

# LONG BAO LE

## Full Professor

University of Quebec  
Institut National de la Recherche Scientifique (INRS-EMT)  
800 de la Gauchetiere West, Bur. 6900  
Montreal, QC, Canada H5A 1K6

Email: [long.le@inrs.ca](mailto:long.le@inrs.ca)  
Cell: +1-514-889-0235  
Office: +1-514-228-7015  
<https://www.emt.inrs.ca/long-le>  
<https://necphy-lab.com>

---

## Experience

### **Full Professor, June 2020-present**

INRS-EMT, University of Quebec, Canada

### **Associate Professor, June 2015-May 2020**

INRS-EMT, University of Quebec, Canada

### **Assistant Professor, October 2010-May 2015**

INRS-EMT, University of Quebec, Canada

### **Postdoctoral Research Associate, August 2008-August 2010**

Massachusetts Institute of Technology, USA

### **Postdoctoral Fellow, ECE Department, April 2007-August 2008**

University of Waterloo, Canada

### **Lecturer, Telecommunications Department, April 1999-April 2003**

Posts and Telecommunications Institute of Technology, Vietnam

## Education

### **Ph.D., Dept. Electrical and Computer Engineering, May 2007**

University of Manitoba (UoM), Canada,

### **M.Eng., Asian Institute of Technology (AIT), Thailand, December 2002**

### **B.Eng. (Hons.), Dept. Electrical and Electronic Engineering, April 1999**

Ho Chi Minh University of Technology (HCMUT), Vietnam,

## Research Interests

- 5G-and-beyond enabling technologies: dense wireless HetNets, mobile edge computing, content caching, UAV communications, internet of things (IoTs), Massive MIMO, MmWave communications, Cloud-RAN, D2D communications, wireless virtualization, blockchain, wireless localization
- Applications of artificial intelligence to wireless communications and networking
- Radio resource management and network optimization for wireless networks

- Smart power grids: Demand response management, power economics, electric vehicles, renewable energy

## Honors and Awards

- NSERC Discovery Accelerator Supplements (DAS) award, 2016-2019
- INRS Director's award for excellent academic performance, 2012-2019
- IEEE Senior Member
- NSERC Postdoctoral Fellowship, 2008-2010
- University of Manitoba Graduate Fellowship (UMGF), UoM, 2005-2007
- Edward R. Toporeck Graduate Fellowship in Engineering (two times), UoM, 2005-2007
- University of Manitoba Students' Union Scholarship, UoM, 2005
- IEEE Student Travel Award, IEEE WCNC'2003
- IEEE Student Travel Award, IEEE ICC'2005
- Keikyu Scholarship, AIT, 2001-2002
- University Gold Medal (1st rank in about 500 students), HCMUT, 1999
- Third Prize, Vietnam National Mathematical Olympiad, 1994

## Publications (11780+ citations on Google Scholar, h-index: 54)

### Books

[B2] Ekram Hossain, Mehdi Rasti, and **Long B. Le**, Radio Resource Management in Wireless Networks: An Engineering Approach, Cambridge University Press, 2017.

[B1] Ekram Hossain, **Long B. Le**, and Dusit Niyato, Radio Resource Management in Multi-Tier Cellular Wireless Networks, Wiley, 2013.

### Book Chapters

[BC3] Tadilo Bogale, Xianbin Wang, and **Long B. Le**, "MmWave communication enabling techniques for 5G wireless systems: A link level perspective," Elsevier, 2016

[BC2] Ekram Hossain, **Long B. Le**, Natasha Devroye, and Mai Vu, "Cognitive radio: From theory to practical network engineering," invited chapter in *Advances in Wireless Communications*, (Editors V. Tarokh and I. Blake), Springer, 2009.

[BC1] **Long B. Le**, Sergiy A. Vorobyov, Khoa Phan, and Tho Le-Ngoc, "Resource allocation and QoS provisioning for wireless relay networks," invited chapter in *Quality of Service Architectures for Wireless Networks: Performance Metrics and Management* (Editors S. Adibi and R. Jain), IGI Global, 2009.

## Journal Papers (Accepted/Appeared)

[J102] Vu Tuan Truong, Long B Le, and Dusit Niyato, Blockchain Meets Metaverse and Digital Asset Management: A Comprehensive Survey, *IEEE Access*, to appear.

[J101] Minh Tri Nguyen and **Long B Le**, “Multi-UAV trajectory control, resource allocation and NOMA user pairing for uplink energy minimization,” *IEEE Internet Things Journal*, vol. 9, no. 23, December 2022.

[J100] Gonzalez-Palacio Maricio et al., “Machine-learning-based combined path loss and shadowing model in LoRaWAN for energy efficiency enhancement,” *IEEE Internet Things Journal*, to appear.

[J99] Gonzalez-Palacio Maricio et al., “LoRaWAN path loss measurements in an urban scenario including environmental effects,” *Data*, to appear.

[J98] Minh Dat Nguyen, **Long B. Le**, and Andre Girard, “Integrated UAV trajectory control and resource allocation for UAV-based wireless networks with co-channel interference management,” *IEEE Internet of Things Journal*, vol. 9, no. 14, June 2022.

[J97] Minh Dat Nguyen, **Long B. Le**, and Andre Girard, “UAV placement and resource allocation for intelligent reflecting surface assisted UAV-based wireless networks,” *IEEE Communications Letters*, vol. 26, no. 5, pp. 1106-1110, May 2022.

[J96] Aruna Seneviratne, Ming Ding, Quoc-Viet Pham, Pubudu N. Pathirana, **Long B. Le**, Aruna Seneviratne, Jun Li, Dusit Niyato, and H. Vincent Poor, “Federated Learning Meets Blockchain in Edge Computing: Opportunities and Challenges,” *IEEE Internet Things Journal*, vol. 8, no. 16, pp. 12806-12825, 2021.

[J95] Minh Tri Nguyen and **Long B. Le**, “Resource Allocation, Trajectory Optimization, and Admission Control in UAV-Based Wireless Networks,” *IEEE Networking Letters*, vol. 3, no. 3, pp. 129-132, 2021.

[J94] Quoc-Viet Pham, Nhan Thanh Nguyen, Thien Huynh-The, **Long B. Le**, Kyungchun Lee, and Won-Joo Hwang, “Intelligent Radio Signal Processing: A Survey,” *IEEE Access*, vol. 9, pp. 83818-83850, 2021.

[J93] Ti Ti Nguyen, Vu N. Ha, **Long B. Le**, and Robert Schober, “Joint data compression and computation offloading in hierarchical fog-cloud systems,” *IEEE Transactions on Wireless Communications*, vol. 19, no. 1, pp 293-309, January 2020.

[J92] Tung Phan, Dong Ngoduy, and **Long B. Le**, “A Cooperative Space Distribution Method for Autonomous Vehicles at A Lane-Drop Bottleneck on Multi-Lane Freeways,” *IEEE Transactions on Intelligent Transportation Systems*, to appear.

[J91] Jeongho Kwak, **Long B. Le**, G Iosifidis, K Lee, DI Kim, “Collaboration of network operators and cloud providers in software-controlled networks,” *IEEE Network*, vol. 34, no. 5, pp. 98-105, 2020.

[J90] Quoc Viet Pham, F Fang, V. N Ha, M. J. Piran, M. Le, **Long B. Le**, W. J. Hwang, and Z. Ding, “A survey of multi-access edge computing in 5G and beyond: Fundamentals, technology integration, and state-of-the-art,” *IEEE Access*, vol. 8, pp. 116974-117017, 2020.

[J89] Think D Tran, and **Long B. Le**, “Resource Allocation for Multi-Tenant Network Slicing: A Multi-Leader Multi-Follower Stackelberg Game Approach,” *IEEE Transactions on Vehicular Technology*, vol.

69, no. 8, pp. 8886-8899, August 2020.

[J88] Tri Nguyen and **Long B. Le**, “Interference Cancellation, Channel Estimation, and Symbol Detection for Communications on Overlapping Channels,” *IEEE Access*, vol. 8, pp. 89822-89838, 2020.

[J87] Ti Ti Nguyen, Vu Nguyen Ha, **Long B. Le**, and Robert Schober, “Joint data compression and computation ofloading in hierarchical fog-cloud systems,” *IEEE Transactions on Wireless Communications*, to appear.

[J86] Vu N. Ha, Ti Ti Nguyen, and **Long B. Le**, “Admission control and network slicing for multi-numerology 5G wireless networks,” *IEEE Networking Letters*, to appear.

[J85] Hoang Vu, Tai Ho, and **Long B. Le**, “Mobility-aware computation offloading in MEC based vehicular wireless networks,” *IEEE Communications Letters*, to appear.

[J84] Tadilo Bogale, Xianbin Wang, and **Long B. Le**, “Adaptive channel prediction, beamforming and scheduling design for 5G V2I network: Analytical and machine learning approaches,” *IEEE Transactions on Vehicular Technology*, accepted

[J83] Tung Thanh Phan, Dong Ngoduy, and **Long B. Le**, “Space distribution method for autonomous vehicles at a signalized multi-lane intersection,” *IEEE Transactions on Intelligent Transportation Systems*, to appear.

[J82] Ti Ti Nguyen, Vu Nguyen Ha, and **Long B. Le**, “Wireless scheduling for heterogeneous services with mixed numerology in 5G wireless networks,” *IEEE Communications Letters*, to appear.

[J81] Tadilo Bogale, **Long B. Le**, Xianbin Wang, and Luc Vandendorpe, “Pilot contamination mitigation for wideband massive MIMO systems,” *IEEE Transactions on Communications*, to appear.

[J80] Jeongho Kwak, **Long B. Le**, H. Kim, and Xianbin Wang, “Two time-scale edge caching and BS association for power-delay tradeoff in multi-cell networks,” *IEEE Transactions on Communications*, vol. 67, no. 8, pp. 5506-5519, August 2019..

[J79] Duong Nguyen, **Long B. Le**, and Vijay Bhargava, “A market-based framework for multi-resource allocation in fog computing” *IEEE/ACM Transactions on Networking*, vol. 27, no. 3, pp. 1151-1164, June 2019.

[J78] Ti Ti Nguyen, **Long B. Le**, and Quan Le-Trung, “Computation offloading in MIMO based mobile edge computing systems under perfect and imperfect CSI estimation,” *IEEE Transactions on Services Computing*, to appear.

[J77] Tai Manh Ho, Nguyen H. Tran, **Long B. Le**, Zhu Han, Ahsan Kazmi, and Choong Seon Hong, “Wireless virtualization with energy efficiency optimization for wireless heterogeneous networks,” *IEEE Transactions on Mobile Computing*, vol. 18, no. 10, pp. 2386-2400, Oct. 2019.

[J76] Quoc-Viet Pham, **Long B. Le**, Sang-Hwa Chung, and Won-Joo Hwan, “Mobile edge computing with wireless backhaul: Join task offloading and resource allocation,” *IEEE Access*, vol. 7, pp. 16444-16459, 2019.

[J75] Duong Nguyen, **Long B. Le**, and Vijay Bhargava, “Price-based resource allocation for edge computing: A market equilibrium approach,” *IEEE Transactions on Cloud Computing*, to appear.

[J74] Hieu Nguyen and **Long B. Le**, “Sharing profit from joint offering of a group of wind power producers

in day ahead markets,” *IEEE Transactions on Sustainable Energy*, vol. 9, no. 4, pp. 1921-1934, October 2018.

[J73] Thinkh Tran, Tuong Hoang, and **Long B. Le**, “Caching for heterogeneous small-cell networks with bandwidth allocation and caching-aware BS association”, *IEEE Wireless Communications Letters*, vol. 8, no. 1, pp. 49-52, February 2019.

[J72] Hieu Nguyen, **Long B. Le**, and Zhaoyu Wang, “A bidding strategy for virtual power plants with intraday demand response market exchange using stochastic programming,” *IEEE Transactions on Industry Applications*, vol. 54, no. 4, pp. 3044-3055, July-August 2018.

[J71] Shree Sharma, Tadilo Bogale, **Long B. Le**, Symeon Chatzinotas, Xianbin Wang, and Bjorn Ottersten, “Dynamic spectrum sharing in 5G wireless networks with full-duplex technology: Recent advances and research challenges,” *IEEE Communications Surveys and Tutorials*, vol. 20, no. 1, pp. 674-707, First quarter 2018.

[J70] Jeongho Kwak, Y. Kim, **Long B. Le**, and Song Chong, “Hybrid content caching in 5G wireless networks: Cloud versus edge caching,” *IEEE Transactions on Wireless Communications*, vol. 17, no. 5, pp. 3030-3045, May 2018. (Listed among top-accessed IEEE TWC papers in July 2018)

[J69] Thinkh Tran and **Long B. Le**, “Joint resource allocation and content caching in virtualized content-centric wireless networks,” *IEEE Access*, vol. 6, pp. 11329-11341, 2018.

[J68] Tadilo Bogale, Xianbin Wang, and **Long B. Le**, “Machine learning techniques for next-generation context-aware wireless networks,” *ITU Journal: ICT Discoveries*, Special issue no. 1-2, Feb. 2018.

[J67] Tuong Hoang and **Long B. Le**, “Joint prioritized scheduling and resource allocation for OFDMA-based wireless networks,” *IEEE Transactions on Wireless Communications*, vol. 17, no. 1, pp. 310-323, Jan. 2018.

[J66] Vu N. Ha and **Long B. Le**, “End-to-end network slicing in virtualized OFDMA-based cloud radio access networks,” *IEEE Access*, vol. 5, pp. 18675-18691, 2017.

[J65] Duy Nguyen, **Long B. Le**, Tho Le-Ngoc, Robert W. Heath, “Hybrid MMSE precoding and combining design for mmWave multiuser systems,” *IEEE Access*, vol. 5, pp. 19167-19181, 2017.

[J64] Tadilo Bogale, **Long B. Le**, Xianbin Wang, and Luc Vandendorpe, “Multipath multiplexing for capacity enhancement in SIMO wireless systems,” *IEEE Transactions on Wireless Communications*, vol. 16, no. 10, pp 6895-6911, Oct. 2017.

[J63] Dinh Thai Hoang, Dusit Niyato, Ping Wang, Dong In Kim, and **Long B. Le**, “Optimal data scheduling and admission control for backscatter sensor networks,” *IEEE Transactions on Communications*, vol. 65, no. 5, pp. 2062-2077, May 2017.

[J62] Hieu Nguyen and **Long B. Le**, “Bi-objective based cost allocation for cooperative demand-side resource aggregators,” *IEEE Transactions on Smart Grid*, vol. 9, no. 5, pp. 4220-4235, September 2018.

[J61] Tuan LeAnh, Nguyen H. Tran, Walid Saad, **Long B. Le**, Dusit Niyato, Tai Manh Ho, and Choong Seon Hong, “Matching theory for distributed user association and resource allocation in cognitive femtocell network,” *IEEE Transactions on Vehicular Technology*, vol. 66, no. 9, pp. 8413-8428, Sept. 2017.

[J60] Duy Nguyen, **Long B. Le**, and Tho Le-Ngoc, “Optimal dynamic point selection for power minimization in multiuser downlink CoMP,” *IEEE Transactions on Wireless Communications*, vol. 16, no. 1, pp.

619-633, Jan. 2017.

[J59] Redouane Sassioui, Mohammed Jabi, Leszek Szczecinski, **Long B. Le**, Mustapha Benjillali, Benoit Pelletier, “HARQ and AMC: Friends or foes?” *IEEE Transactions on Communications*, vol. 65, no. 2, pp. 635-650, Feb. 2017.

[J58] Tuong Hoang, **Long B. Le**, and Tho Le-Ngoc, “Joint mode selection and resource allocation for relay-based D2D communications,” *IEEE Communications Letters*, vol. 21, no. 2, pp. 398-401, Feb. 2017.

[J57] Phuong Luong, Tri Nguyen, **Long B. Le**, Ngoc-Dung Dao, and Ekram Hossain, “Energy-efficient WiFi offloading and network management in heterogeneous wireless networks,” *IEEE Access*, vol. 4, pp. 10210-10227, Dec. 2016.

[J56] Tuong Hoang, **Long B. Le**, and Tho Le-Ngoc, “Resource allocation for D2D communication underlaid cellular networks using graph-based approach,” *IEEE Transactions on Wireless Communications*, vol. 5, no. 10, pp. 7099-7113, Oct. 2016.

[J55] Hyangwon Lee, Jeongho Kwak, and **Long B. Le**, “Robust power allocation in cognitive radio networks with uncertain knowledge of interference,” *IEEE Wireless Communications Letters*, vol. 5, no. 5, pp. 468-471, 2016.

[J54] Tan Le and **Long B. Le**, “Joint data compression and MAC protocol design for smartgrids with renewable energy,” *Wireless Communications and Mobile Computing*, vol. 16, no. 16, pp. 2590-2604, July 2016.

[J53] Tadilo Bogale, **Long B. Le**, Afshin Haghighat and Luc Vandendorpe, “On the number of RF chains and phase shifters, and scheduling design with hybrid analog-digital beamforming,” *IEEE Transactions on Wireless Communications*, vol. 15, no. 5, pp. 3311-3326, May 2016. (Listed among top-accessed IEEE TWC papers in May, June, July, August, September, October, and December 2016, January, February, and March 2017)

[J52] Khoa Phan, Tho Le-Ngoc, and **Long B. Le**, “Optimal resource allocation for buffer-aided relaying with statistical QoS constraint,” *IEEE Transactions on Communications*, vol. 64, no. 3, pp. 959-972, March 2016.

[J51] Duong Nguyen, Hieu Nguyen, and **Long B. Le**, “Dynamic pricing design for demand response integration in power distribution networks,” *IEEE Transactions on Power Systems*, vol. 31, no. 5, pp. 3457-3472, Sept. 2016.

[J50] S. M. Ahsan Kazmi, Nguyen H. Tran, Walid Saad, **Long B. Le**, Tai Manh Ho, Choong Seon Hong, “Optimized resource management in heterogeneous wireless networks,” *IEEE Communications Letters*, vol. 20, no. 5, pp. 974-977, May 2016.

[J49] Tai Manh Ho, Nguyen H. Tran, **Long B. Le**, Walid Saad, S.M Ahsan Kazmi, Choong Seon Hong, “Coordinated resource partitioning and data offloading in wireless heterogeneous networks,” *IEEE Communications Letters*, vol. 20, no. 5, pp. 974-977, May 2016.

[J48] Le Thanh Tan and **Long B. Le**, “Design and optimal configuration of full-duplex MAC protocol for cognitive radio networks considering self-interference,” *IEEE Access*, vol. 3, 2015.

[J47] Phuong Luong, Tri Nguyen, and **Long B. Le**, “Throughput analysis for coexisting IEEE 802.14.5 and IEEE 802.11 networks under unsaturated traffic,” *EURASIP Journal on Wireless Communications*

and Networking, 2016.

[J46] Tadilo Bogale, **Long B. Le**, and Xianbin Wang, “Hybrid analog-digital channel estimation and beamforming: Training-throughput tradeoff,” *IEEE Transactions on Communications*, vol. 63, no. 2, pp. 5235-5249, Dec. 2015.

[J45] Tadilo Bogale and **Long B. Le**, “Massive MIMO and mmWave for 5G wireless HetNet: Potentials and challenges,” *IEEE Vehicular Technology Magazine*, vol. 11, no. 1, pp. 64-75, February 2016. (Listed among top-accessed IEEE VT Mag. papers in March 2016-present 2019)

[J44] **Long B. Le**, Vincent Lau, Eduard Jorswieck, Ngoc-Dung Dao, Afshin Haghighat, Dong In Kim, and Tho Le-Ngoc, “Enabling 5G mobile wireless technologies,” *EURASIP J. Wirel. Commun. Networking.*, 218, 2015.

[J43] Shree Sharma, Tadilo Bogale, Symeon Chatzinotas, Björn Ottersten, **Long B. Le**, and Xianbin Wang, “Cognitive radio techniques under practical imperfections: A survey,” *IEEE Communications Surveys and Tutorials*, vol. 17, no. 4, pp. 1858-1884, 4th quarter 2015.

[J42] Vu N. Ha, **Long B. Le**, and Ngoc-Dung Dao, “Coordinated multipoint transmission design for Cloud-RANs with limited fronthaul capacity constraints,” *IEEE Transactions on Vehicular Technology*, vol. 65, no. 9, pp. 7432-7447, Sept. 2016.

[J41] Tuong Hoang, **Long B. Le**, and Tho Le-Ngoc, “Energy-efficient resource allocation for D2D communications in cellular networks,” *IEEE Transactions on Vehicular Technology*, vol. 65, no. 9, pp. 6972-6986, Sept. 2016.

[J40] Tri Minh Nguyen, Vu N. Ha, and **Long B. Le**, “Resource allocation optimization in multi-user multi-cell massive MIMO networks considering pilot contamination,” *IEEE Access*, 3, 1272–1287, 2015.

[J39] Tadilo Bogale, Luc Vandendorpe, and **Long B. Le**, “Wideband sensing and optimization for cognitive radio networks with noise variance uncertainty,” *IEEE Transactions on Communications*, vol. 63, no. 4, pp. 1091–1105, April 2015.

[J38] Mehdi Rasti, Monowar Hasan, **Long B. Le**, and Ekram Hossain, “Distributed uplink power control for multi-cell cognitive radio networks,” *IEEE Transactions on Communications*, vol. 63, no. 3, pp. 628–642, Mar. 2015.

[J37] Duy Nguyen, **Long B. Le**, and Tho Le-Ngoc, “Multiuser admission control and beamforming optimization algorithms for MISO heterogeneous networks,” *IEEE Access*, vol. 3, pp. 759–773, 2015.

[J36] Thant Zin Oo, Nguyen H. Tran, Duc Ngoc Minh Dang, Zhu Han, **Long B. Le**, and Choong Seon Hong, “OMF-MAC: An opportunistic matched filter-based MAC in cognitive radio networks,” *IEEE Transactions on Vehicular Technology*, vol. 65, no. 4, pp. 2544-2559, April 2016.

[J35] Nguyen Tran, **Long B. Le**, Shaolei Ren, Zhu Han, and Chong S. Hong, “Joint pricing and load balancing for cognitive spectrum access: Non-cooperation vs cooperation,” *IEEE Journal on Selected Areas in Communications - Cognitive Radio Series*, vol. 33, no. 5, pp. 972–985, May 2015.

[J34] Hieu Nguyen, Duong Nguyen, and **Long B. Le**, “Energy management for households with solar assisted thermal load considering renewable energy and price uncertainty,” *IEEE Transactions on Smart Grid*, vol. 6, no. 1, pp. 301–314, Jan. 2015.

[J33] Duong Nguyen and **Long B. Le**, “Risk-constrained profit maximization for microgrid aggregators

- with demand response,” *IEEE Transactions on Smart Grid*, vol. 6, no. 1, pp. 135–146, Jan. 2015.
- [J32] Duong Nguyen and **Long B. Le**, “Optimal bidding strategy for microgrids considering renewable energy and building thermal dynamics,” *IEEE Transactions on Smart Grid*, vol. 5, no. 4, pp. 1608–1620, July 2014.
- [J31] Le Thanh Tan and **Long B. Le**, “Joint cooperative spectrum sensing and MAC protocol design for multi-channel cognitive radio networks,” *EURASIP Journal on Wireless Communications and Networking*, 2014 (Listed no. 1 among most highly-accessed papers in this journal, July–August 2014).
- [J30] Cuong Do, Nguyen Tran, Zhu Han, **Long B. Le**, Sungwon Lee, and Choong Seon Hong, “Optimal pricing for duopoly in cognitive radio networks: Cooperate or not cooperate,” *IEEE Transactions on Wireless Communications*, vol. 13, no. 5, pp. 2574–2587, May 2014.
- [J29] Vu N. Ha and **Long B. Le**, “Fair resource allocation for OFDMA femtocell networks with macrocell protection,” *IEEE Transactions on Vehicular Technology*, vol. 63, no. 3, pp. 1388–1401, March 2014.
- [J28] Duong Nguyen and **Long B. Le**, “Joint optimization of electric vehicle and home energy scheduling considering user comfort preference,” *IEEE Transactions on Smart Grid*, vol. 5, no. 1, pp. 188–199, Jan. 2014.
- [J27] Vu N. Ha and **Long B. Le**, “Distributed base station association and power control for heterogeneous cellular networks,” *IEEE Transactions on Vehicular Technology*, vol. 63, no. 1, pp. 282–296, Jan. 2014.
- [J26] Mui Van Nguyen, Sungwon Lee, Sung-jin You, Choong Seon Hong, and **Long B. Le**, “Cross-layer design for congestion, contention, and power control in CRAHNs under packet collision constraints,” *IEEE Transactions on Wireless Communications*, vol. 12, no. 11, pp. 5557–5571, Nov. 2013.
- [J25] M. Moghadari, Ekram Hossain, and **Long B. Le**, “Delay-optimal distributed scheduling in multi-user multi-relay cellular wireless networks,” *IEEE Transactions on Communications*, vol. 61, no. 4, pp. 1349–1360, April 2013.
- [J24] **Long B. Le**, Dusit Niyato, Ekram Hossain, Dong In Kim, and Dinh T. Hoang, “QoS-aware and energy-efficient resource management in OFDMA femtocells,” *IEEE Transactions on Wireless Communications*, vol. 12, no. 1, pp. 180–194, Jan. 2013 (Listed among top-accessed IEEE TWC papers in January, February, March, and September 2013).
- [J23] Duy Ngo, **Long B. Le**, and Tho Le-Ngoc, “Distributed Pareto-optimal power control for utility maximization in femtocell networks,” *IEEE Transactions on Wireless Communications*, vol. 11, no. 10, pp. 3434–3446, Oct. 2012 (Listed among top-accessed IEEE TWC papers in October and November 2012).
- [J22] Guner D. Celik, **Long B. Le**, and Eytan Modiano, “Dynamic server allocation over time varying channels with switchover delay,” *IEEE Transactions on Information Theory*, vol. 58, no. 9, pp. 5856–5877, Sept. 2012.
- [J21] Le Thanh Tan and **Long B. Le**, “Channel assignment with access contention resolution for cognitive radio networks,” *IEEE Transactions on Vehicular Technology*, vol. 61, no. 6, pp. 2808–2823, July 2012.
- [J20] **Long B. Le**, Eytan Modiano, and Ness B. Shroff, “Optimal control of wireless networks with finite buffers,” *IEEE/ACM Transactions on Networking*, vol. 20, no. 4, pp. 1316–1329, Aug. 2012.
- [J19] Duy Ngo, **Long B. Le**, Tho Le-Ngoc, Ekram Hossain, and Dong In Kim, “Distributed interference management in two-tier CDMA femtocell networks,” *IEEE Transactions on Wireless Communications*,



vol. 11, no. 3, pp. 979–989, Mar. 2012 (Listed among top-accessed IEEE TWC papers in March, April, and May 2012).

[J18] Phond Phunchongharn, Ekram Hossain, **Long B. Le**, and S. Camorlinga, “Robust scheduling and power control for vertical spectrum sharing in STDMA wireless networks,” *IEEE Transactions on Wireless Communications*, vol. 11, no. 5, pp. 1850–1860, May 2012.

[J17] Nazmus Saquib, Ekram Hossain, **Long B. Le**, and Dong In Kim, “Interference management in OFDMA femtocell networks: Issues and approaches,” *IEEE Wireless Communications*, vol. 19, no. 3, pp. 86–95, June 2012 (Listed among top-accessed IEEE WC papers in March 2013).

[J16] Hyang-Won Lee, Eytan Modiano, and **Long B. Le**, “Distributed throughput maximization in wireless networks via random power allocation,” *IEEE Transactions on Mobile Computing*, vol. 11, no. 4, pp. 577–590, April 2012.

[J15] Le Thanh Tan and **Long B. Le**, “Distributed MAC protocol for cognitive radio networks: Design, analysis, and optimization,” *IEEE Transactions on Vehicular Technology*, vol. 60, no. 8, pp. 3990–4003, Oct. 2011.

[J14] Patrick Mitran, **Long B. Le**, and Catherine Rosenberg, “Queue-aware resource allocation for down-link OFDMA cognitive radio networks,” *IEEE Transactions on Wireless Communications*, vol. 9, no. 10, pp. 3100–3111, Oct. 2010.

[J13] **Long B. Le** and Ravi R. Mazumdar, “Control of wireless networks with flow level dynamics under constant time scheduling,” *ACM Wireless Networks*, 2010.

[J12] Khoa Phan, **Long B. Le**, Sergiy A. Vorobyov, and Tho Le-Ngoc, “Power allocation and admission control in multiuser relay networks via convex programming: Centralized and distributed schemes,” *EURASIP Journal on Wireless Communications and Networking*, 2009 (special issues on Optimization Techniques in Wireless Communications).

[J11] Dong In Kim, **Long B. Le**, and Ekram Hossain, “Joint rate and power allocation for cognitive radios in dynamic spectrum access environment,” *IEEE Transactions on Wireless Communications*, vol. 7, no. 12, pp. 5517–5527, Dec. 2008.

[J10] **Long B. Le** and Ekram Hossain, “Resource allocation for spectrum underlay in cognitive radio networks,” *IEEE Transactions on Wireless Communications*, vol. 7, no. 12, pp. 5306–5315, Dec. 2008.

[J9] **Long B. Le** and Ekram Hossain, “Cross-layer optimization frameworks for multihop wireless networks using cooperative diversity,” *IEEE Transactions on Wireless Communications*, vol. 7, no. 7, pp. 2592–2602, July 2008.

[J8] **Long B. Le** and Ekram Hossain, “An analytical model for ARQ cooperative diversity in multihop wireless networks,” *IEEE Transactions on Wireless Communications*, vol. 7, no. 5, pp. 1786–1791, May 2008.

[J7] **Long B. Le** and Ekram Hossain, “Tandem queue models with applications to QoS routing in multihop wireless networks,” *IEEE Transactions on Mobile Computing*, vol. 7, no. 8, pp. 1025–1040, Aug. 2008.

[J6] **Long B. Le**, Ekram Hossain, and Tho Le-Ngoc, “Interaction between radio link level truncated ARQ and TCP in multi-rate wireless networks: A cross-layer performance analysis,” *IET Communications*, vol. 1, no. 5, pp. 821–830, 2007 (special issue on Wireless Mobile Networks: Cross-Layer Communication).

- [J5] **Long B. Le**, Ekram Hossain, and Michele Zorzi, “Queueing analysis for GBN and SR ARQ protocols under dynamic radio link adaptation with non-zero feedback delay,” *IEEE Transactions on Wireless Communications*, vol. 6, no. 9, pp. 3418-3428, Sept. 2007.
- [J4] **Long B. Le** and Ekram Hossain, “Multihop cellular networks: Potential gains, research challenges, and a resource allocation framework,” *IEEE Communications Magazine*, vol. 45, no. 9, pp. 66-73, Sept. 2007.
- [J3] **Long B. Le**, Ekram Hossain, and Attahiru S. Alfa, “Delay statistics and throughput performance for multi-rate wireless networks under ARQ and multiuser diversity,” *IEEE Transactions on Wireless Communications*, vol. 5, no. 11, pp. 3234-3243, Nov. 2006.
- [J2] **Long B. Le**, Ekram Hossain, and Attahiru S. Alfa, “Radio link level performance evaluation in wireless networks using multi-rate transmission with ARQ-based error control,” *IEEE Transactions on Wireless Communications*, vol. 5, no. 10, pp. 2647-2653, Oct. 2006.
- [J1] **Long B. Le**, Ekram Hossain, and Attahiru S. Alfa, “Service differentiation in multi-rate wireless networks with weighted round-robin scheduling and ARQ-based error control,” *IEEE Transactions on Communications*, vol. 54, no. 2, pp. 208-215, Feb. 2006.

### Conference Papers(Accepted/Appeared)

- [C129] Tuan Vu Truong, and **Long B. Le**, “A Blockchain-Based Framework for Secure Digital Asset Management,” in *Proc. IEEE ICC*, 2023.
- [C128] Minh Dat Nguyen, **Long B. Le**, and Andr Girard, “Joint computation offloading, trajectory control, user scheduling, and resource allocation in SAGIN,” in *Proc. IEEE GLOBECOM*, 2022.
- [C127] Minh Dat Nguyen, **Long B. Le**, and Andr Girard, “Computation offloading and resource allocation in SAGIN with multi-hop satellite communications,” in *Proc. IEEE GLOBECOM - Workshop*, 2022.
- [C126] Minh Dat Nguyen, **Long B. Le**, and Andr Girard, “Trajectory control and resource allocation for UAV-based networks with wireless backhauls,” in *Proc. IEEE ICC*, 2021.
- [C125] Minh Dat Nguyen, **Long B. Le**, Andre Girard, “UAV trajectory and sub-channel assignment for UAV based wireless networks,” in *Proc. IEEE Wireless Communications and Networking Conference (WCNC)*, 2020.
- [C124] Minh Tri Nguyen and **Long B. Le**, “Flight Scheduling and Trajectory Control in UAV-Based Wireless Networks,” in *Proc. IEEE Wireless Communications and Networking Conference (WCNC)*, 2020.
- [C123] Phuong Duy Nguyen and **Long B. Le**, “Joint computation offloading, SFC placement, and resource allocation for multi-site MEC systems,” in *Proc. IEEE Wireless Communications and Networking Conference (WCNC)*, 2020.
- [C122] Minh Dat Nguyen, Tai Manh Ho, **Long B. Le**, Andre Girard, “UAV placement and bandwidth allocation for UAV based wireless networks,” in *Proc. IEEE GLOBECOM’2019*, Dec. 2019.
- [C121] Phuong-Duy Nguyen, Vu Ha, and **Long B. Le**, “Computation offloading and resource allocation for backhaul limited cooperative MEC,” in *Proc. IEEE VTC-Fall’2019*, Sept. 2019.
- [C120] Tri Nguyen and **Long B. Le**, “NOMA user pairing and UAV placement in UAV-based wireless

networks,” in *Proc. IEEE ICC'2019*, May 2019.

[C119] Think Tran, **Long B. Le**, Tung Vu, and Duy Ngo, “Stackelberg game based network slicing for joint wireless access and backhaul resource allocation,” in *Proc. IEEE ICC'2019*, May 2019.

[C118] Tadilo Bogale, Xianbin Wang, and **Long B. Le**, “Dominant CIR tap identification for OFDM channels: Adaptive bootstrapping approach,” in *Proc. IEEE ICC'2019*, May 2019.

[C117] Think Tran and **Long B. Le**, “Hybrid backscatter and underlay transmissions in RF-powered cognitive radio networks,” in *Proc. IEEE ICT'2019*, April 2019.

[C116] Tri Nguyen and **Long B. Le**, “Channel estimation and symbol detection for communications on overlapping channels,” in *Proc. IEEE GLOBECOM'2018, Workshop on Emerging Technologies for 5G and beyond wireless and mobile networks*, December 2018.

[C115] TiTi Nguyen and **Long B. Le**, “Joint resource allocation, computation offloading, and path planning for UAV based hierarchical fog-cloud mobile systems,” in *Proc. IEEE International Conference on Communications and Electronics (ICCE)*, July 2018 (**Best student paper award**).

[C114] TiTi Nguyen and **Long B. Le**, “Computation offloading in MIMO based mobile edge computing systems under perfect and imperfect CSI estimation,” in *Proc. IEEE ICC'2018*, May 2018.

[C113] Tadilo Bogale, **Long B. Le**, and Xianbin Wang, “Joint CSI estimation, beamforming and scheduling design for wideband massive MIMO system,” in *Proc. IEEE ICC'2018*, May 2018.

[C112] Duong Nguyen, **Long B. Le**, and Vijay Bhagava, “Edge computing resource procurement: An online optimization approach,” in *Proc. IEEE WF-IoT'2018*, Feb. 2018.

[C111] TiTi Nguyen and **Long B. Le**, “Joint computation offloading and resource allocation in cloud based wireless HetNets,” in *Proc. IEEE GLOBECOM'2017*, Dec. 2017.

[C110] Think Tran and **Long B. Le**, “Joint resource allocation and content caching in virtualized multi-cell wireless networks,” in *Proc. IEEE GLOBECOM'2017*, Dec. 2017.

[C109] Jeongho Kwak, **Long B. Le**, and Xianbin Wang, “Two time-scale content caching and user association in 5G heterogeneous networks,” in *Proc. IEEE GLOBECOM'2017*, Dec. 2017.

[C108] Minh Tri Nguyen and **Long B. Le**, “Adjacent channel interference cancellation for robust spectrum sharing in satellite communications systems,” in *Proc. IEEE PIMRC'2017*, Oct. 2017.

[C107] Jeongho Kwak, Joonyoung Moonz, Hyang-Won Lee, and **Long B. Le**, “Dynamic network slicing and resource allocation for heterogeneous wireless services,” in *Proc. IEEE PIMRC'2017*, Oct. 2017.

[C106] Tadilo Bogale, Xianbin Wang, and **Long B. Le**, “Adaptive channel prediction, beamforming and scheduling design for 5G V2I network,” in *Proc. IEEE VTC-Fall'2017*, Sept. 2017.

[C105] Tuong Hoang and **Long B. Le**, “Content caching for heterogeneous small-cell networks with intelligent content access,” in *Proc. IEEE VTC-Fall'2017*, Sept. 2017.

[C104] Dai Nguyen, Minh Tri Nguyen, and **Long B. Le**, “Cognitive radio based resource allocation for sum rate maximization in dual satellite systems,” in *Proc. IEEE VTC-Fall'2017*, Sept. 2017.

[C103] TiTi Nguyen and **Long B. Le**, “Computation offloading leveraging computing resources from edge cloud and mobile peers,” in *Proc. IEEE ICC*, May 2017.

- [C102] Thinkh Tran and **Long B. Le**, “Stackelberg game approach for wireless virtualization design in wireless networks,” in *Proc. IEEE ICC’2017*, May 2017.
- [C101] Jeongho Kwak, Yeongjin Kim, **Long B. Le**, and Song Chong, “Hybrid content caching for low end-to-end latency in cloud-based wireless networks,” in *Proc. IEEE ICC’2017*, May 2017.
- [C100] Hoang Dinh, Dusit Niyato, Ping Wang, Dong In Kim, and **Long B. Le**, “Overlay RF-powered backscatter cognitive radio networks: A game theoretic approach,” in *Proc. IEEE ICC’2017*, May 2017.
- [C99] Tam Tran, Vu Ha, **Long B. Le**, and Andre Girard, “Uplink-downlink matching based resource allocation for full-duplex OFDMA wireless cellular networks,” in *Proc. IEEE WCNC’2017*, Mar. 2017.
- [C98] Thinkh Tran and **Long B. Le**, “Resource allocation for efficient bandwidth provisioning in virtualized wireless networks,” in *Proc. IEEE WCNC*, Mar. 2017.
- [C97] Tadilo Bogale, **Long B. Le**, Xianbin Wang, and Luc Vandendorpe, “Orthogonal faster than Nyquist transmission for SIMO wireless systems,” in *Proc. IEEE GLOBECOM’2016*, Dec. 2016.
- [C96] Redouane Sassioui, Mohammed Jabi, Leszek Szczecinski, **Long B. Le**, Mustapha Benjillali, and Benoit Pelletier, “HARQ and AMC: Friends or Foes?” in *Proc. IEEE GLOBECOM’2016*, Dec. 2016.
- [C95] Shree Sharma, Tadilo Bogale, S. Chatzinotas, Xianbin Wang, and **Long B. Le**, “Physical layer aspects of wireless IoT,” in *Proc. IEEE ISWCS*, Sept. 2016.
- [C94] Hieu Nguyen and **Long B. Le**, “Online ensemble learning for security assessment in PMU-based power systems,” in *Proc. IEEE ICSET’2016*, Nov. 2016 (invited paper).
- [C93] Hieu Nguyen and **Long B. Le**, “Minmax profit sharing scheme for cooperative wind power producers,” in *Proc. IEEE ICSET’2016*, Nov. 2016 (invited paper).
- [C92] Hieu Nguyen and **Long B. Le**, “Energy bidding for virtual power plant with intraday demand response exchange market using stochastic programming,” in *Proc. IEEE ICSET’2016*, Nov. 2016 (**Best paper award**).
- [C91] Tan Le and **Long B. Le**, “Multi-channel MAC protocol for full-duplex cognitive radio networks with optimized access control and load balancing,” in *Proc. IEEE ICC’2016*, May 2016.
- [C90] Vu Ha and **Long B. Le**, “Resource allocation for uplink OFDMA C-RANs with limited computation and fronthaul capacity,” in *Proc. IEEE ICC’2016*, May 2016.
- [C90] Duy Nguyen, **Long B. Le**, and Zhu Han, “Optimal uplink and downlink channel assignment in a full-duplex multiuser system,” in *Proc. IEEE ICC’2016*, May 2016.
- [C89] Duy Nguyen, **Long B. Le**, and Tho Le-Ngoc, “Hybrid MMSE precoding for mmWave multiuser MIMO systems,” in *Proc. IEEE ICC’2016*, May 2016.
- [C88] Tuong Hoang, **Long B. Le**, and Tho Le-Ngoc, “Joint prioritized link scheduling and resource allocation for OFDMA-based wireless networks,” in *Proc. IEEE ICC’2016*, May 2016.
- [C87] Tam Tran, Vu Ha, **Long B. Le**, and Andre Girard, “Dynamic resource allocation for full-duplex OFDMA wireless cellular networks,” in *Proc. IEEE VTC-Fall’2016*, Sept. 2016.
- [C86] Shree Sharma, Tadilo Bogale, **Long B. Le**, et al., “Two-phase concurrent sensing and transmission scheme for full duplex cognitive radio,” in *Proc. IEEE VTC-Fall’2016*, Sept. 2016.

- [C85] Vu N. Ha and **Long B. Le**, “Computation capacity constrained joint transmission design for C-RANs,” in *Proc. IEEE WCNC’2016*, April 2016.
- [C84] Redouane Sassioui, Leszek Szczecinski, **Long B. Le**, and Mustapha Benjillali, “AMC and HARQ: Effective capacity analysis,” in *Proc. IEEE WCNC’2016*, April 2016.
- [C83] Dai Nguyen and **Long B. Le**, “Resource allocation for multibeam MISO satellite systems: Sum rate versus proportional fair optimization,” in *Proc. IEEE WCNC’2016, Workshop on Communications in Extreme Conditions (ComExCon 2016)*, April 2016.
- [C82] Tan Le and **Long B. Le**, “Distributed MAC protocol design for full-duplex cognitive radio networks,” in *Proc. IEEE GLOBECOM’2015*, Dec. 2015.
- [C81] Tadilo Bogale, **Long B. Le**, Xianbin Wang, and Luc Vandendorpe, “Pilot contamination mitigation for wideband massive MIMO: Number of cells vs multipath,” in *Proc. IEEE GLOBECOM’2015*, Dec. 2015.
- [C80] Tuong Hoang, **Long B. Le**, and Tho Le-Ngoc, “Dual decomposition method for energy-efficient resource allocation in D2D communications underlying cellular networks,” in *Proc. IEEE GLOBECOM’2015*, Dec. 2015.
- [C79] Khoa Phan, **Long B. Le**, and Tho Le-Ngoc, “Relay selection, link scheduling, and rate allocation in dual-hop buffer-aided networks with statistical delay constraints,” in *Proc. IEEE GLOBECOM’2015*, Dec. 2015.
- [C78] Xuan Xue, Tadilo Bogale, et al., “Hybrid analog-digital beamforming for multiuser MIMO millimeter wave relay systems,” in *Proc. IEEE ICC’2015 (invited)*, Nov. 2015.
- [C77] Tuong Hoang, **Long B. Le**, and Tho Le-Ngoc, “Radio resource management for optimizing energy efficiency of D2D communications in cellular networks,” in *Proc. IEEE PIMRC’2015*, Sept. 2015.
- [C76] Shree Sharma, Tadilo Bogale, Symeon Chatzinotas, **Long B. Le**, Xianbin Wang, and Björn Ottersten, “Improving robustness of cyclostationary detectors to cyclic frequency mismatch using Slepian basis,” in *Proc. IEEE PIMRC’2015*, Sept. 2015.
- [C75] Juan Duncan, Tadilo Bogale, **Long B. Le**, “SDR implementation of spectrum sensing for wideband cognitive radio,” in *Proc. IEEE VTC’2015*, Sept. 2015.
- [C74] Tadilo Bogale, **Long B. Le**, and Afshin Haghighat, “User scheduling for massive MIMO OFDMA systems with hybrid analog-digital beamforming,” in *Proc. IEEE ICC’2015*, June 2015.
- [C73] Tuong Hoang, **Long B. Le**, and Tho Le-Ngoc, “Energy-efficient resource allocation for D2D communications in cellular networks,” in *Proc. IEEE ICC’2015*, June 2015.
- [C72] Duy Nguyen, **Long B. Le**, and Tho Le-Ngoc, “Optimal joint base station association and beamforming design for downlink transmission,” in *Proc. IEEE ICC’2015*, June 2015.
- [C71] Tri Nguyen and **Long B. Le**, “Joint pilot assignment and resource allocation in multicell massive MIMO network: Throughput and energy efficiency maximization,” in *Proc. IEEE WCNC’2015*, Mar. 2015.
- [C70] Mahmoud Kamel, **Long B. Le**, and Andre Girard, “LTE multi-cell dynamic resource allocation for wireless network virtualization,” in *Proc. IEEE WCNC’2015*, Mar. 2015.

- [C69] Duy Nguyen, **Long B. Le**, and Tho Le-Ngoc, “Multiuser MISO precoding for sum-rate maximization under multiple power constraints,” in *Proc. IEEE WCNC’2015*, Mar. 2015.
- [C68] Vu Ha, Duy Nguyen, and **Long B. Le**, “Sparse precoding design for Cloud-RANs sum-rate maximization,” in *Proc. IEEE WCNC’2015*, Mar. 2015.
- [C67] Le Thanh Tan and **Long B. Le**, “Compressed sensing based data processing and MAC protocol design for smartgrids,” in *Proc. IEEE WCNC’2015*, Mar. 2015.
- [C66] Tai Ho, Nguyen Tran, **Long B. Le**, et. al. “Network economics approach to data offloading and resource partitioning in two-tier HetNets,” in *Proc. IEEE Integrated Network Management Symposium (IM’2015)*, May 2015.
- [C65] Vu Ha and **Long B. Le**, “Joint coordinated beamforming and admission control for fronthaul constrained Cloud-RANs,” in *Proc. IEEE GLOBECOM*, Dec. 2014 (**in top 50 best papers at IEEE GLOBECOM’2014**).
- [C64] Tadilo Bogale and **Long B. Le**, “Beamforming for multiuser massive MIMO systems: Digital versus hybrid analog-digital,” in *Proc. IEEE GLOBECOM*, Dec. 2014.
- [C63] Duy Nguyen, **Long B. Le**, Tho Le-Ngoc, “Joint multiuser downlink beamforming and admission control in heterogeneous networks,” in *Proc. IEEE GLOBECOM*, Dec. 2014.
- [C62] Tuong Hoang, **Long B. Le**, Tho Le-Ngoc, “Resource allocation for D2D communications under proportional fairness,” in *Proc. IEEE GLOBECOM*, Dec. 2014.
- [C61] Nguyen Tran, **Long B. Le**, et al., “Load balancing and pricing for spectrum access control in cognitive radio networks,” in *Proc. IEEE GLOBECOM*, Dec. 2014.
- [C60] Hieu Nguyen and **Long B. Le**, “Optimal energy management for building microgrid with constrained renewable energy utilization,” in *Proc. IEEE SmartGridComm’2014*, Nov. 2014.
- [C59] Duong Nguyen, Hieu Nguyen, and **Long B. Le**, “Coordinated dispatch of renewable energy sources and HVAC load using stochastic programming,” in *Proc. IEEE SmartGridComm’2014*, Nov. 2014.
- [C58] Mamoud Kamel, **Long B. Le**, and Andre Girard, “LTE wireless network virtualization: Dynamic slicing via flexible scheduling,” in *Proc. IEEE VTC-Fall 2014*, Sept. 2014.
- [C57] Phuong Luong and **Long B. Le**, “Throughput analysis and design for coexisting WLAN and ZigBee network,” in *Proc. IEEE VTC-Fall 2014*, Sept. 2014.
- [C56] Tadilo Bogale, Luc Vandendorpe, and **Long B. Le**, “Sensing throughput tradeoff for cognitive radio networks with noise variance uncertainty,” in *Proc. IEEE CROWNCOM’2014*, June 2014 (invited).
- [C55] Vu N. Ha, **Long B. Le**, and Ngoc-Dung Dao, “Energy-efficient coordinated transmission for Cloud-RANs: Algorithm design and tradeoff,” in *Proc. IEEE CISS’2014*, Mar. 2014.
- [C54] Tadilo Bogale and **Long B. Le**, “Pilot optimization and channel estimation for multiuser massive MIMO systems,” in *Proc. IEEE CISS’2014*, Mar. 2014.
- [C53] Duy Nguyen, **Long B. Le**, and Tho Le-Ngoc, “Power scheduling for MSE minimization with peak and average power constraints,” in *Proc. IEEE CISS’2014*, Mar. 2014.
- [C52] Hoang Dinh, Dusit Niyato, and **Long B. Le**, “Simulation-based optimization for admission control

in mobile Cloudlets,” in *Proc. IEEE ICC’2014*, June 2014.

[C51] Vu N. Ha, **Long B. Le**, and Ngoc-Dung Dao, “Cooperative transmission in Cloud RAN considering fronthaul capacity and cloud processing constraints,” in *Proc. IEEE WCNC2014*, April 2014.

[C50] Tri Nguyen and **Long B. Le**, “Cognitive spectrum access in femtocell networks exploiting nearest interferer information,” in *Proc. IEEE WCNC2014*, April 2014.

[C49] Tri Nguyen and **Long B. Le**, “Opportunistic spectrum sharing in Poisson femtocell networks,” in *Proc. IEEE WCNC2014*, April 2014.

[C48] Phuong Nguyen, Tri Nguyen, **Long B. Le**, and Ngoc-Dung Dao, “Admission control design for integrated WLAN and OFDMA-based cellular networks,” in *Proc. IEEE WCNC2014*, April 2014.

[C47] Tuong Hoang, **Long B. Le**, and Tho Le-Ngoc, “Joint subchannel and power allocation for D2D communications in cellular networks,” in *Proc. IEEE WCNC2014*, April 2014.

[C46] Duong Nguyen and **Long B. Le**, “Optimal energy trading for building microgrid with electric vehicles and renewable energy resources,” in *Proc. IEEE PES Innovative Smart Grid Technologies Conference 2014*, Feb. 2014.

[C45] Duong Nguyen and **Long B. Le**, “Optimal energy management for cooperative microgrids with renewable energy resources,” in *Proc. IEEE SmartGridComm’2013*, Vancouver, Canada, Oct. 2013.

[C44] Hieu Nguyen, Duong Nguyen, and **Long B. Le**, “Home energy management with generic thermal dynamics and user temperature preference,” in *Proc. IEEE SmartGridComm’2013*, Vancouver, Canada, Oct. 2013.

[C43] **Long B. Le**, Ekram Hossain, Dusit Niyato, and Dong In Kim, “Mobility-aware admission control with QoS guarantees in OFDMA femtocell networks,” in *Proc. IEEE ICC’2013*, Budapest, Hungary, June 2013.

[C42] Ha Nguyen Vu and **Long B. Le**, “Distributed resource allocation for OFDMA femtocell networks with macrocell protection,” in *Proc. IEEE WCNC’2013*, Shanghai, China, April 2013.

[C41] Le Thanh Tan and **Long B. Le**, “General analytical framework for cooperative sensing and access trade-off optimization,” in *Proc. IEEE WCNC’2013*, Shanghai, China, April 2013.

[C40] Mui Van Nguyen, Choong Seon Hong, and **Long B. Le**, “Cross-layer cognitive MAC design for multi-hop wireless ad-hoc networks with stochastic primary protection,” in *Proc. IEEE WCNC’2013*, Shanghai, China, April 2013.

[C39] **Long B. Le**, “Fair resource allocation for device-to-device communications in wireless cellular networks,” in *Proc. IEEE GLOBECOM’2012*, CA, USA, Dec. 2012.

[C38] **Long B. Le**, “QoS-aware BS switching and cell zooming design for OFDMA green cellular networks,” in *Proc. IEEE GLOBECOM’2012*, CA, USA, Dec. 2012.

[C37] Le Thanh Tan and **Long B. Le**, “Fair channel allocation and access design for cognitive ad hoc networks,” in *Proc. IEEE GLOBECOM’2012*, CA, USA, Dec. 2012.

[C36] Mathew Goonewardena and **Long B. Le**, “Charging of electric vehicles utilizing random wind: A stochastic optimization approach,” in *Proc. Workshop on Smart Grid Communications: Design for*

*Performance, IEEE GLOBECOM'2012*, CA, USA, Dec. 2012.

[C35] Ha Nguyen Vu and **Long B. Le**, “Hybrid access design for femtocell networks with dynamic user association and power control,” in *Proc. IEEE VTC-Fall'12*, Quebec City, Canada, Sept. 2012.

[C34] Duy Ngo, **Long B. Le**, and Tho Le-Ngoc, “Joint utility maximization in two-tier networks by distributed Pareto-optimal power control,” in *Proc. IEEE VTC-Fall'12*, Quebec City, Canada, Sept. 2012.

[C33] **Long B. Le**, Dinh T. Hoang, Dusit Niyato, Ekram Hossain, and Dong In Kim, “Joint load balancing and admission control in OFDMA-based femtocell networks,” in *Proc. IEEE ICC'2012*, Ottawa, Canada, June 2012.

[C32] Mohamad Moghaddari, Ekram Hossain, and **Long B. Le**, “Delay-optimal fair scheduling and resource allocation in multiuser wireless relay networks,” in *Proc. Workshop on Cooperative and Cognitive Mobile Networks in conjunction with IEEE ICC'2012*, Ottawa, Canada, June 2012.

[C31] Le Thanh Tan and **Long B. Le**, “Channel assignment for throughput maximization in cognitive radio networks,” in *Proc. IEEE WCNC'2012*, Paris, France, April, 2012.

[C30] Duy Ngo, **Long B. Le**, and Tho Le-Ngoc, “Distributed Pareto-optimal power control in femtocell networks,” in *Proc. IEEE PIMRC'2011*, Toronto, Ontario, Canada, Sept. 2011.

[C29] **Long B. Le** and Tho Le-Ngoc, “Joint cooperative scheduling and power control for interference-limited wireless networks,” in *Proc. IEEE PIMRC'2011*, Toronto, Ontario, Canada, Sept. 2011.

[C28] Duy T. Ngo, **Long B. Le**, Tho Le-Ngoc, Ekram Hossain, and Dong I. Kim, “Distributed interference management in femtocell networks,” in *Proc. IEEE VTC'2011-Fall*, San Francisco, CA, USA, Sept. 2011.

[C27] G. D. Celik, **Long B. Le**, and Eytan Modiano, “Scheduling in parallel queues with connectivity and delay constraints,” in *Proc. IEEE INFOCOM'2011*, Shanghai, China, April 2011.

[C26] **Long B. Le** and Tho Le-Ngoc, “QoS provisioning for OFDMA-based wireless network infrastructure in smart grids,” in *Proc. IEEE CCECE'2011*, Niagara Falls, Canada, May 2011.

[C25] **Long B. Le**, Eytan Modiano, Changhee Joo, and Ness B. Shroff, “Longest-queue-first scheduling under SINR interference model,” in *Proc. ACM MobiHoc'2010*, Chicago, IL, USA, Sept. 2010.

[C24] **Long B. Le**, “Cross-layer control for utility maximization in multihop cognitive radio networks,” in *Proc. QSHINE2010*, invited paper, Houston, TX, USA, Nov. 2010.

[C23] **Long B. Le**, Eytan Modiano, and Ness B. Shroff, “Optimal control of wireless networks with finite buffers,” to appear in *Proc. IEEE Conference on Computer Communications (INFOCOM'2010)*, San Diego, USA, Mar. 2010 (acceptance rate 17.5%).

[C22] **Long B. Le**, Krishna Jagannathan, and Eytan Modiano, “Delay analysis of maximum weight scheduling in wireless ad hoc networks,” in *Proc. Conference on Information Sciences and Systems (CISS'2009)*, Johns Hopkins University, USA, Mar. 2009.

[C21] Hyang-Won Lee, Eytan Modiano, and **Long Bao Le**, “Distributed throughput maximization in wireless networks via random power allocation,” in *Proc. Symposium on Modeling and Optimization in Mobile, Ad Hoc, and Wireless Networks (WiOpt'2009)*, Seoul, Korea, June 2009.



- [C20] Wajahat Khan, **Long B. Le**, and Eytan Modiano, “Autonomous routing algorithms for networks with wide-spread failures,” in *Proc. IEEE Military Communications Conference (MILCOM’2009)*, Boston, MA, USA, Oct. 2009.
- [C19] **Long B. Le**, Patrick Mitran, and Catherine Rosenberg, “Queue-aware subchannel and power allocation for downlink OFDM-based cognitive radio networks,” in *Proc. IEEE Wireless Communications and Networking Conference (WCNC’2009)*, Budapest, April 2009.
- [C18] Khoa Phan, **Long B. Le**, Sergiy A. Vorobyov, Tho Le-Ngoc, “Centralized and distributed power allocation in multi-user wireless relay networks,” in *Proc. IEEE International Conference on Communications (ICC’2009)*, Germany, June 2009.
- [C17] Patrick Mitran, **Long B. Le**, and Catherine Rosenberg, “Resource allocation for downlink spectrum sharing in cognitive radio networks,” in *Proc. IEEE Vehicular Technology Conference (VTC’2008 Fall)*, Calgary, Canada, Sept. 2008.
- [C16] Fabrice Guillemin, Catherine Rosenberg, **Long B. Le**, and Guillaume Vu Brugier, “Peer-to-peer traffic: From measurements to analysis,” in *Proc. IEEE Global Communications Conference (GLOBECOM’2008)*, LA, USA, Dec. 2008.
- [C15] **Long B. Le** and Ravi R. Mazumdar, “Appropriate control of wireless networks with flow level dynamics,” in *Proc. Conference on Information Sciences and Systems (CISS’2008)*, **invited paper**, Princeton, USA, Mar. 2008.
- [C14] Dong In Kim, **Long B. Le**, and Ekram Hossain, “Joint rate and power allocation for cognitive radios in dynamic spectrum access environment,” in *Proc. International Conference on Cognitive Radio Oriented Wireless Networks and Communications (CROWNCOM’2008)*, **invited paper**, Singapore, May 2008.
- [C13] **Long B. Le** and Ekram Hossain, “OSA-MAC: A multi-channel MAC protocol for opportunistic spectrum access in cognitive radio networks,” in *Proc. IEEE Wireless Communications and Networking Conference (WCNC’2008)*, Las Vegas, USA, Mar. 2008.
- [C12] Dusit Niyato, Ekram Hossain, and **Long B. Le**, “Competitive spectrum sharing and pricing in cognitive wireless mesh networks,” in *Proc. IEEE Wireless Communications and Networking Conference (WCNC’2008)*, Las Vegas, USA, Mar. 2008.
- [C11] **Long B. Le** and Ekram Hossain, “QoS-aware spectrum sharing in cognitive wireless networks,” in *Proc. IEEE Global Communications Conference (GLOBECOM’2007)*, Washington, USA, Nov. 2007.
- [C10] **Long B. Le** and Ekram Hossain, “Joint rate control and resource allocation in OFDMA wireless mesh networks,” in *Proc. IEEE Wireless Communications and Networking Conference (WCNC’2007)*, Hong Kong, Mar. 2007.
- [C9] **Long B. Le**, An T. Nguyen, and Ekram Hossain, “A tandem queue model for performance analysis in multihop wireless networks,” in *Proc. IEEE Wireless Communications and Networking Conference (WCNC’2007)*, Hong Kong, Mar. 2007.
- [C8] **Long B. Le**, Ekram Hossain, and Tho Le-Ngoc, “Effects of link-level queueing and truncated ARQ on TCP throughput in multi-rate wireless networks,” in *Proc. International Conference on Quality of Service in Heterogeneous Wired/Wireless Networks (QSHINE’2006)*, Waterloo, Canada, Aug. 2006.
- [C7] **Long B. Le** and Ekram Hossain, “Queueing analysis of go-back-N ARQ protocol in multi-rate wireless

networks with feedback delay,” in *Proc. IEEE Global Communications Conference (GLOBECOM'2005)*, St. Louis, MO, USA, 28 Nov.-2 Dec. 2005.

[C6] **Long B. Le** and Ekram Hossain, “Delay statistics for selective repeat ARQ protocol in multi-rate wireless networks with non-instantaneous feedback,” in *Proc. IEEE Global Communications Conference (GLOBECOM'2005)*, St. Louis, MO, USA, 28 Nov.-2 Dec. 2005.

[C5] **Long B. Le**, Ekram Hossain, and Attahiru S. Alfa, “Delay statistics in multi-rate wireless networks with ARQ and weighted round-robin scheduling,” in *Proc. IEEE Vehicular Technology Conference (VTC'2005 Fall)*, Dallas, TX, USA, Sept. 2005.

[C4] **Long B. Le**, Ekram Hossain, and Attahiru S. Alfa, “Queuing analysis and admission control for multi-rate wireless networks with opportunistic scheduling and ARQ-based error control,” in *Proc. IEEE International Conference on Communications (ICC'2005)*, Seoul, Korea, May 2005.

[C3] **Long B. Le**, Ekram Hossain, and Attahiru S. Alfa, “Queuing analysis for radio link level scheduling in a multi-rate TDMA wireless network,” in *Proc. IEEE Global Communications Conference (GLOBECOM'2004)*, Dallas, TX, USA, Dec. 2004.

[C2] **Long B. Le** and Ekram Hossain, “On the performance of spatial multiplexing MIMO cellular systems with adaptive modulation and scheduling,” in *Proc. IEEE Wireless Communications and Networking Conference (WCNC'2004)*, Atlanta, USA, Mar. 2004.

[C1] **Long B. Le**, Kazi Ahmed, and Hiroyuki Tsuji, “Mobile location estimator with NLOS mitigation using Kalman filtering,” in *Proc. IEEE Wireless Communications and Networking Conference (WCNC'2003)*, New Orleans, Louisiana, USA, Mar. 2003.

## Student/Researcher Supervision

### • Current Supervision

- Duc Hoang, PhD student (January 2023-present)
- Vu Nguyen, MSc student (January 2023-present)
- Hung Le, MSc student (September 2022-present)
- Vu Truong, MSc student (January 2022-present)
- Binh Truong, MSc student (May 2021-present)

### • Past Supervision

- Minh Tri Nguyen, INRS PhD (January 2017-April 2022). Current position: Senior engineer, Qualcomm.
- Dat Nguyen, PhD INRS (June 2018-December 2022)
- Duong Nguyen, PhD UBC (2015-2020, co-supervised). Current position: Assistant professor, Arizona State University, USA.
- TiTi Nguyen, PhD INRS (May 2016-May 2020). Current position: postdoc, ETS.
- Think Tran, PhD INRS (January 2016-May 2020). Current position: postdoc, ETS.

- Dr. Tadilo Bogale (PhD UCL 2013), Postdoctoral fellow (2013-2018). Current position: Assistant professor, North Carolina A&T State University, USA.
- Dr. Jeongho Kwak (PhD KAIST 2015), Postdoctoral fellow (2015-2017). Current position: Assistant professor, Daegu Gyeongbuk Institute of Science and Technology (DG-IST), South Korea.
- Hoang Tuong, INRS PhD (July 2013 - 2017). Current position: Staff researcher, Inter-Digital Inc., Canada
- Dr. Imtiaz Ahmed (PhD UBC 2014), Postdoctoral fellow (2016). Current position: Assistant Professor, Howard University, USA.
- Dr. Juan Duncan, (PhD 2012, UPC Spain), NECPHY-Lab Scientist (2013-2016). Current position: Research associate, University of Luxembourg
- Dr. Duy Nguyen (PhD 2013, McGill), FRQNT postdoctoral fellow (2013-2015). Current position: Associate Professor, San Diego State University, US.
- Hieu Nguyen, INRS PhD (January 2013 - April 2017). Current position: Assistant Professor, North Carolina A&T State University, USA.
- Vu Ha, INRS PhD (August 2011 - October 2016). Current position: Research Associate, University of Luxembourg, Luxembourg.
- Tan Le, INRS PhD (January 2011 - January 2016). Current position: Assistant Professor, Old Dominion University, USA
- Duy Ngo, McGill PhD (October 2010 - July 2013). Current position: Associate Professor, University of Newcastle, Australia
- Amen Memmi, INRS MSc (2015-2018)
- Tam Tran, INRS MSc (January 2015 - 2017)
- Dai Nguyen, INRS Msc (September 2014 - 2017)
- Redouane Sassioui, INRS MSc (2012 - 2015). Current position: PhD student, INRS
- Duong Nguyen, INRS, MSc (December 2011 - May 2014). Current position: PhD student, University of British Columbia, Canada

## Teaching

- TEL-302: Avanced design and analysis of wireless network algorithms, Summer 2013.
- TEL-352 (guided reading course): Winter 2011, Fall 2012, Winter 2013, Fall 2013, Summer 2013, Winter 2015, Fall 2015, Winter 2017, Winter 2018, Winter 2020, Winter 2023

## Research Funding

### • Active Projects

- NSERC Discovery Grant, “ Space-air-ground integrated networks for ubiquitous connectivity and mobile computing experience,” (PI, 2022-2027)

- DND Micro-net Grant, “Toward Situational-aware and Adaptive 5G Networks for Defence and Security: A Machine Learning Approach,” (co-PI, 2022-2025)
- MITACS Grant, “The control tower of the future,” (PI, 2019-2023)

- **Past Projects**

- NSERC Discovery Accelerator Supplements (DAS), (PI, 2016-2019)
- NSERC Discovery Grant, “Adaptive wireless access techniques for cloud-based heterogeneous cellular networks,” (PI, 2016-2021)
- NSERC CREATE Training Program in “Pervasive and smart wireless applications for the digital economy (PERSWADE),” (co-PI, 2013-2019)
- CRIAQ - NSERC CRD Grant, “Interference mitigation in satellite communications,” (co-PI, 2014-2020)
- NSERC Engage Grant, “Robust UAV-assisted mobile localization techniques using deep learning,” (PI, 2018-2019)
- Canada Foundation for Innovation (CFI) - Leaders Opportunity Fund, “Networks and Cyber-Physical Systems Laboratory (NECPHY-Lab),” (PI, 2012)
- NSERC Engage Grant, “Design and implementation of spectrum sensing and access algorithms for Cognitive Radios in TV Bands,” (PI, 2012)
- NSERC Engage Grant, “Medium access control design for 802.15.4 radios to enhance coexistence performance in unlicensed bands,” (PI, 2012-2013)
- FQRNT New Researcher Grant, “Vers les garanties des performances des réseaux de radio cognitive: Limites théoriques, génie de protocoles et applications aux réseaux électriques intelligents,” (PI, 2012-2013)
- NSERC Engage Grant, “Communication range enhancement for Bluetooth radios via multi-hop communications to support wearable computing and E-health applications,” (PI, 2013-2014)
- INRS Start-up Grant (PI, 2011-2015)
- NSERC Strategic Grant, “Resource management in multi-tier cellular wireless networks enhanced with peer-to-peer communications,” (co-PI, 2012-2015)
- FQRNT Team Grant, “Conception des réseaux sans fil hétérogènes de cinquième génération pour une meilleure efficacité spectrale et énergétique,” (PI, 2013-2016)
- FQRNT Team Grant, “Cross-layer management for future wireless networks,” (co-PI, 2014-2017)
- NSERC Discovery Grant, “Efficient and robust protocols for distributed control and optimization of ubiquitous wireless networks,” (PI, 2011-2016)
- NSERC CRD Grant, “Dynamic spectrum sharing techniques for next-generation wireless networks,” (PI, 2014-2017)
- NSERC Engage Grant, “Advanced techniques for robust wind forecast,” (PI, 2017)

## Professional Activities and Services

- **Editor**, *IEEE Transactions on Communications* (2022-present)

- **Editor**, *IEEE Transactions on Cognitive Communications and Networking* (2020-present)
- **Chair**, Commission C, URSI Canadian National Committee (2015-2018)
- **Editor**, *IEEE Transactions on Wireless Communications* (2015-2020)
- **Editor**, *IEEE Communications Surveys and Tutorials* (2011-2019)
- **Editor**, *IEEE Wireless Communications Letters* (2011-2016)
- **Lead Guest Editor**, *EURASIP Journal on Wireless Communications and Networking*, Special Issue on “5G Wireless Mobile Technologies”, 2015.
- Technical Program Committee (TPC) Chair
  - **TPC Co-chair**: Biennial Symposium on Communications (BSC 2021)
  - **TPC Co-chair**: Vehicle Cooperation and Control, Assisted and Autonomous Driving Track, *IEEE VTC Fall’2020*
  - **Keynote co-chair**: *IEEE ATC’2019*
  - **International Liaison Chair**: *IEEE ICT’2019*
  - **TPC Co-chair**: *MAC Track, IEEE WCNC’2016*
  - **TPC Co-chair**: *The Twelfth International Symposium on Wireless Communication Systems, ISWCS’2015*
  - **TPC Co-chair**: *Wireless Access Track, IEEE VTC Fall’2014*
  - **TPC Co-chair**: *Networks Track, IEEE Advanced Technologies for Communications Conference (IEEE ATC’2013)*
  - **TPC Co-chair**: *New Results Track, IEEE VTC Fall’2012*
  - **TPC Co-chair**: *Wireless Networks Track, IEEE VTC Fall’2011*
  - **TPC Co-chair**: *Cognitive Radio and Spectrum Management Track, IEEE PIMRC’2011*
  - **TPC Co-chair**: *Mobile Computing Symposium, IWCMC’2011*
  - **TPC Co-chair**: *Next Generation Mobile Networks Symposium, IWCMC’2010*

### Invited Talks/Tutorials (not including conference presentations)

- “Radio resource management in femtocell networks,” tutorial, *IEEE International Conference on Communications 2012 (IEEE ICC’2012)*, Ottawa, Canada, June 2012.
- “Interference management in femtocell networks,” tutorial, *IEEE International Symposium on Personal, Indoor and Mobile Radio Communications 2011 (IEEE PIMRC’2011)*, Toronto, Canada, Sept. 2011.
- “QoS-aware and energy-efficient resource management in OFDMA femtocells,” invited talk, **University Pierre and Marie Curie (Paris 6)**, April 2012.
- “Distributed Pareto-optimal power control for femtocell networks,” invited talk, **Nanyang Technological University**, July 2011.
- “Maximal scheduling in wireless networks under the SINR interference model,” invited talk, **The Ohio State University**, Sept. 2009.

- “Control and optimization in adaptive wireless networks,” invited talk, **McGill University**, Sept. 2009.
- “Appropriate control of wireless networks with flow level dynamics,” invited talk at *Conference on Information Sciences and Systems (CISS'2008)*, **Princeton University**, Mar. 2008.
- “End-to-end performance of ARQ cooperative diversity in multihop wireless networks,” invited talk, **IEEE Communications Society**, Winnipeg Chapter, May 2006.