Examination, E. H. M. A. AMINABADI, ECE Department, University of Waterloo. Waterloo (Canada), January 25, 2011.
- Internal-External Examiner, Ph.D. Comprehensive Examination, Md. FORKAN UDDIN, ECE Department, University of Waterloo. Waterloo (Canada), May 4, 2011.
- Internal-External Examiner, Ph.D. Comprehensive Examination, S. M. A. TAHA, ECE Department, University of Waterloo. Waterloo, May 5, 2011.
- External Expert Examiner, Ph.D. thesis and candidate consideration for the Cum Laude Award, J. VAZIFEHDAN, Faculty of Electrical Engineering, Mathematics and Computer Science, Delft University of Technology, Delft (The Netherlands), August 6, 2011.

- Reader, MMath thesis, C. GUO, David R. Cheriton School of Computer Science, University of Waterloo. Waterloo (Canada), September 2, 2011.
- External Examiner, Ph.D., M. BOURGUIBA, Université Pierre & Marie Curie (PARIS VI), Paris (France), September 16, 2011.
- Reader, MMath thesis, A. KARYAKIN, David R. Cheriton School of Computer Science, University of Waterloo. Waterloo (Canada), September 22, 2011.
- Examiner, Master's thesis, A. KWON, Department of EECS, Pohang University of Science and Technology (POSTECH). Pohang (Korea), Sept. 30, 2011.
- External-Internal Examiner, Ph. D. Comprehensive Examination, A. HAQUE, ECE Department, University of Waterloo. Waterloo, November 7, 2011.
- External Examiner, Ph.D., S. MOUAD, Université de Rennes 1, Rennes (France), Dec. 16, 2011.
- External Examiner, Ph.D., S. HONG, Department of Electrical Engineering and Computer Science, Pohang University of Science and Technology (POSTECH). Pohang (South Korea), December 16, 2011. 2010.
- External Examiner, Ph.D., J-M. KANG, POSTECH (Korea).

–2010 :

- External Examiner, “Habilitation à Diriger les Recherches” (HDR), Y. GHAMRI-DOUDANE, Univ. Paris-Est (France).
- External Examiner, “Habilitation à Diriger les Recherches” (HDR), L. MERGHEM, Université de Technologie de Compiègne (France).
- External-Internal Examiner, Ph. D. Comprehensive Examination, S. BIRMIWAL, ECE Department, University of Waterloo. Waterloo (Canada).
- External-Internal Examiner, Ph. D. Comprehensive Examination, S. 2009. Committee Member, “Habilitation à Diriger les Recherches” (HDR), N. BOUABDALLAH, INRIA-Rennes (France).
- External-Internal Examiner, Ph. D. Comprehensive Examination, S. S. SHABDANOV, ECE Department, University of Waterloo. Waterloo (Canada).
- External-Internal Examiner, Ph. D., C. ZHANG, ECE Department, University of Waterloo. Waterloo (Canada).

–2009 :

- External-Internal Examiner, Ph. D., H. ZHU, ECE Department, University of Waterloo. Waterloo (Canada).
- Reader, MMath, Y. HU, Cheriton School of Computer Science, University of Waterloo. Waterloo (Canada).

–2008 :

- External Examiner, HDR (Habilitation a Diriger les Recherches). N. Boukhatem, Ecole Nationale Supérieure des Telecommunications de Paris (ENST-Paris), France
- External Examiner, Ph.D. Computer Science. S. Ghamri-Doudane, University of Pierre & Marie Curie (Paris 6). Paris, France
- External Examiner, Ph.D. Computer Science. F. Bouabdallah, University de Rennes I, France
- External Examiner, HDR (Habilitation a Diriger les Recherches). T. Ahmed, University of Bordeaux I, France
- External Examiner, Ph. D. S. Balon, Computer Science. University de Liege. Belgium
- External-Internal Examiner, Ph. D. C. Zhang, ECE department. University of Waterloo. Canada
- External-Internal Examiner, Ph.D. X. Qian, ECE Department. University of Waterloo. Canada
- External-Internal Examiner, Ph.D. S. Fashandi. ECE Department, Univ. of Waterloo. Canada
- Reader. Master's. C. M. REID, ECE Department, University of Waterloo, Canada.
- External-Internal Examiner, Ph.D. U. JAVAID, University of Bordeaux, Bordeaux, France.
- External-Internal Examiner, Ph.D. R. FARHA, ECE Department, University of Toronto, Canada

–2007 :

- External Examiner, Ph.D. M. ESSEGHIR, Univ. of Pierre & Marie Curie (Paris 6). Paris, France.
- External Examiner, Ph.D. K. HADDADOU, Univ. Pierre & Marie Curie (Paris 6). Paris, France.
- External-Internal Examiner, Ph.D. H. Zhu, ECE Department, University of Waterloo. Canada
- Reader. MMath. O. BEG, School of Computer Science, University of Waterloo. Canada

–2006 :

- External Examiner, Ph. D. F. Harivelo. University de la Reunion, France.
- External Examiner, Ph. D. A. Millet. University Paul Sabatier. Toulouse, France.
- External Examiner, Ph.D. Q. Wang. Queen’s University. Kingston, Canada
- External Examiner, Ph.D. S. Lohier. University of Pierre & Marie Curie (Paris 6), France
- External Examiner, Ph.D. T. T. Luu. Ecole Nationale Supérieure des Telecommunications (ENST-Paris), France

–2005 :

- External Examiner, HDR (Habilitation à Diriger les Recherches). A. Mehaoua, University of Versailles, France
- External Examiner, Ph.D. C. Aoun. Ecole Nationale Supérieure des Telecommunications (ENST-Paris), France
- External Examiner, Ph.D. A. Nafaa, University of Versailles, France
- External Examiner, Ph.D. T. Nadour, Ecole Nationale Supérieure des Telecommunications (ENST-Paris), France

–2004 :

- Committee Member, Ph.D. O. A. Dragoi, CS, University of Waterloo
- External Examiner, Ph.D. F. Idir, CS, U. Pierre & Marie Curie (Paris 6), France
- Internal-External Examiner, Ph.D. J. Zhang, ECE, University of Waterloo

–2003 :

- External Examiner, Ph.D. U. T. Nguyen, CS, University of Toronto
- External Examiner, Ph.D. N. Achir, CS, U. Pierre & Marie Curie (Paris 6), France
- Internal-External Examiner, Ph.D. L. Xu, ECE, University of Waterloo
- Internal-External Examiner, Ph.D. V. Huang, ECE, University of Waterloo
- External Examiner, Ph.D. A. Toufik, CS, University of Versailles, France
- External Examiner, Ph.D. M. S. P. Fonseca, CS, U. Pierre & Marie Curie (Paris 6), France
- External Examiner, Ph.D. M. Amer, SITE, University of Ottawa
- External Examiner, Ph.D. H. Tounsi, U. of Al-Mahdia, Tunisia
- Internal-External Examiner, Ph.D. V. Hang. ECE. University of Waterloo

–2002 :

- Reader. MMath. Q.Li SCS, University of Waterloo
- External Examiner, Ph.D. R. Beaubrun. Ecole Polytechnique de Montreal, Canada
- External Examiner, Ph.D. F. M. Sallabi. SITE, University of Ottawa
- Internal-External Examiner, Ph.D. L. Zhao. ECE, University of Waterloo
- Reader. MMath. M. Yu. SCS, University of Waterloo

–2001 :

- Internal-External Examiner, Ph.D. J. Zhang. University of Waterloo

–2000 :

- Internal-External Examiner, Ph.D. L. Xu. University of Waterloo
- Reader. MMath. B. Mukherjee. University of Waterloo
- Reader. MMath. F. G. Lin. University of Waterloo
- Reader. MMath. W.K. Kock. University of Waterloo

–1999 :

- External Examiner, Ph.D. F. Nait. University of Versailles, France

–1998 :

- External Examiner, Ph.D. H. Labiod. University of Versailles, France
- External Examiner, 1998. Ph.D. S. Cherkaoui. University of Sherbrooke, Canada