L. Jeff Hong (洪流), Ph.D.

Education

Ph.D. (2004), M.S. (2002), Industrial Engineering and Management Sciences, Northwestern University, U.S.A.

M.S. (2001), Applied Mathematics, University of Cincinnati, U.S.A.

B.E. (1999), Industrial Engineering, and B.E. (1999), Automotive Engineering, Tsinghua University, China

Employment History

Department of Economics and Finance and Department of Management Sciences, College of Business, City University of Hong Kong
- Chair Professor of Management Science (August 2014 – present)

Department of Industrial Engineering and Logistics Management, Hong Kong University of Science and Technology
- Professor (July 2011 – August 2014), Associate Professor (Jul 2009 – Jun 2011), Assistant Professor (August 2004 – June 2009)
- Director (July 2013 – August 2014), MSc. Program in Engineering Enterprise Management
- Founder and Director (April 2011 – August 2014), Financial Engineering Laboratory
- Associate Director (January 2010 – August 2014), Logistics and Supply Chain Management Institute

Department of Decision Sciences, NUS Business School, National University of Singapore
- Visiting Professor (January 2012 – March 2012)

Department of Management Science, School of Management, Fudan University
- Visiting Professor (September 2011 – December 2011)

Research Interests

Stochastic modeling, stochastic optimization and stochastic simulation, business and financial analytics, financial risk management, healthcare management

Awards and Honors

中国运筹学会科学技术奖运筹研究奖，2014
EEM Best Teacher Award, HKUST, 2014
Meritorious Service Award, *Operations Research*, 2013, 2008
Outstanding Simulation Publication Award, INFORMS Simulation Society, 2012
Siyuan Chair Professorship, Nanjing University, 2010-2013
Visiting Senior Financial Economist, Shanghai Stock Exchange, 2010
IIE Transactions Best Paper Award – Operations Engineering, 2009
The School of Engineering Distinguished Teaching Award, HKUST, 2008
INFORMS Junior Faculty Interest Group Paper Competition, Second Prize, 2007
Arthur P. Hurter Award for Outstanding Academic Excellence, Northwestern University, 2002

Editorial / Referee Service

Associate Editor (2008 – present), *Operations Research*

Associate Editor (2007 – present), *ACM Transactions on Modeling and Computer Simulation*

Associate Editor (2006 – present), *Naval Research Logistics*

Founding Co-Editor (2014 – present), *Private Equity Review*

Guest Editor, *Annals of Operations Research* on Service Science (ICSS2009), Vol. 192, 2012

Guest Editor, *ACM Transactions on Modeling and Computer Simulation* Special Issue on Emerging Methodologies and Applications in Stochastic Simulation, Volume 24 Issue 4, 2014

Journal Papers[1]

J1. Luo, J.*, L. J. Hong, B. L. Nelson, and Y. Wu*. Fully sequential procedures for large-scale ranking-and-selection problems in parallel computing environments. *Operations Research*, forthcoming.

J2. Hong, L. J., Luo*, and B. L. Nelson. 2015. Chance constrained selection of the best. *INFORMS Journal on Computing*, 27:317-334.

J3. Hong, L. J., X. Xu, and S. H. Zhang. 2015. Capacity reservation for time-sensitive service providers: An application in seaport management. *European Journal of Operational Research*, 245:470-479.

J4. Sun, L.*, L. J. Hong, and Z. Hu*. 2014. Balancing exploitation and exploration in discrete optimization via simulation through a Gaussian process-based search. *Operations Research*, 62:1416-1438.

J5. Hong, L. J. Z. Hu, and G. Liu. 2014. Monte Carlo methods for value-at-risk and conditional value-at-risk: A review. *ACM Transactions on Modeling and Computer Simulation*, 24:22/1-22/37.

J6. Hong, L. J., S. Juneja, and J. Luo*. 2014. Estimating sensitivities of portfolio credit risk using Monte Carlo. *INFORMS Journal on Computing*, 26:848-856.

J7. Hong, L. J., Z. Hu*, and L. Zhang. 2014. Conditional value-at-risk approximation to value-at-risk constrained programs: A remedy via Monte Carlo. *INFORMS Journal on Computing*, 26:385-400.

J8. Xu, J., B. L. Nelson, and L. J. Hong. 2013. An adaptive hyperbox algorithm for high-dimensional discrete optimization via simulation problems. *INFORMS Journal on Computing*, 25:133-146.

J9. Hu, Z.*, L. J. Hong, and L. Zhang. 2013. A smooth Monte Carlo approximation to joint chance-constrained programs. *IIE Transactions*, 45:716-735.

J10. Chang, K.-H., L. J. Hong, and H. Wan. 2013. Stochastic trust-region response-surface method (STRONG) – A new response surface framework for simulation optimization. *INFORMS Journal on Computing*, 25:230-243.

J11. Hu, Z.*, Cao, J., and L. J. Hong. 2012. Robust simulation of global warming policies using the DICE model. *Management Science*, 58:2190-2206.

J12. Zhang, J., L. J. Hong, and R. Q. Zhang. 2012. Fighting strategies in a market with counterfeits.

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[1] * denotes that the author conducted the research while he/she was a postgraduate student under the supervision of Prof. Hong.

Annals of Operations Research, 192:49-66.

J13. Hong, L. J., Y. Yang*, and L. Zhang. 2011. Sequential convex approximations to joint chance constrained programs: A Monte Carlo approach. *Operations Research*, 59:617-630.

J14. Liu, G.* and L. J. Hong. 2011. Kernel estimation of the Greeks of financial options. *Operations Research*, 59:96-108.

J15. Hong, L. J., B. L. Nelson, and J. Xu. 2010. Speeding up COMPASS for high-dimensional discrete optimization via simulation. *Operations Research Letters*, 38:550-555.

J16. Sun, L.* and L. J. Hong. 2010. Asymptotic representations for importance-sampling estimators of value-at-risk and conditional value-at-risk. *Operations Research Letters*, 38:246-251.

J17. Hong, L. J. and G. Liu*. 2010. Pathwise estimation of probability sensitivities through terminating and steady-state simulations. *Operations Research*, 58:357-370.

J18. Xu, J., B. L. Nelson and L. J. Hong. 2010. Industrial Strength COMPASS: A comprehensive algorithm and software for optimization via simulation. *ACM Transactions on Modeling and Computer Simulation*, 20: 3/1-3/29.

J19. Fu, M. C., L. J. Hong and J. Q. Hu. 2009. Conditional Monte Carlo estimation of quantile sensitivities. *Management Science*, 55: 2019-2027.

J20. Liu, G.* and L. J. Hong. 2009. Revisit of stochastic mesh method for pricing American options. *Operations Research Letters*, 37:411-414.

J21. Liu, G.* and L. J. Hong. 2009. Kernel estimation of quantile sensitivities. *Naval Research Logistics*, 56: 511-525.

J22. Hong, L. J. and G. Liu*. 2009. Simulating sensitivities of conditional value-at-risk. *Management Science*, 55: 281-293.

J23. Hong, L. J. 2009. Estimating quantile sensitivities. *Operations Research*, 57: 118-130.

J24. Hong, L. J. and B. L. Nelson. 2007. Selecting the best system when systems are revealed sequentially. *IIE Transactions*, 39:723-734.

J25. Hong, L. J. and B. L. Nelson. 2007. A framework of locally convergent random search algorithms for discrete optimization via simulation. *ACM Transactions on Modeling and Computer Simulation*, 17: 19/1-19/22.

J26. Pichitlamken, J., B. L. Nelson, and L. J. Hong. 2006. A sequential procedure for neighborhood selection-of-the-best in optimization via simulation. *European Journal of Operational Research*, 173:283-298.

J27. Hong, L. J. 2006. Fully sequential indifference-zone selection procedures with variance dependent sampling. *Naval Research Logistics*, 53:464-476.

J28. Hong, L. J. and B. L. Nelson. 2006. Discrete optimization via simulation using COMPASS. *Operations Research,* 54:115-129.

J29. Hong, L. J. and B. L. Nelson. 2005. The tradeoff between sampling and switching: New sequential procedures for indifference-zone selection. *IIE Transactions*, 37:623-634.

Working Papers

W1. Hong, L. J., S. Juneja, and G. Liu. Kernel smoothing for nested estimation with application to portfolio risk measurement. *Operations Research*, under third round review.

W2. Fang, J.* and L. J. Hong. Linking parameter estimation and performance evaluation through simulation-based learning. *INFORMS Journal on Computing*, under third round review.

W3. Fan, W.*, L. J. Hong, and B. L. Nelson. Indifference-zone-free selection of the best. *Operations Research*, major revision.

Refereed Conference Proceedings

P1. Fan, W.* and L. J. Hong. 2014. A frequentist selection-of-the-best procedure without indifference zone. *Proceedings of the 2014 Winter Simulation Conference*, pp. 3737-3748.

P2. Zhang, X., L. J. Hong, and J. Zhang. 2014. Scaling and modeling of call center arrivals. *Proceedings of the 2014 Winter Simulation Conference*, pp. 476-485.

P3. Fan, W.*, L. J. Hong, and X. Zhang. 2013. Robust selection of the best. *Proceedings of the 2013 Winter Simulation Conference*, pp. 868-876.

P4. Fang, J.* and L. J. Hong. 2013. Linking estimation and performance evaluation through simulation. *Proceedings of the 2013 Winter Simulation Conference*, pp. 766-777.

P5. Hong, L. J. and G. Liu. 2011. Monte Carlo estimation of value-at-risk, conditional value-at-risk and their sensitivities. *Proceedings of the 2011 Winter Simulation Conference*, pp. 95-107. (invited advanced tutorial talk)

P6. Luo, J.* and L. J. Hong. 2011. Large-scale ranking and selection using cloud computing. *Proceedings of the 2011 Winter Simulation Conference*, pp. 4051-4061.

P7. Sun, L.*, L. J. Hong and Z. Hu. 2011. Optimization via simulation using Gaussian process-based search. *Proceedings of the 2011 Winter Simulation Conference*, forthcoming.

P8. Hu, Z.*, J. Cao, and L. J. Hong. 2010. Robust simulation of environmental policies. *Proceedings of the 2010 Winter Simulation Conference*, pp.1295-1305.

P9. Hong, L. J. and B. L. Nelson. 2009. A brief introduction to optimization via simulation. *Proceedings of the 2009 Winter Simulation Conference*, pp.75-85. (invited introductory tutorial talk).

P10. Hong, L. J. and S. Juneja. 2009. Estimating expectations of nonlinear functions. *Proceedings of the 2009 Winter Simulation Conference*, pp.1223-1236.

P11. Sun, L.* and L. J. Hong. 2009. The asymptotic expansions of value-at-risk and conditional value-at-risk. *Proceedings of the 2009 Winter Simulation Conference*, pp.415-422.

P12. Liu, G.* and L. J. Hong. 2008. Revisit of stochastic mesh method for pricing American options. *Proceedings of the 2008 Winter Simulation Conference*, pp.594-601.

P13. Liu, G.* and L. J. Hong. 2007. Kernel estimation of quantile sensitivity. *Proceedings of the 2007 Winter Simulation Conference*, pp. 941-948.

P14. Chen, N. and L. J. Hong. 2007. Monte-Carlo method in financial engineering. *Proceedings of the 2007 Winter Simulation Conference*, pp. 919-931. (invited advanced tutorial talk)

P15. Chang, K. H., L. J. Hong, and H. Wan. 2007. Stochastic trust region gradient-free method: A new response-surface-based algorithm for simulation optimization. *Proceedings of the 2007 Winter Simulation Conference*, pp. 346-354.

P16. Wang, K. L., N. M. Tsang, H. W. Tsui, W. Y. Sze, L. J. Hong, and C. Y. Lee. 2006. Analyzing capacity competition among the airports in the Pearl River Delta. *2006 Annual Conference of Institute of Industrial Engineers (Hong Kong)*.

P17. Hong, L. J. 2005. Discrete optimization via simulation using coordinate search. *Proceedings of the 2005 Winter Simulation Conference*, pp. 803-810.

P18. Hong, L. J. and B. L. Nelson. 2003. An indifference-zone selection procedure with minimum switching and sequential sampling. *Proceedings of the 2003 Winter Simulation Conference*, pp. 474-480.

P19. Hong, L. J., B. C. Shultes, and S. Anand. 2001. Robust evaluation of flatness and straightness tolerance using simulated annealing. *Transactions of NAMRI/SME*, 29:553-560.

Research Funding

R1. "Robust selection of the best through computer simulation experiments" (**PI**, Co-I: Xiaowei Zhang), Hong Kong Research Grant Council, General Research Fund, Project No. 16203214), 2014-2017, HK$692,894.

R2. "Accounting for parameter estimation errors in operations research models: A Monte Carlo simulation approach" (**PI**), Hong Kong Research Grant Council, General Research Fund, Project No. 613213, 2013-2016, HK$747,000.

R3. "A cloud computing approach to ranking and selection Problems with a very large number of alternatives" (**PI**), Hong Kong Research Grant Council, General Research Fund, Project No. 613012, 2012-2015, HK$500,000.

R4. "Discrete optimization via simulation using stochastic kriging based random search algorithms" (**PI**), Hong Kong Research Grant Council, General Research Fund, Project No. 613011, 2011-2014, HK$627,000.

R5. "Promoting Hong Kong's Ocean Container Transport Logistics Network" (**Co-PI**; PI and PM: Chung-Yee Lee, other Co-PIs: Albert Ha, Qian Liu, Ho-Yin Mak, Xiangtong Qi, James Wang, Houmin Yan., Hongtao Zhang, Jiheng Zhang and Rachel Zhang) Hong Kong Research Grant Council, Theme-Based Research, First Round, 2011-2016, HK$ 13,000,000.

R6. "Combing simulation and optimization with applications in financial risk management" (**Hong Kong PI**; China PI: Jian-Qiang Hu, China Co-I: Xiaoling Sun and Shushang Zhu). Joint NSFC/RGC (Natural Science Foundation of China / Hong Kong Research Grant Council) Grant, Project No. N_HKUST626/10, 2010-2013, HK$577,300 (for Hong Kong team), RMB336,000 (for China team).

R7. "Exploring the linkage between smoothed perturbation analysis and the kernel method in pathwise sensitivity estimation with applications in credit risk management" (**PI**, Co-I: Michael C. Fu and Jian-Qiang Hu), Hong Kong Research Grant Council, General Research Fund, Project No. 613410, 2010-2013, HK$522,000.

R8. "The impacts of environmental policies on global supply chains" (**PI**, Co-I: Jing Cao, Chung-Yee Lee, Qing Li, Hoi-yin Mak), HKUST Research Project Competition, Project No. RPC10EG11, 2010-2012, HK$298,000.

R9. "Estimating sensitivities of risk measures" (**PI**), Hong Kong Research Grant Council, Competitive Earmarked Research Grant, Project No. 613907, 2007-2009, HK$391,591.

R10. "Continuous optimization via simulation using line search algorithms" (**PI**, Co-I: Xiangtong Qi), Hong Kong Research Grant Council, Competitive Earmarked Research Grant, Project No. 613706, 2006-2009, HK$534,000.

R11. "The impact of counterfeiting" (**Co-I**, PI: Rachel Q. Zhang), Hong Kong Research Grant Council, Competitive Earmarked Research Grant, Project No. 622406, 2006-2009, HK$534,000.

R12. "Dynamic grid search: A gradient-free framework for continuous optimization via simulation" (**PI**), Hong Kong Research Grant Council, Competitive Earmarked Research Grant, Project No. 613305, 2005-2008, HK$538,000.

R13. "A game of five: Competition and cooperation among the five airports in the Pearl River Delta" (**PI**, Co-I: R. Cheung, C.-Y. Lee, X. Qi and K. Zhu), HKUST University Grant Committee, High Impact Allocation Grant, HIA05/06.EG01, 2005-2008, HK$600,000.

R14. "Revised COMPASS for discrete optimization via simulation" (**PI**), Hong Kong Research Grant Council, Direct Allocation Grant, DAG04/05.EG04, 2005-2006, HK$100,000.

R15. "Simulation and Optimization Laboratory" (with Xiangtong Qi), HKUST Engineering School Equipment Fund, 2005, HK$638,000.

Industrial Experience

GOSS Institute of Research Management, 2013 – present
The Venetian Macau-Resort-Hotel, 2013
Shanghai Stock Exchange, 2010 – 2011
Jardine OneSolution (Hong Kong), 2008
ENW Electronics (Hong Kong), 2007 – 2008
Hong Kong Air Cargo Terminal Limited (HACTL), 2004 – 2005
The Christ Hospital, Health Alliance (Cincinnati, OH), 2000
Tsinghua-Huacheng Automotive Research Institute (Beijing), 1999
Delphi Automotive Systems (Beijing), 1997 – 1999

Courses Taught

At City University of Hong Kong

FB8912   *Business Research Methods*, Fall 2014
EF5210   *Option Pricing*, Spring 2015

At Hong Kong University of Science and Technology

IELM2010 *Industrial Engineering and Modern Logistics*, Spring 2013, 14
IELM313   *System Simulation*, Spring 2005, 06, 07, 08, 09, 10
IELM320   *Facilities Layout and Material Handling*, Fall 2004, 05, 06, 07, 09, 10
IELM610   *Design and Analysis of Simulation Experiments*, Spring 06, Fall 08
EEMT512   *Operations/Production Management*, Fall 2006, 07, 08, 09, 10, 12, 13

EEMT516   *Transportation and Logistics Management*, Spring 2009
EEMT550   *Engineering Statistics and Simulation*, Spring 2011, Summer 12, Spring 13, 14

At Northwestern University

IEMS315   *Stochastic Models and Simulation*, Spring 2004

Postgraduate Supervision

- Guangwu Liu, Ph.D., June 2009, HKUST
  Placement after graduation: Assistant Professor, Department of Management Sciences, College of Business, City University of Hong Kong

- Lihua Sun, Ph.D., August 2010 (co-supervised by Ning Cai), HKUST
  Placement after graduation: Assistant Professor in the Department of Economics and Finance, School of Economics and Management, Tongji University

- Zhaolin Hu, Ph.D., August 2011, HKUST
  Winner of the 3rd Prize of *Prisker Doctoral Dissertation Award* from *Institute of Industrial Engineers*
  Placement after graduation: Assistant Professor, Department of Management Science and Engineering, School of Economics and Management, Tongji University

- Jun Luo, Ph.D., August 2013 (co-supervised by Jiheng Zhang), HKUST
  Placement after graduation: Assistant Professor, Department of Management Science, Antai School of Economics and Management, Shanghai Jiaotong University

- Weiwei Fan, Ph.D., August 2015 (expected, co-supervised by Xiaowei Zhang), HKUST
  Placement after graduation: Assistant Professor, Department of Finance and Statistics, School of Management, University of Science and Technology of China

- Yi Yang, M.Phil., August 2008, HKUST
- Richard Wong, M.Phil., August 2010, HKUST
- Tao Yang, M.Phil., January 2013, HKUST
- Yang Wu, M.Phil., August 2013, HKUST
- Jicheng Xing, August 2014, HKUST
- Hongchi Lu, August 2014, HKUST

- Jin Fang, current Ph.D. student (with Hong Kong Fellowship, co-supervised by Jiheng Zhang)
- Huanhuan Yang, current M.Phil. student
- Le Yu, current M.Phil. student
- Haihui Shen, current Ph.D. student

Invited Keynote Speeches

- Invited Speaker, "Simulation-based optimization: methods and applications", *The 10th Academic Meetings of the Operations Research Society of China*, Xuzhou, October 2014
- Keynote Speaker, "Linking parameter estimation and performance evaluation through

simulation-based learning", *Mini-Workshop on Operations Management and Management Science*, Shanghai Jiaotong University, November 2013

- Invited Tutorial Speaker, "Marriage of Simulation and Optimization: Three Examples," *INFORMS International Conference*, June 2012
- Keynote Speaker, "Marriage of Simulation and Optimization: Three Examples," *The Ninth National Conference on Mathematical Programming*, April 2012
- Invited Tutorial Speaker (with Guangwu Liu), "Monte Carlo estimation of value-at-risk, conditional value-at-risk and their sensitivities," *The 2011 Winter Simulation Conference*, December 2011
- Keynote Speaker, "The exploration and exploitation tradeoff in discrete optimization via simulation," *National Science Foundation (NSF) Workshop on Simulation Optimization*, University of Maryland, May 2010
- Keynote Speaker, "Robust simulation of environmental policies when covariances among key uncertain parameters are ambiguous," *Exxon–Mobil Workshop on Stochastic Optimization*, National University of Singapore, April 2010
- Invited Tutorial Speaker (with Barry L. Nelson), "A brief introduction to optimization via simulation," *Winter Simulation Conference*, December 2009
- Invited Tutorial Speaker (with Nan Chen), "Monte-Carlo method in financial engineering," *Winter Simulation Conference*, December 2007

Organizing Committee of Conferences

- Track Coordinator, The Simulation Optimization Track, *The 2013 Winter Simulation Conference*, Washington DC, U.S.A., December 2013
- Executive Chairman, *The First Goss Forum on Private Equity*, Hong Kong, October 2013
- Chair, Organizing Committee, *East Asian Simulation Workshop*, Hong Kong, August 2013
- Chair, Program Committee, *The NSF Workshop on Computer Simulation*, Shanghai, China, July 2012
- Track Coordinator, The Risk Analysis Track, *The 2010 Winter Simulation Conference*, Baltimore, MD, U.S.A., December 2010
- Chair, Program Committee, *The First INFORMS International Conference on Service Science,* Hong Kong, August 2009
- Member, Program Committee, *The Second Production and Operations Management Society (Hong Kong) International Conference*, Hong Kong, January 2011
- Member, Program Committee, *the Sixth International Workshop on Risk Management*, Nanjing, China, October 2009
- Member, Program Committee, *the International Symposium on Combinatorics, Algorithms, Probabilistic and Experimental Methodologies*, Hangzhou, China, April 2007

Membership in Local Committees

- Member, Senate, City University of Hong Kong, 2014 – present
- Member, University Court, City University of Hong Kong, 2014 – present
- Member, Quality Assurance Committee, City University of Hong Kong, 2014 – present
- Member, Board of College of Business, City University of Hong Kong, 2014 – present
- Member, Department Executive Committee, Department of Economics and Finance, City

University of Hong Kong, 2014 – present

- Member, Department Executive Committee, Department of Management Sciences, City University of Hong Kong, 2014 – present
- Member, IELM Departmental Merit Salary Review Committee, 2014
- Member, School of Engineering Substantiation and Promotion Committee, 2013 – 2014
- Member, IELM Department Postgraduate Committee, 2008 – 2014
- Member, MSc. EEM Program Committee, 2008 – 2014
- Member, IELM Department Executive Committee, 2009 – 2012
- Member, University Financial Engineering Task Force, 2009 – 2011
- IELM Department Coordinator to HKUST Library, 2006 – 2014
- Founding faculty advisor, IIE Student Chapter at HKUST, 2009 – 2010
- Member, Engineering Task Force on International and Mainland Strategy, 2009
- Member, IELM Department Undergraduate Committee, 2004 – 2008
- Member, IELM Department Headship Search Committee, 2006 – 2007

Membership in Professional Society

- Elected council member, the INFORMS Simulation Society, 2014 – present
- Member, Steering Committee, Operational Research Society of China, 2012 – present
- Member, Steering Committee, Mathematical Programming Society of China, 2010 – present
- Judge, INFORMS JFIG Paper Competition, 2010, 2012
- Member, Awards Committee, INFORMS Simulation Society, 2008 – 2010
- Newsletter Editor, INFORMS Simulation Society, 2006 – 2008
- Member, Communication Committee, INFORMS Simulation Society, 2006 – 2008
- Member, Institute for Operations Research and Management Science (INFORMS), INFORMS Simulation Society, and INFORMS Applied Probability Society