Hung Q. Ngo

Curriculumn Vitae

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Education

1996–2001	**Ph.D. in Computer Science & Engineering**, *University of Minnesota*, Twin Cities.
	Dissertation: "Issues in Interconnection Networks", Advisor: Ding-Zhu Du
1999–2001	**M.S. in Mathematics**, *University of Minnesota*, Twin Cities.
	Thesis: "**P**-Species and the *q*-Mehloer Formula", Advisor: Dennis Stanton
1990–1995	**B.S. in Computer Engineering**, *Ho Chi Minh city University of Technology*, Ho Chi Minh city, Vietnam.

Employment History

2015–present	**Computer Scientist**, *LogicBlox Inc.*.
2001–2017	**Assistant→Associate→Full Professor**, *Computer Science and Engineering, SUNY Buffalo*.

Awards and Honors

2016	**Best paper award**, *PODS 2016*.
2016	**CSE Sustained Teaching Execellence Award**.
2012	**Best paper award**, *PODS 2012*.
2008	**Best paper award**, *COCOON 2008*.
2005	**Exceptional Scholar (Young Investigator) Award**, *SUNY Buffalo*.
2004–2009	**NSF CAREER Award**.
2002–2003	**Outstanding Teacher Awards**, *Fall 2002, Spring 2003, Fall 2003*.
	By the Graduate Student Association of the Department of Computer Science & Engineering, SUNY Buffalo
2000–2001	**Guidant Fellowship for outstanding achievement**.
	One fellowship was awarded by the Department of Computer Science and Engineering, University of Minnesota
1992	**Japanese Government Scholarship**.
	Awarded for outstanding achievement to 16 undergraduates in Vietnam to study in Japan
1990	**Vietnamese Government Scholarship**.
	Awarded for top scoring in the University Entrance Examination
1990	**First prize**, *Ho Chi Minh city Mathematical Olympiad*.
1989–1990	**Various prizes**, *Vietnamese Mathematical Olympiads*.
1988	**Second prize**, *Ho Chi Minh city Physics Olympiad*, (No first prize awarded).

Selected Professional Activities

PODS 2018	**TPC member**.
	37th ACM SIGMOD-SIGACT-SIGAI Symposium on Principles of Database Systems
ICDT 2017	**TPC member**.
	International Conference on Database Theory
2010–2015	**Associate Editor**.
	Discrete Mathematics, Algorithms, and Applications

INFOCOM 2008–2015	**TPC member**. IEEE Conference on Computer Communications (INFOCOM)
COCOON 2009	**Conference and program chair**. The 15th International Conference on Combinatorics and Computing (COCOON)
WoWMoM 2006	**Local arrangement chair**. IEEE International Symposium on a World of Wireless, Mobile and Multimedia Networks
2011–2014	**Co-organizer**. Coding, Complexity, and Sparsity Workshop
GLOBECOM 2011	**TPC member**. IEEE Global Communications Conference
ICC 2008–2010	**TPC member**. IEEE International Conference on Communications
ISAAC 2009	**TPC member**. International Symposium on Algorithm and Computation
AINA 2007–2009	**TPC member**. IEEE International Conference on Advanced Information Networking and Applications
HPSR 2006	**TPC member**. IEEE Workshop on High Performance Switching and Routing
COCOON 2003	**TPC member**. International Conference on Combinatorics and Computing
NSF Panels	**Panelist**. Several NSF panels
2001–present	**Referee**. Many profesional journals and conferences, including IEEE Transactions on Computers, SIAM Journal on Discrete Mathematics, IEEE Transactions on Parallel and Distributed Systems, IEEE/ACM Transactions on Networking, Journal of Complexity, Theoretical Computer Science, IEEE Journal on Selected Areas in Communications, Information Processing Letters, The Computer Journal, IEEE Transactions on Parallel and Distributed Systems, Journal of Combinatorial Optimization, ACM Transactionson Database Systems, ESA, ICC, GlobeCom, COCOON, INFOCOM, SODA, etc.
Sporadically	**Reviewer**. Mathematical Reviews (MathSciNet)

Selected Departmental Services

2012–2015	**Director of Graduate Studies**.
2012–2015	**CSE Executive Commitee**.
2012–2015	**Alternate Member of SEAS Tenture Committee**.
2001–2006 2007–2012	**Graduate Affairs Committee**.
2011–2012 2002–2006	**Faculty Search Committee**.
2006–2007	**Undergraduate Affairs Committee**.
2002–2003 2008–2010	**Library Commitee**.
2003–2004	**Internship Commitee**.
2004–2005	**Chair of the Colloquium Committee**.
2001–2002	**Facilities Committee**.

Courses Taught

Fall 2001	**CSE 489/589**, *Modern Network Concepts*, 85 students.
	CSE 700, *Independent Studies*, 3 students.

	CSE 799, *Supervised Research*, 2 students.
Spring 2002	**CSE 736**, *Interconnection Networks: Complexity and Algorithms*, 10 students.
	CSE 700, *Independent Study*, 3 students.
	CSE 799, *Supervised Research*, 1 student.
Fall 2002	**CSE 431/531**, *Algorithm Analysis and Design*, 72 students.
	CSE 700, *Independent Study*, 2 students.
	CSE 799, *Supervised Research*, 1 student.
	CSE 800, *Thesis Guidance*, 2 students.
Spring 2003	**CSE 594**, *Combinatorial and Graph Algorithms*, 7 students.
	CSE 700, *Independent Study*, 6 students.
	CSE 736, *Markov Chains: Fundamentals and Applications*, 12 students.
	CSE 799, *Supervised Research*, 1 student.
	CSE 800, *Thesis Guidance*, 2 students.
Fall 2003	**CSE 489/589**, *Modern Network Concepts*, 90 students.
	CSE 700, *Independent Study*, 3 students.
	CSE 713, *Random Graphs and Applications*, 12 students.
	CSE 799, *Supervised Research*, 1 student.
	CSE 800, *Thesis Guidance*, 2 students.
Spring 2004	**CSE 594**, *Combinatorial and Graph Algorithms*, 7 students.
	CSE 700, *Independent Study*, 4 students.
	CSE 799, *Supervised Research*, 1 student.
	CSE 800, *Thesis Guidance*, 2 students.
Fall 2004	**CSE 431/531**, *Algorithm Analysis and Design*, 80 students.
	CSE 713, *Probabilistically Checkable Proofs*, 6 students.
	CSE 799, *Supervised Research*, 3 students.
	CSE 800, *Thesis Guidance*, 4 students.
Spring 2005	**CSE 594**, *Combinatorial and Graph Algorithms*, 8 students.
	CSE 799, *Supervised Research*, 2 students.
	CSE 800, *Thesis Guidance*, 4 students.
Fall 2005	**CSE 620**, *Advanced Networking Concepts*, 25 students.
	CSE 700, *Independence Study*, 2 students.
	CSE 800, *Thesis Guidance*, 3 students.
Spring 2006	**CSE 489/589**, *Modern Networking Concepts*, 57 students.
	CSE 700, *Independence Study*, 4 students.
	CSE 799, *Supervised Research*, 3 students.
	CSE 800, *Thesis Guidance*, 1 student.
Fall 2006	**CSE 594**, *Combinatorial and Graph Algorithms*, 8 students.
	CSE 700, *Independence Study*, 3 students.
	CSE 799, *Supervised Research*, 2 students.
	CSE 800, *Thesis Guidance*, 2 students.
Spring 2007	**CSE 431/531**, *Design and Analysis of Algorithms*, 76 students.
	CSE 725, *Network Coding*, 10 students.
	CSE 799, *Supervised Research*, 1 student.
	CSE 800, *Thesis Guidance*, 2 students.
Fall 2007	**CSE 531**, *Design and Analysis of Algorithms*, 49 students.
	CSE 700, *Independence Study*, 1 student.

	CSE 799, *Supervised Research*, 1 student.
	CSE 800, *Thesis Guidance*, 2 students.
Spring 2008	**CSE 694**, *Probabilistic Analysis and Randomized Algorithms*, 9 students.
	CSE 799, *Supervised Research*, 1 student.
	CSE 800, *Thesis Guidance*, 1 student.
Fall 2008	**CSE 694**, *Probabilistic Analysis and Randomized Algorithms*, 5 students.
	CSE 800, *Thesis Guidance*, 3 students.
Spring 2009	**CSE 489/589**, *Modern Networking Concepts*, 75 students.
	CSE 725, *Expanders, Property Testing, and the PCP Theorem - II*, 5 students.
	CSE 800, *Thesis Guidance*, 3 students.
Fall 2009	**CSE 489/589**, *Modern Networking Concepts*, 75 students.
	CSE 711, *LP/SDP-based Approximation Algorithms*, 11 students.
	CSE 800, *Thesis Guidance*, 3 students.
Spring 2010	**CSE 800**, *Thesis Guidance*, 3 students.
Fall 2010	**CSE 489/589**, *Modern Networking Concepts*, 96 students.
	CSE 711, *Computational Learning Theory*, 17 students.
	CSE 800, *Thesis Guidance*, 2 students.
Spring 2011	**CSE 694**, *Probabilistic Analysis and Randomized Algorithms*, 9 students.
	CSE 800, *Thesis Guidance*, 2 students.
Fall 2011	**CSE 694**, *Probabilistic Analysis and Randomized Algorithms*, 4 students.
	CSE 800, *Thesis Guidance*, 1 student.
Spring 2012	**CSE 250**, *Data Structures in C++*, 92 students.
	CSE 720, *Compressed Sensing and Group Testing*, 15 students.
Fall 2012	**CSE 250**, *Data Structures in C++*, 91 students.
Spring 2013	**CSE 720**, *Seminar on Optimization*, 14 students.
Fall 2013	**CSE 250**, *Data Structures in C++*, 125 students.
Spring 2014	**CSE 720**, *Seminar on Inference Algorithms in PGMs*, 15 students.
Fall 2014	**CSE 250**, *Data Structures in C++*, 157 students.
Spring 2015	**CSE 705**, *Seminar on Deep Learning*, 16 students.

Research Supervision

2013–2016	**Mahmoud Abo Khamis**, *Ph.D. student*, Currently with LogicBlox.
	Thesis title: "FAQ: Querstions Asked Frequently"
2006–2011	**Thanh-Nhan Nguyen**, *Ph.D. student*, Currently with IBM.
	Thesis title: "Algorithms for some Network Design Problems"
2006–2011	**Anh N. Le**, *Ph.D. student*, Currently with a startup.
	Thesis title: "On Data Flow Masquerading"
2005–2010	**Yang Wang**, *Ph.D. student*, Currently with Google.
	Thesis title: "New Results in the Design and Analysis of Non-blocking Switching Networks"
2004–2009	**Duc T. Ha**, *Ph.D. student*, Currently with Sumo Logic.
	Thesis title: "Propagating Malicious Codes: Theory and Experiments"
2001–2006	**Dazhen Pan**, *Ph.D. student*, Currently with Microsoft.
	Thesis title: "Complexity and Constructions of WDM Switching Networks"
2003–2005	**Tuong Nguyen**, *M.S. student*, Currently with M_Service JSC, Vietnam.
2003–2005	**Harleen Dhillon**, *M.S. student*, Currently Vice President at Ennovance Capital LLC.
	Thesis title: "On reducing control overhead in on-demand multicast routing protocol"

2001–2003 **Vikas P. Verma**, *M.S. student*, With FCS Business Solulutions.
Thesis title: "Distributed Algorithms for Computing Connected Dominating Sets."

2001–2003 **Purnima M. Mavinkurve**, *M.S. student*, Currently with Amazon.
Thesis title: "Centralized and Distributed Algorithms for Power-Conserving Multicasting in Static Wireless Ad Hoc Networks"

Ph.D. Dissertation Committee Member

2004 **Xiaojun Cao**, *Advisor: Chunming Qiao*, Defended.

2005 **Huaming Zhang**, *Advisor: Xin He*, Defended.

2005 **Ramkumar Chinchani**, *Advisor: Shambhu Upadhyaya*, Defended.
Sumesh Philip, *Advisor: Chunming Qiao*, defended May 2005.
Xiang Yu, *Advisor: Chunming Qiao*, Defended.

2006 **Guang Xu**, *Advisor: Jinhui Xu*, Defended.

2007 **Zhenming Chen**, *Advisor: Jinhui Xu*, Defended.
Peng Lin, *Advisor: Chunming Qiao*, Defended.

2008 **S. Vidyaraman**, *Advisor: Shambhu Upadhyaya*, Defended.
Yulai Xie, *Advisor: Jinhui Xu*, Defended.
Mingen Lin, *Advisor: Jinhui Xu*, Defended.

2009 **Xuming Lu**, *Advisor: Murat Demirbas*, Defended.
Madhusudhanan Chandrasekaran, *Advisor: Shambhu Upadhyaya*, Defended.
Xin Liu, *Advisor: Chunming Qiao*, Defended.
Seokhooon Yoon, *Advisor: Chunming Qiao*, Defended.
Xi Zhang, *Advisor: Jan Chomicki*, Defended.
Sunu Mathew, *Advisor: Shambhu Upadhyaya*, Defended.

2010 **Asheq Khan**, *Advisor: Satish Tripathy*, Defended.
Onur Soyal, *Advisor: Murat Demirbas*, Defended.

2011 **Steve Uurtamo**, *Advisor: Atri Rudra*, Defended.
Yongding Zhu, *Advisor: Jinhui Xu*, Defended.

2012 **Jia Zhao**, *Advisor: Chunming Qiao*, Defended.
Lei Xu, *Advisor: Jinhui Xu*, Defended.

2013 **Albert Chen**, *Advisor: Jason Corso*, Defended.
Liang Ge, *Advisor: Aidong Zhang*, Defended.
Swapnooneel Roy, *Advisor: Atri Rudra*, Defended.

2014 **Manavender Reddy**, *Advisor: Venu Govindaraju*, Defended.
Caiming Xiong, *Advisor: Jason Corso*, Defended.
Aditya Wagh, *Advisor: Chunming Qiao*, Defended.
Utkarsh Porwal, *Advisor: Venu Govindaraju*, Defended.
Dung Nguyen, *Advisor: Alan Selman*, Defended.
Hu Ding, *Advisor: Jinhui Xu*, Defended.

2015 **Zilong Ye**, *Advisor: Chunming Qiao*, Defended.
Arti Shivram, *Advisor: Venu Govindaraju*, Defended.
Yingbo Zhou, *Advisor: Venu Govindaraju*, Defended.

2016 **Jiun-Jie Wang**, *Advisor: Roger He*.
Devansh Arpit, *Advisor: Venu Govindaraju*, Defended.
Vishrawas Gopalakrishnan, *Advisor: Aidong Zhang*.
Jimmy Dobler, *Advisor: Atri Rudra*.
Qi Li, *Advisor: Jing Gao*.

M.S. Thesis Committee Member

2003 **Ranjani Sridharan**, *Advisor: Ramalingam Sridhar*, Defended.

2004 **Aarthie Muthukrishnan**, *Advisor: Shambhu Upadhyaya*, Defended.

2005 **Aruna Balasubramanian**, *Advisor: Ramalingam Sridhar*, Defended.

2005 **Madhusudhanan Chandrasekaran**, *Advisor: Shambhu Upadhyaya*, Defended.

Grant Support

2014–2018 **National Science Foundation (NSF)**, *Proposal # CNF-1409551*, **PI**, $1,215,973.
"TWC: **Medium**: Collaborative: Data is Social: Exploiting Data Relationships to Detect Insider Attacks." (UB co-PIs: Varun Chandola, Oliver Kennedy, Shambhu Uphadyaya. Michigan co-PI: XuanLong Nguyen.) UB's share $975,999.00. 2014–2018

2013–2016 **National Science Foundation (NSF)**, *Proposal # CCF-1319402*, **PI**, $499,999.
"AF:III:Small:Collaborative Research: New Frontiers in Join Algorithms: Optimality, Noise, and Richer Languages." (UB Co-PI: Atri Rudra, Stanford Co-PI: Chris Ré.) UB's share $326,101.00.

2012–2015 **National Science Foundation (NSF)**, *Proposal # CCF-1161196*, **co-PI**, $1,199,230.
"AF: **Medium**: Collaborative Research: Sparse Approximation: Theory and Extensions." (Lead PI: Anna Gilbert, Michigan; UB's co-PI: Atri Rudra, Rutger's co-PI: Muthu Muthukrishnan). UB's share $305,467.

2004–2009 **National Science Foundation (NSF)**, *Proposal # CCF-0347565*, **PI**, $409,999.
"CAREER: Designs and Analyses of WDM Switching Architectures."

2004–2006 **The Defense Advanced Research Projects Agency (DARPA)**, **co-PI**, $1,292,295.
"Mitigating the Insider Threat using High-dimensional Search and Modeling." (Lead PI: Eric Van Den Berg, Telcordia Technologies; UB's PI: Shambhu Upadhyaya. We were a subcontractor from Telcordia. The other subcontractor is R. Maxion, CMU.) UB's share $ 255,862.

2012–2013 **Gift from LogicBlox Inc.**, $35,000.

Books

[1] Ding-Zhu Du and Hung Q. Ngo, editors. *Switching Networks: Recent Advances*. Network Theory and Applications, 5. Kluwer Academic Publishers, Dordrecht, The Netherlands, 2001.

[2] Hung Q. Ngo, editor. *Computing and Combinatorics, 15th Annual International Conference, COCOON 2009, Niagara Falls, NY, USA, July 13-15, 2009, Proceedings*, volume 5609 of *Lecture Notes in Computer Science*. Springer, 2009.

Book Chapters

[1] Jaideep Srivastava and Hung Q. Ngo. Statistical databases. In *Wiley Encyclopedia of Electrical and Electronics Engineering*. John Wiley & Sons, Inc., Dec 1999.

[2] Ding-Zhu Du, Bing Lu, Hung Q. Ngo, and Panos Pardalos. The steiner tree problem. In C.A. Floudas and P.M. Pardalos, editors, *Encyclopedia of Optimization*, volume 5, pages 277–290. Kluwer Academic Publishers, 2001.

[3] Hung Q. Ngo and Ding-Zhu Du. Notes on the complexity of switching networks. In D.-Z. Du and Hung Q. Ngo, editors, *Advances in Switching Networks*, volume 5 of *Network Theory and Applications*, pages 307–367. Kluwer Academic Publishers, 2001.

[4] Hung Q. Ngo, Dazhen Pan, and Vikas Verma. Power-conserving algorithms and protocols in ad hoc networks. In X. Cheng, X. Huang, and D.-Z. Du, editors, *Ad Hoc Networking: Recent Advances*, volume 14 of *Network Theory and Applications*, pages 383–446. Springer, New York, 2004.

[5] Xiuzhen Cheng, Yingshu Li, Ding-Zhu Du, and Hung Q. Ngo. Steiner trees in industry. In Ding-Zhu Du and Parnos M. Pardalos, editors, *Handbook of combinatorial optimization. Supplement Vol. B*, pages 193–216. Springer, New York, 2005.

[6] Hung Q. Ngo, Dazhen Pan, Shiva-Shankar Ramanna, and Suchita Kaundin. IP3S: a framework for power-conserving multicast and broadcast algorithms in static wireless ad hoc networks. In M. Cardei, I. Cardei, and D.-Z. Du, editors, *Resource Management in Wireless Networking*, volume 16 of *Network Theory and Applications*, pages 610–639. Springer, New York, 2005.

[7] Hung Q. Ngo. WDM switching networks: complexity and constructions. In D.-Z. Du, M. Cheng, and Y. Li, editors, *Combinatorial Optimization in Communication Networks*, volume 18 of *Combinatorial Optimization*, pages 395–426. Springer, New York, 2006.

[8] Ramkumar Chinchani, Duc Ha, Anusha Iyer, Hung Q. Ngo, and Shambhu Upadhyaya. Insider threat assessment: Model, analysis, and tool. In Scott C.-H. Huang, David MacCallum, and Ding-Zhu Du, editors, *Network Security*, pages 143–174. Springer US, New York, 2010.

[9] Hung Q. Ngo and Thanh-Nhan Nguyen. Linear programming analysis of switching networks. In Panos M. Pardalos, Ding-Zhu Du, and Ronald L. Graham, editors, *Handbook of Combinatorial Optimization*, pages 1755–1814. Springer New York, 2013.

[10] Hung Q. Ngo and Atri Rudra. Efficient decodable group testing. In Ming-Yang Kao, editor, *Encyclopedia of Algorithms*. Springer, 2015.

Refereed Journal Articles

[1] Ding-Zhu Du, Frank K. Hwang, Yunjae Jung, and Hung Q. Ngo. Optimal consecutive-k-out-of-$(2k+1)$: G cycle. *J. Global Optim.*, 19(1):51–60, 2001.

[2] Ding-Zhu Du, D.F. Hsu, Hung Q. Ngo, and G.W. Peck. On the connectivity of consecutive-d digraphs. *Disc. Math.*, 257(2–3):371–384, 2002.

[3] Ding-Zhu Du, Frank K. Hwang, Xiaohua Jia, and Hung Q. Ngo. Optimal consecutive-k-out-of-n: G cycle for $n \leq 2k+1$. *SIAM J. Discrete Math.*, 15(3):305–316 (electronic), 2002.

[4] Ding-Zhu Du and Hung Q. Ngo. An extension of DHH-Erdős conjecture on cycle-plus-triangle graphs. *Taiwanese J. Math.*, 6(2):261–267, 2002.

[5] Hung Q. Ngo. **P**-species and the q-Mehler formula. *Sém. Lothar. Combin.*, 48:Art. B48b, 21 pp. (electronic), 2002.

[6] Hung Q. Ngo and Ding-Zhu Du. New constructions of non-adaptive and error-tolerance pooling designs. *Discrete Math.*, 243(1-3):161–170, 2002.

[7] Hung Q. Ngo, Ding-Zhu Du, and Ronald L. Graham. New bounds on a hypercube coloring problem. *Inform. Process. Lett.*, 84(5):265–269, 2002.

[8] Srivatsan Varadarajan, Hung Q. Ngo, and Jaideep Srivastava. Error spreading: A perception-driven approach orthogonal to error handling in continuous media streaming. *IEEE/ACM Transactions on Networking*, 10(1):139–152, 2002.

[9] Xiaoyan Cheng, Xiufeng Du, Manki Min, Hung Q. Ngo, Lu Ruan, Jianhua Sun, and Weili Wu. Super link-connectivity of iterated line digraphs. *Theoret. Comput. Sci.*, 304(1-3):461–469, 2003.

[10] Hung Q. Ngo. A new routing algorithm for multirate rearrangeable Clos networks. *Theoret. Comput. Sci.*, 290(3):2157–2167, 2003.

[11] Hung Q. Ngo and Van H. Vu. Multirate rearrangeable Clos networks and a generalized bipartite graph edge coloring problem. *SIAM Journal on Computing*, 32(4):1040–1049, 2003.

[12] L. Ruan, S. Han, D. Li, Hung Q. Ngo, , and S. Huang. Transmission fault-tolerance of iterated line digraphs. *Journal of Interconnection Networks*, 5(4):475–487, 2004.

[13] Ramkumar Chinchani, Duc Ha, Anusha Iyer, Hung Q. Ngo, and Shambhu Upadhyaya. On the hardness of approximating the Min-Hack problem. *Journal of Combinatorial Optimization*, 9:295–311, 2005.

[14] Hung Q. Ngo. WDM switching networks, rearrangeable and nonblocking $[w, f]$-connectors. *SIAM Journal on Computing*, 35(3):766–785, 2005-2006.

[15] Hung Q. Ngo, Dazhen Pan, and Chunming Qiao. Constructions and analyses of nonblocking wdm switches based on arrayed waveguide grating and limited wavelength conversion. *IEEE/ACM Transactions on Networking*, 14(1):205–217, 2006.

[16] Hung Q. Ngo, Dazhen Pan, and Yuanyuan Yang. Optical switching networks with minimum number of limited range wavelength converters. *IEEE/ACM Transactions on Networking*, 15(4):969–979, 2007.

[17] Hung Q. Ngo. On a hyperplane arrangement problem and tighter analysis of an error-tolerant pooling design. *J. Comb. Optim.*, 15(1):61–76, 2008.

[18] Duc T. Ha and Hung Q. Ngo. On the trade-off between speed and resiliency of flash worms and similar malcodes. *Journal in Computer Virology*, 5(4):309–320, 2009.

[19] Hung Q. Ngo, Thanh-Nhan Nguyen, and Duc T. Ha. Analyzing nonblocking multilog networks with the König-Egevarý theorem. *Discrete Math. Algorithms Appl.*, 1(1):127–139, 2009.

[20] Hung Q. Ngo, Yang Wang, and Dazhen Pan. Rearrangeable and nonblocking $[w, f]$-distributors. *IEEE/ACM Trans. Netw.*, 17:990–1001, June 2009.

[21] Seokhoon Yoon, Duc T. Ha, Hung Q. Ngo, and Chunming Qiao. Mopads: A mobility profile aided file downloading service in vehicular networks. *IEEE T. Vehicular Technology*, 58(9):5235–5246, 2009.

[22] Hung Q. Ngo, Anh Le, and Yang Wang. A linear programming duality approach to analyzing strictly nonblocking d-ary multilog networks under general crosstalk constraints. *J. Comb. Optim.*, 21(1):108–123, 2011.

[23] Yang Wang, Hung Q. Ngo, and Thanh-Nhan Nguyen. Constructions of given-depth and optimal multirate rearrangeably nonblocking distributors. *J. Comb. Optim.*, 24(4):468–484, 2012.

[24] Hung Q. Ngo, Duong Hieu Phan, and David Pointcheval. Black-box Trace&Revoke codes. *Algorithmica*, 67(3):418–448, 2013.

[25] Hung Q. Ngo, Christopher Ré, and Atri Rudra. Skew strikes back: new developments in the theory of join algorithms. *SIGMOD Record*, 42(4):5–16, 2013.

[26] Liang Ge, Jing Gao, Hung Ngo, Kang Li, and Aidong Zhang. On handling negative transfer and imbalanced distributions in multiple source transfer learning. *Stat. Anal. Data Min.*, 7(4):254–271, 2014.

[27] Nikhil Londhe, Vishrawas Gopalakrishnan, Aidong Zhang, Hung Q. Ngo, and Rohini K. Srihari. Matching titles with cross title web-search enrichment and community detection. *PVLDB*, 7(12):1167–1178, 2014.

[28] Mahmoud Abo Khamis, Anna Gilbert, Hung Q. Ngo, , and Atri Rudra. Sparse approximation, list decoding, and uncertainty principles. 2016. Submitted.

[29] Yaniv Erlich, Anna Gilbert, Hung Q. Ngo, Atri Rudra, Nicolas Thierry-Mieg, Mary Wootters, Dina Zielinski, and Or Zuk. Biological screens from linear codes: theory and tools. 2016. Submitted.

[30] Anna C. Gilbert, Hung Q. Ngo, Ely Porat, Atri Rudra, and Martin J. Strauss. ℓ_2/ℓ_2-foreach sparse recovery with low risk. 2016. Submitted.

[31] Mahmoud Abo Khamis, Hung Q. Ngo, Christopher Ré, and Atri Rudra. Joins via geometric resolutions: Worst case and beyond. *ACM Trans. Database Syst.*, 41(4):22:1–22:45, November 2016.

[32] Hung Q. Ngo, Dung T. Nguyen, Christopher Re, and Atri Rudra. Beyond worst-case analysis for joins with Minesweeper. 2016. Submitted.

[33] Hung Q. Ngo, Thanh-Nhan Nguyen, and Dahai Xu. Hardness and approximation of the survivable multi-level fat tree problem. 2016. Submitted.

[34] Hung Q. Ngo, Ely Porat, Christopher Ré, and Atri Rudra. Worst-case optimal join algorithms. *Journal of the ACM*, 2016. Invited.

[35] Hung Q. Ngo, Ely Porat, and Atri Rudra. Efficiently Decodable Compressed Sensing by List-Recoverable Codes and Recursion. 2016. Submitted.

[36] Hung Q. Ngo, Ely Porat, and Atri Rudra. Efficiently decodable error-correcting list disjunct matrices and applications. 2016. Submitted.

[37] Hung Q. Ngo, Atri Rudra, Anh N. Le, and Thanh-Nhan Nguyen. Analyzing nonblocking switching networks using linear programming (duality). 2016. Submitted.

[38] Thanh-Nhan Nguyen, Hung Q. Ngo, and Yang Wang. Strictly nonblocking f-cast photonic switching networks under general crosstalk constraints. 2016. Submitted.

[39] Mahmoud Abo Khamis, Hung Q. Ngo, and Dan Suciu. Computing join queries with functional dependencies. 2017. Submitted.

[40] Mahmoud Abo Khamis, Hung Q. Ngo, and Atri Rudra. FAQ: Questions asked frequently. *Journal of the ACM*, 2017. Invited.

[41] Mahmoud Abo Khamis, Hung Q. Ngo, and Atri Rudra. Jugging functions inside a databasea. *SIGMOD Record*, 2017. SIGMOD Research Highlights. To appear.

Refereed Conference Papers

[1] Wonjun Lee, Difu Su, Hung Q. Ngo, and J. Srivastava. A qos-driven networked continuous media server. In *Proceedings of SPIE International Symposium on Lasers, Optpelectronics, and Microphonics: Electronic Imaging and Multimedia Systems II*, volume 3526, pages 274–285, Sep 1998.

[2] Hung Q. Ngo, S. Varadarajan, and J. Srivastava. Error spreading: reducing bursty errors in continuous media streaming. In *Proceedings of the IEEE International Conference on Multimedia Computing and Systems (ICMCS)*, pages 314–319, Florence, Italy, June 1999. [acceptance rate 35%].

[3] Hung Q. Ngo and Ding-Zhu Du. On the rearrangeability of shuffle-exchange networks. In *Proceedings of the 4th International Conference on Algorithms and Architectures for Parallel Processing (ICA3PP)*, HongKong, China, Dec 2000. World Scientific Publishing.

[4] S. Varadarajan, Hung Q. Ngo, and J. Srivastava. Error spreading: A perception-driven approach to error handling in continuous media streaming. In *Proceedings of the 20th International Conference on Distributed Computing Systems (ICDCS)*, pages 475–483, Taipei, Taiwan, Republic of China, Apr 2000. IEEE Comp. Soc. [acceptance rate 39%].

[5] Hung Q. Ngo, Ding-Zhu Du, and R. L. Graham. New bounds on a hypercube coloring problem and linear codes. In *Proceedings of the International Conference on Information Technology: Coding and Computing (ITCC)*, pages 542–546, Las Vegas, Nevada, Apr 2001. IEEE Comp. Soc.

[6] Purnima M. Marvinkurve, Hung Q. Ngo, and Himanshu Mehra. MIP3S: Algorithms for power-conserving multicasting in wireless ad hoc networks. In *Proceedings of the 11th IEEE International Conference on Networks (ICON 2003, Sydney, Australia)*. IEEE, 2003. [acceptance rate 35%].

[7] Hung Q. Ngo and Van H. Vu. Multirate rearrangeable Clos networks and a generalized bipartite graph edge coloring problem. In *Proceedings of the Fourteenth Annual ACM-SIAM Symposium on Discrete Algorithms (SODA'2003, Baltimore, MD)*, pages 834–840, New York, 2003. ACM. [acceptance rate 27%].

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Other Publications

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Recent Invited Talks

1. "Functional Aggregate Queries Asked Frequently," Logic Group Seminar, Stanford, Spring 2017

2. "Functional Aggregate Queries Asked Frequently," Database Seminar, Department of Computer Science, UCSD, Spring 2016.
3. "Functional Aggregate Queries Asked Frequently," Database Seminar, Department of Computer Science, University of Wisconsin at Madison, Spring 2016.
4. "Functional Aggregate Queries Asked Frequently," Database and Knowledge Representation Seminar, Department of Computer Science, Oxford University, UK. Fall 2015.