

Chen Feng

AFFILIATION	Assistant Professor School of Engineering University of British Columbia Kelowna, BC, Canada	<i>Office:</i> EME 4285 <i>Tel:</i> 250.807.8286 <i>Email:</i> chen.feng@ubc.ca
RESEARCH INTERESTS	◇ Cloud Computing, Wireless Networking, Quantum Communication ◇ Information Theory, Coding Theory, Optimization	
EDUCATION	Ph.D. in Electrical and Computer Engineering <i>University of Toronto, Toronto, Canada</i> ◇ <i>Dissertation:</i> “An Algebraic Approach to Physical-Layer Network Coding” ◇ <i>Advisors:</i> Frank R. Kschischang and Baochun Li	2009 – 2014
	M.A.Sc. in Electrical and Computer Engineering <i>University of Toronto, Toronto, Canada</i> ◇ <i>Dissertation:</i> “On Large-Scale Peer-to-Peer Streaming Systems” ◇ <i>Advisor:</i> Baochun Li	2006 – 2009
	B.Eng. in Electronic and Communications Engineering <i>Shanghai Jiao Tong University, Shanghai, China</i> ◇ <i>Ranking:</i> 4th out of 350 in Electronic and Communications Engineering	2002 – 2006
EMPLOYMENT	Assistant Professor <i>University of British Columbia, Okanagan Campus, Kelowna, Canada</i>	July 2015 – Present
	Research Scientist <i>QKD Inc., Toronto, Canada</i> ◇ QKD Inc. is a startup company on next-generation quantum security ◇ <i>Topic:</i> coding techniques for continuous-variable quantum key distribution	August 2013 – June 2015
	Postdoctoral Researcher <i>EPFL, Lausanne, Switzerland</i> ◇ <i>Advisor:</i> Michael Gastpar	October 2014 – June 2015
	Visiting Scholar <i>Boston University, Boston, US</i> ◇ <i>Advisor:</i> Bobak Nazer	October 2014 – February 2015
HONORS AND AWARDS	◇ Thank a Prof! Award ◇ IEEE Transactions on Communications Exemplary Reviewer (top 2%) ◇ NSERC Postdoctoral Fellowships ◇ Graduate Student Endowment Fund Scholarship ◇ Shahid U.H. Qureshi Memorial Scholarship ◇ IEEE NetCod Best Student Paper Runner-Up Award	2016 2015 2014 2013 2013 2013

- ◇ ACM SIGMETRICS Student Travel Grant 2013
- ◇ IEEE ISIT Student Travel Grant 2013
- ◇ Chinese Government Award for Outstanding Students Abroad 2011 – 2012

PUBLICATIONS ◇ **Book Chapters**

(UNDERLINED ARE
MY STUDENTS.)

[B2] Renming Qi, **Chen Feng**, Zheng Liu, and Nezhir Mrad, “Blockchain-Powered Internet of Things, E-Governance and E-Democracy,” Chapter 18 in *E-Democracy for Smart Cities*, Vinod Kumar, Editors, Springer, ISBN 978–981–10–4034–4, Hardback, 2017.

[B1] **Chen Feng** and Baochun Li, “Network Coding for Content Distribution and Multimedia Streaming in Peer-to-Peer Networks,” Chapter 3 in *Network Coding: Fundamentals and Applications*, Muriel Médard and Alex Sprintson, Editors, pp. 61–86, Academic Press, ISBN 978–0–12–380918–6, Hardback, 2012.

◇ **Submitted Journal Articles** (in reverse chronological order)

[S2] Mario Milicevic, **Chen Feng**, Lei Zhang, and P. Glenn Gulak, “Key Reconciliation with Low-Density Parity-Check Codes for Long-Distance Quantum Cryptography,” submitted to *Nature Communications*, 2017.

[S1] Sung-Hoon Lim, **Chen Feng**, Adriano Pastore, Bobak Nazer, and Michael Gastpar, “A Joint Typicality Approach to Algebraic Network Information Theory,” submitted to *IEEE Transactions on Information Theory*, 2016.

◇ **Refereed Journal Articles** (in reverse chronological order)

[J8] **Chen Feng**, Hong Xu, and Baochun Li, “An Alternating Direction Method Approach to Cloud Traffic Management,” *IEEE Transactions on Parallel and Distributed Systems*, accepted, February 2017.

[J7] Shwan Ashrafi, **Chen Feng**, and Sumit Roy, “Performance Analysis of CSMA with Compute-and-Forward,” *IEEE Transactions on Communications*, vol. 65, pp. 230–243, January 2017.

[J6] **Chen Feng**, Danilo Silva, and Frank R. Kschischang, “Blind Compute-and-Forward,” *IEEE Transactions on Communications*, vol. 64, no. 4, pp. 1451–1463, April 2016.

[J5] Feihu Xu, Juan Miguel Arrazola, Kejin Wei, Wenyuan Wang, Pablo Palacios-Avila, **Chen Feng**, Shihan Sajeed, Norbert Lütkenhaus, and Hoi-Kwong Lo, “Experimental Quantum Fingerprinting with Weak Coherent Pulses,” *Nature Communications*, vol. 6, October 2015.

[J4] Hong Xu, **Chen Feng**, and Baochun Li, “Temperature-Aware Workload Management in Geo-distributed Datacenters,” *IEEE Transactions on Parallel and Distributed Systems*, vol. 26, no. 6, pp. 1743–1753, June 2015.

[J3] **Chen Feng**, Roberto W. Nóbrega, Frank R. Kschischang, and Danilo Silva, “Com-

munication over Finite-Chain-Ring Matrix Channels,” *IEEE Transactions on Information Theory*, vol. 60, no. 10, pp. 5899–5917, October 2014.

[J2] **Chen Feng**, Danilo Silva, and Frank R. Kschischang, “An Algebraic Approach to Physical-Layer Network Coding,” *IEEE Transactions on Information Theory*, vol. 59, no. 11, pp. 7576–7596, November 2013.

[J1] **Chen Feng** and Baochun Li, “Network Coding for Peer-Assisted Multimedia Streaming,” *IEEE Communications Society MMTC E-Letter*, vol. 5, no. 2, pp. 9–12, March 2010.

◇ **Refereed Conference Papers** (in reverse chronological order)

[C19] Corina Ionita, Bobak Nazer, **Chen Feng**, and Behnaam Aazhang, “An Experimental Study on the Robustness of Integer Forcing Linear Receivers,” in Proc. of *International Conference on Communications (ICC)*, Paris, France, May 2017, 7 pages.

[C18] Chunpu Wang, **Chen Feng**, and Julian Cheng, “Randomized Load Balancing With a Helper,” in Proc. of *International Conference on Computing, Networking and Communications (ICNC)*, Silicon Valley, CA, January 2017, 6 pages.

[C17] Feihu Xu, Juan Miguel Arrazola, Kejin Wei, Wenyuan Wang, Pablo Palacios-Avila, **Chen Feng**, Shihan Sajeed, Norbert Lutkenhaus, and Hoi-Kwong Lo, “Experimental Quantum Fingerprinting,” in Proc. of *International Conference on Quantum Cryptography (QCrypt)*, Tokyo, Japan, September 2015.

[C16] Shwan Ashrafi, **Chen Feng**, Sumit Roy, and Frank R. Kschischang, “Slotted ALOHA with Compute-and-Forward,” in Proc. of *IEEE International Symposium on Information Theory (ISIT)*, Hong Kong, China, June 2015, pp. 571–575.

[C15] Wenbo He, **Chen Feng**, Corina Ionita, and Bobak Nazer, “Collision Scheduling for Cellular Networks,” in Proc. of *IEEE International Symposium on Information Theory (ISIT)*, Hong Kong, China, June 2015, pp. 1417–1421.

[C14] Wei Wang, **Chen Feng**, Baochun Li, and Ben Liang, “On the Fairness-Efficiency Tradeoff for Packet Processing with Multiple Resources,” in Proc. of *ACM International Conference on emerging Networking EXperiments and Technologies (CoNEXT)*, Sydney, Australia, December 2014, pp. 235–248.

[C13] **Chen Feng**, Roberto W. Nóbrega, Frank R. Kschischang, and Danilo Silva, “Communication over Finite-Ring Matrix Channels,” in Proc. of *IEEE International Symposium on Information Theory (ISIT)*, Istanbul, Turkey, July 2013, pp. 2890–2894.

[C12] Hong Xu, **Chen Feng**, and Baochun Li, “Temperature-Aware Workload Management in Geo-distributed Datacenters,” in Proc. of *USENIX International Conference on Autonomic Computing (ICAC)*, San Jose, CA, June 2013, pp. 303–314.

[C11] Hong Xu, **Chen Feng**, and Baochun Li, “Temperature Aware Workload Management in Geo-distributed Datacenters,” in Proc. of *ACM International Conference on Measurement and Modeling of Computer Systems (SIGMETRICS)*, Pittsburgh, PA, June 2013, Extended

Abstract, pp. 373–374.

[C10] Roberto W. Nóbrega, **Chen Feng**, Danilo Silva, and Bartolomeu F. Uchôa-Filho, “On Multiplicative Matrix Channels over Finite Chain Rings,” in Proc. of *IEEE International Symposium on Network Coding (NetCod)*, Calgary, Canada, June 2013, pp. 49–54. (**Best Student Paper Runner-Up Award**)

[C9] **Chen Feng**, Danilo Silva, and Frank R. Kschischang, “Blind Compute-and-Forward,” in Proc. of *IEEE International Symposium on Information Theory (ISIT)*, Cambridge, MA, July 2012, pp. 408–412.

[C8] Di Niu, **Chen Feng**, and Baochun Li, “Pricing Cloud Bandwidth Reservations under Demand Uncertainty,” in Proc. of *ACM International Conference on Measurement and Modeling of Computer Systems (SIGMETRICS/Performance)*, London, UK, June 2012, pp. 151–162.

[C7] Di Niu, **Chen Feng**, and Baochun Li, “A Theory of Cloud Bandwidth Pricing for Video-on-Demand Providers,” in Proc. of *IEEE International Conference on Computer Communications (INFOCOM)*, Orlando, FL, March 2012, pp. 711–719.

[C6] **Chen Feng**, Danilo Silva, and Frank R. Kschischang, “Lattice Network Coding via Signal Codes,” in Proc. of *IEEE International Symposium on Information Theory (ISIT)*, Saint Petersburg, Russia, July 2011, pp. 2578–2582.

[C5] **Chen Feng**, Danilo Silva, and Frank R. Kschischang, “Lattice Network Coding over Finite Rings,” in Proc. of *Canadian Workshop on Information Theory (CWIT)*, Kelowna, Canada, May 2011, pp. 78–81.

[C4] **Chen Feng**, Danilo Silva, and Frank R. Kschischang, “Design Criteria for Lattice Network Coding,” in Proc. of *Annual Conference on Information Sciences and Systems (CISS)*, Baltimore, MD, March 2011, 6 pages.

[C3] **Chen Feng**, Danilo Silva, and Frank R. Kschischang, “An Algebraic Approach to Physical-Layer Network Coding,” in Proc. of *IEEE International Symposium on Information Theory (ISIT)*, Austin, TX, June 2010, pp. 1017–1021.

[C2] **Chen Feng**, Baochun Li, and Bo Li, “Understanding the Performance Gap between Pull-based Mesh Streaming Protocols and Fundamental Limits,” in Proc. of *IEEE International Conference on Computer Communications (INFOCOM)*, Rio de Janeiro, Brazil, April 2009, pp. 891–899.

[C1] **Chen Feng** and Baochun Li, “On Large-Scale Peer-to-Peer Streaming Systems with Network Coding,” in Proc. of *ACM International Conference on Multimedia (Multimedia)*, Vancouver, British Columbia, Canada, October 2008, pp. 269–278.

PATENTS

[P1] “Key Reconciliation with LDPC Codes for Long-Distance Quantum Cryptography”
Co-inventors: Mario Milicevic, **Chen Feng**, Lei Zhang, and P. Glenn Gulak
U.S. Provisional Patent No. 62/454,741, filed on February 2017

INVITED TALKS	<p>Workshop on Interactions between Number Theory and Wireless Communication July 7, 2016 <i>Wireless Network Coding over Finite Rings</i> Host: Professors Victor Beresnevich, Alister Burr, and Sanju Velani</p> <p>LINX Group, EPFL March 31, 2015 <i>Nested Linear Codes: Towards Algebraic Network Information Theory</i> Host: Professor Michael Gastpar</p> <p>School of Engineering, University of British Columbia Okanagan September 9, 2014 <i>An Algebraic Approach to Wireless Network Coding</i> Host: Professors Julian Cheng and Rehan Sadiq</p> <p>EEE Department, University of Melbourne September 4, 2014 <i>An Algebraic Approach to Wireless Network Coding</i> Host: Professor Robin J Evans</p> <p>University of Michigan - Shanghai Jiao Tong University Joint Institute April 17, 2014 <i>An Algebraic Approach to Physical-Layer Network Coding</i> Host: Professor Yaping Dan</p> <p>EE Department, University of Washington in Seattle March 17, 2014 <i>An Algebraic Approach to Compute-and-Forward</i> Host: Professors Matt Reynolds and Sumit Roy</p> <p>ECE Department, McMaster University June 3, 2013 <i>An Algebraic Approach to Physical-Layer Network Coding</i> Host: Professor Jun Chen</p> <p>Communications Group Event, University of Toronto September 30, 2011 <i>Efficient Physical-Layer Network Coding</i> Host: Professor Ben Liang</p> <p>Banff International Research Station Workshop August 17, 2011 <i>An Algebraic Approach to Compute-and-Forward</i> Organizers: Professors Michael Gastpar and Frank R. Kschischang</p>
TEACHING	<p>◇ ENGR566, <i>Advanced Communication Networks</i> Winter 2017</p> <p>◇ ENGR463, <i>Communication Networks</i> Winter 2017</p> <p>◇ APSC254, <i>Instrumentation and Data Analysis</i> Fall 2016</p> <p>◇ ENGR463, <i>Communication Networks</i> Winter 2016</p> <p>◇ APSC254, <i>Instrumentation and Data Analysis</i> Fall 2015</p>
PROFESSIONAL SERVICES	<p>◇ Conference Organizing Committee</p> <ul style="list-style-type: none"> • Publication chair of the 28th Biennial Symposium on Communications (BSC 2016) <p>◇ Conference Technical Program Committee</p> <ul style="list-style-type: none"> • 15th Canadian Workshop on Information Theory (CWIT 2017) • 28th Biennial Symposium on Communications (BSC 2016)

- 14th Canadian Workshop on Information Theory (CWIT 2015)

◇ **Editorships**

- Editor, IEEE Communications Letters, January 2016 to present.

◇ **Reviewer for Journal Manuscript Submissions**

- IEEE Transactions on Circuits and Systems for Video Technology (9/2014)
- IEEE Transactions on Communications (4/2015, 2/2015, 1/2015, 11/2014, 6/2014, 4/2013, 3/2013, 1/2013, 12/2012, 11/2012, 10/2012, 7/2012, 6/2012)
- IEEE Transactions on Computers (5/2015, 2/2015)
- IEEE Transactions on Information Theory (3/2016, 12/2015, 11/2015, 6/2015, 2/2015, 9/2014, 8/2014, 9/2012)
- IEEE Transactions on Multimedia (9/2012)
- IEEE Transactions on Vehicular Technology (4/2016, 4/2014)
- IEEE Transactions on Wireless Communications (11/2015, 10/2015, 6/2015, 5/2015, 1/2015, 11/2013, 11/2012, 9/2012)
- IEEE Communications Letters (7/2012, 12/2011)
- IEEE Wireless Communications Letters (1/2014, 8/2012)
- IEEE/ACM Transactions on Networking (4/2013)
- Springer Multimedia Systems (3/2015)
- Springer Peer-to-Peer Networking and Applications (3/2012)

◇ **Reviewer for Conference Manuscript Submissions**

ACM MobiCom, ACM MobiHoc, ACM Multimedia, ACM NOSSDAV, IEEE GLOBE-COM, IEEE ICDCS, IEEE ICME, IEEE ICNP, IEEE INFOCOM, IEEE ISIT, IEEE ITW, IEEE IWQoS, IEEE MASS, IEEE NetCod, IEEE SECON, IFIP Networking.