

CURRICULUM VITAE¹ OF CHI-GUHN LEE

PROFESSOR, DEPARTMENT OF MECHANICAL AND INDUSTRIAL ENGINEERING

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Academic Qualifications

2001 Ph.D., Industrial & Operations Engineering, University of Michigan, Ann Arbor, Michigan, USA

1992 M.S., Industrial Engineering, KAIST, Daejeon, Korea

1990 B.S., Industrial Engineering, Seoul National University, Seoul, Korea.

Professional Positions Held

July 2016 - Present: Professor, Department of Mechanical and Industrial Engineering, University of Toronto, Canada.

July 2006 - June 2016: Associate Professor, Department of Mechanical and Industrial Engineering, University of Toronto, Canada.

August 2007-June 2008: Visiting Associate Professor, Department of Industrial and Systems Engineering, National University of Singapore, Singapore.

August 2001 - June 2006 Assistant Professor, Department of Mechanical and Industrial Engineering, University of Toronto, Canada.

February 1993 - July 1996 Senior Software/Systems Engineer, Information and Technology Research Center, Samsung, Seoul, Korea.

Publications

J35 Lee, M., Kwon, R.H., and Lee, C.-G., "Bounds for Portfolio Weights in Decentralized Asset Allocation," *INFOR*, forthcoming, 2016.

¹As of September 2, 2016.

- J34** Kim, K., Lee, C.-G., and Park, S. "Dynamic Pricing with "BOGO" Promotion in Revenue Management," *International Journal of Production Research*, Vol. 54, Issue 17, pp. 5283-5302, 2016.
- J33** Wang, J. and Lee, C.-G., "Multi-state Bayesian Control Chart over a Finite Horizon," *Operations Research*, Vol. 63, Issue 4, pp. 949-964, 2015.
- J32** Jung, H., Lee, C.-G., and White, C.C., "Socially Responsible Service Operations Management: An Overview," *Annals of Operations Research*, Vol. 230, pp. 1-16, 2015.
- J31** Joo, S.-H., Lee, C.-G., Park, J.-K. and Hong, Y.-E., "Goodwill Write-offs by Overvalued Companies in the late-2000s Financial Crisis: A Big Bath Scenario," *Korea Business Review*, No. 30, Issue 2, pp. 119-136, 2015.
- J30** Zeng, Z., and C.-G. Lee, "Pairs trading: optimal thresholds and profitability," *Quantitative Finance*, Vol. 14, No. 11, pp. 1881-1893, 2014.
- J29** Kim, K.K., Liu, J., and Lee, C.-G. "Stochastic Inventory Management with Price Search," *IIE Transactions*, to appear, 2014.
- J28** Park, S.C., and Lee, C.-G. "Survey on the Virtual Commissioning of Manufacturing Systems," *Journal of Computational Design and Engineering*, Vol. 1, No. 3, pp. 213-222, 2014.
- J27** Ferreira, F. and Lee, C.-G., "An Integrated Two-stage Diffusion of Innovation Model with Market Segmented Learning and Network Dynamics," *Technological Forecasting and Social Change*, Vol. 88. pp. 189-201, October 2014.
- J26** Liu, Y., T. Chan, C.-G. Lee, Y.-B. Cho, and M.K. Islam, "A stochastic model for tumor geometry evolution during radiation therapy in cervical cancer," *Medical Physics*, Vol. 41, Issue 2, 021705, February 2014.
- J25** Wang, T., Guo, S. and Lee, C.-G., "Manufacturing task semantic modeling and description in cloud manufacturing system," *International Journal of Advanced Manufacturing System*, Vol. 71, pp. 2017-2031, January 2014.
- J24** Shlakhter, O., and C.-G. Lee, "Acceleration Operators in the Modified Policy Iteration Algorithms for Markov Decision Processes," *Mathematical Methods of Operations Research*, Vol. 78, Issue 1, pp. 61-76, August 2013.
- J23** Wang, L., C-X. Dun, C.-G. Lee, Q-L. Fu, and Y-R. Zeng, "Model and algorithm for fuzzy joint replenishment and delivery scheduling without explicit membership function," *International Journal of Advanced Manufacturing Technology*, Vol. 66, Issue 9-12, pp. 1907-1920, June 2013.

- J22** Wang, L., Q-L. Fu, C.-G. Lee, and Y-R. Zeng, "Model and algorithm of fuzzy joint replenishment problem under credibility measure on fuzzy goal," *Knowledge-Based Systems*, Vol. 39, pp. 57-66, February 2013.
- J21** K-K. Kim, and C.-G. Lee, "Evaluation and Optimization of Feed-In Tariffs," *Energy Policy*, Vol. 49, pp.192-203, October 2012.
- J20** M. Kim, R. Jiang, V. Makis, and C.-G. Lee, "Optimal Bayesian Fault Prediction Scheme for a Partially Observable System Subject to Random Failure," *European Journal of Operational Research*, Vol. 214, pp. 331-339, 2011.
- J19** M.M. Tajbakhsh, C.-G. Lee, and S. Zolfaghari, "An Inventory Model with Random Discount Offerings," *Omega*, Vol. 39, pp. 710-718, 2011.
- J18** M.I.M. Wahab and C.-G. Lee, "Pricing swing options with regime switching," *Annals of Operations Research*, Vol. 185, pp. 139-160, 2011.
- J17** Z. Ma, R.H. Kwon, and C.-G. Lee, "A Stochastic Winner Determination Problem for Truckload Transportation Procurement with Shipment Uncertainty," *Transportation Research Part-E*, Vol. 46, Issue 1, pp. 49-60, January 2010.
- J16** O. Shlahkter, C.-G. Lee, D. Khmelev, and N. Jaber, "Acceleration Operators in the Value Iteration Algorithms for Markov Decision Processes," *Operations Research*, Vol. 58, No. 1, pp. 193-202, 2010.
- J15** M.M. Tajbakhsh, C.-G. Lee, and S. Zolfaghari, "On the Supplier Diversification under Binomial Yield," *OR Letters*, Vol. 38, Issue 6, pp. 505-509, November, 2010.
- J14** D. Wu and C.-G. Lee, "Stochastic DEA with Ordinal Data Applied to a Multi-attribute Pricing Problem," *European Journal of Operational Research*, Vol. 207, Issue 3, pp. 1679-1688, 16 December, 2010.
- J13** M.M. Tajbakhsh, C.-G. Lee, and S. Zolfaghari, "Sole Sourcing in EOQ Models with Binomial Yield," *Journal of Purchasing and Supply Management*, Vol. 16, Issue 3, pp. 163-170, September 2010.
- J12** M.I.M. Wahab and C.-G. Lee, "A Lattice Approach to Pricing Multivariate Contingent Claims with Regime Switching," *Journal of Derivatives*, Vol. 17, No. 1, pp. 49-61, 2009.
- J11** E.K. Doyle, C.-G. Lee, and D.I. Cho, "Justification for the Next Generation of Maintenance Modeling Techniques," *Journal of the Operational Research Society*, Vol. 60, pp. 461-470, 2008.

- J10** M.I.M. Wahab, D. Wu, and C.-G. Lee, “A Generic Approach to Measuring the Machine Flexibility of Manufacturing Systems,” *European Journal of Operational Research*, Vol. 186, pp. 137-149, 2008.
- J9** H. Jung, B. Jeong, and C.-G. Lee, “An order quantity negotiation model for distributor-driven supply chain,” *International Journal of Production Economics*, Vol. 111, pp. 147-158, 2008.
- J8** C.-G. Lee, R. H. Kwon, and Z. Ma, “Carrier’s Optimal Bid Generation Problem in Combinatorial Auctions for Transportation Procurement”, *Transportation Research Part-E*, Vol. 43, pp. 173-191, 2007.
- J7** S.-J. Jeong, C.-G. Lee, and J. Bookbinder, “The European Freight Railroad System in a Hub-and-Spoke Network,” *Transportation Research Part-A*, Vol. 41, pp. 523-536, 2007.
- J6** I. Hajizadeh and C.-G. Lee, “Alternative Configurations for Cutting Machines in a Tube Cutting Mill,” *European Journal of Operational Research*, Vol. 183, pp. 1385-1396, 2007.
- J5** J. Liu and C.-G. Lee, “Evaluation of Inventory Policies with Unidirectional Substitutions,” *European Journal of Operational Research*, Vol. 182, pp 145-163, 2007.
- J4** C.-G. Lee, M. Epelman, C. White, and Y. Bozer, “A Shortest Path Approach to the Multiple-Vehicle Routing Problem with Split Pick-Ups”, *Transportation Research Part-B*, Vol. 40, pp. 265-284, 2006.
- J3** H. Jung, B. Jeong, and C.-G. Lee, “Collaborative Agent-based Supply Chain Planning for Functional Product Markets,” *IE Interfaces*, Vol. 19, No. 1, pp. 53-61, 2006.
- J2** Y. A. Bozer and C.-G. Lee, “Using Existing Workstations as Transfer Stations in Tandem AGV Systems”, *Journal of Manufacturing Systems*, Vol. 23, No. 3, pp. 229-241, 2004.
- J1** C.-G. Lee and J. Kim, “Design and Implementation of the Class Library Manager for Application Builder,” *IE Interfaces*, Vol 8, No. 3, pp. 11-23, 1995.

Publications under Review

- U6** Tat, R., Taleizadeh, A.A. and Lee, C.-G., “Cooperation on Capacitated Inventory Situations with Permissible Delay in Payments,” *European Journal of Operational Research*, under review, 2016.
- U5** Harijani, A.M., Karrimi, B. and Lee, C.-G., “Multi-period Sustainable and Integrated Recycling Network for Municipal Solid Waste,” *Journal of Cleaner Production*, under review, 2016.
- U4** Najafi, S., Lee, C.-G., Najafi-Asadolahi, S. and Nahmias, S., “Dynamic Pricing under Consumer’s Sequential Search,” *Management Science*, under review, 2016.

- U3** Wahab, M.I.M. and Lee, C.-G., “Valuation of Manufacturing Flexibility with 2 State Variables and Regime Switching,” *Production and Operations Management*, under review, 2016.
- U2** Wang, J. and Lee, C.-G., “Bayesian economic change detection with multiple change types,” *European Journal of Operational Research*, under review, 2016.
- U1** Lee, M., Kwon, R.H., and Lee, C.-G., “Incorporating Uncertainty in Portfolio Weights in Asset Allocation,” *Journal of the Operational Research Society*, under review, 2015.

Technical Reports

- T9** C.-G. Lee and A.V. Esensoy, “A Time Competition Duopoly Game for New Technology Introduction,” MIE OR Technical Reports (TR2007-01), Department of Mechanical and Industrial Engineering, University of Toronto, 2007.
- T8** D. Wu and C.-G. Lee, “Stochastic DEA with Ordinal Data Applied to a Multi-Attribute Pricing Problem,” MIE OR Technical Reports (TR2007-02), Department of Mechanical and Industrial Engineering, University of Toronto, 2007.
- T7** C.-G. Lee and W. El-Khoury, “An Optimal Inventory Clearance Model for Strategic Returns,” MIE OR Technical Reports (TR2007-03), Department of Mechanical and Industrial Engineering, University of Toronto, 2007.
- T6** M.I.M. Wahab, C.-G. Lee, J. Arinez, and S. Biller, “Valuing Flexibility of Manufacturing Systems with Regime-Switching,” Research Report (MRS-999), GM Technical & Development Center, November 2006.
- T5** M.M. Tajbakhsh, C.-G. Lee, and S. Zolfaghari, “A Multi-Supplier Inventory Model with Random Discount Offers,” MIE OR Technical Reports (TR2005-09), Department of Mechanical and Industrial Engineering, University of Toronto, 2005.
- T4** O. Shlakhter, C.-G. Lee, D. Khmelev, and N. Jaber, “Acceleration Operators in the Value Iteration Algorithms for Markov Decision Processes,” MIE OR Technical Reports (TR2005-04), Department of Mechanical and Industrial Engineering, University of Toronto, 2005.
- T3** M.I.M. Wahab and C.-G. Lee, “A Lattice Approach to a Multi-Variate Contingent Claims with Regime Switching,” MIE OR Technical Reports (TR2005-03), Department of Mechanical and Industrial Engineering, University of Toronto, 2005.
- T2** M.I.M. Wahab and C.-G. Lee, “A Lattice Framework for Option Pricing with 2 State Variables and Regime Switching,” MIE OR Technical Reports (TR2005-02), Department of Mechanical and Industrial Engineering, University of Toronto, 2005.

T1 C.-G. Lee and Z. Ma, “The Generalized Quadratic Assignment Problem,” MIE OR Technical Reports (TR2005-01), Department of Mechanical and Industrial Engineering, University of Toronto, 2005.

Book/Chapters

B2 C.-G. Lee, “Purchasing and Sourcing,” an invited book chapter in *CRC Handbook on Logistics Engineering*, edited by D. Taylor, CRC Press, 2007.

B1 M.M. Tajbakhsh, S. Zolfaghari, S. and C.-G. Lee, “Supply Uncertainty and Diversification: A Review,” in *Trends in Supply Chain Design and Management: Technologies and Methodologies*, edited by F. Chen, B. Jeong, and H. Jung, Springer, 2007.

Refereed Proceedings

P3 C.-G. Lee, “Valuation of Manufacturing Flexibility: A Financial Engineering Approach,” *Proceedings of ICMATE (International Conference for Mechanical and Automotive Technologies) 2006*, Jeonju, Jeonbuk, Korea, pp. 31-36, April 26-28, 2006.

P2 C.-G. Lee and A.V. Esensoy, “A Time Competition Duopoly Game for New Technology Introduction,” *Proceedings of UKC 2005*, Irvine, CA, USA, May 2005.

P1 C.-G. Lee, J. Park, and J. Kim, “Development of Integrated Configurable Application Builder based on Object-Oriented Framework,” *Proceedings of the 1995 International Conference on Applications of Databases*, San Jose, CA, USA, pp. 24-30, December 1995.

Teaching

Faculty Teaching Award: Nominated for the Faculty of Applied Science and Engineering Teaching Award in 2007.

Departmental Teaching Excellence Award: The winner of the 2007 MIE Teaching Excellence Award.

Centennial Award: Mr. Thomas Kim won 2006 Centennial Award, the highest honor awarded to a single graduating student in the Industrial Engineering Program of the Department of Mechanical and Industrial Engineering at the University of Toronto. Mr. Thomas Kim finished his thesis under my supervision.

Centennial Award: Mr. Ali Esensoy won 2005 Centennial Award, the highest honor awarded to a single graduating student in the Industrial Engineering Program of the Department of Mechanical

and Industrial Engineering at the University of Toronto. Mr. Ali Esensoy finished his thesis under my supervision.

Undergraduate

Fall of 2011: “Financial Engineering” (MIE375), Department of Mechanical and Industrial Engineering, University of Toronto.

Fall of 2002, 2003, 2004, 2005, 2006, 2008, 2009, 2010: “Decision Analysis” (MIE566), Department of Mechanical and Industrial Engineering, University of Toronto.

Spring of 2002, 2003, 2004, 2005, 2006, 2007, 2009, 2010, 2011: “Resource and Production Systems” (MIE363, MIE373), Department of Mechanical and Industrial Engineering, University of Toronto.

Spring of 2001: “Material Handling Systems” (IOE449, MFG449), Department of Industrial and Operations Engineering, University of Michigan

Graduate

Summer of 2011: “Supply Chain Management” (APS1017), Faculty of Applied Science and Engineering, University of Toronto.

Spring of 2004, 2005: “Supply Chain Management and Logistics” (MIE1712), Department of Mechanical and Industrial Engineering, University of Toronto.

Fall of 2004, 2006; Spring of 2011: “The Markov Decision Processes” (MIE1615), Department of Mechanical and Industrial Engineering, University of Toronto.

Fall of 2003, 2005, 2008, 2009, 2010; Spring of 2009: “The Stochastic Processes” (MIE1605), Department of Mechanical and Industrial Engineering, University of Toronto.

Supervision

Summary of career supervision since September 2001 is as follows:

Total number of Ph.D. students under supervision	$8^2(4)^3$
Total number of M.A.Sc. students under supervision	6(4)
Total number of M.Eng students under supervision	16(3)
Total number of researchers and post-doc’s under supervision	9(1)

Ph.D. Students

In Progress

Jue Wang, Mechanical & Industrial Engineering, University of Toronto, “Condition-based Maintenance”, started in Fall, 2009.

Nicholas Yeung, Mechanical & Industrial Engineering, University of Toronto, “Optimization of Intensive Care Network in Ontario,” started in Spring, 2011.

Sajjad Najafi, Mechanical & Industrial Engineering, University of Toronto, “Dynamic Releasing and Pricing Optimization,” started in September 2012.

Dmitri Stepanov, Materials Science & Engineering, University of Toronto, “Procurement Optimization with Flexible Bill-Of-Materials,” co-supervised with Professor Nazir P. Kherani, started in September 2012.

Completed

Kevin Ferreira, University of Toronto, “Innovation Diffusion Models with Discrete Consumer Choices,” completed in Fall, 2012; Director of Research, Viafoura Inc., Toronto, ON, Canada.

Oleksandr Shlakhter, University of Toronto, “Acceleration Techniques for the Value Iteration Algorithm of Markov Decision Processes,” completed in September, 2009; Post-doctoral Fellow, Rotman school of management, University of Toronto, Toronto, Ontario, Canada.

Jun Liu, University of Toronto, “A Stochastic Inventory Model with Price Quotation,” completed in 2008; Analyst, Ontario Power Generation, Toronto, Canada.

Jaber Nasser, University of Toronto, “Accelerating Successive Approximation Algorithm via Action Elimination,” completed in 2008; Assistant Professor, Department of Industrial Engineering, The Hashemite University, Jordan.

Zhong Ma (co-supervised by Roy Kwon), University of Toronto, “Combinatorial Auctions in Transportation,” completed in 2008; Analyst, TD Canada Trust, Toronto, Canada.

Mohammad Mahdi Tajbakhsh, University of Toronto, “Supplier Selection Problem with Uncertainties,” completed in 2007; Assistant Professor, Department of Industrial Engineering, Dalhousie University, Halifax, Nova Scotia, Canada.

²Career total since August 2001.

³Numbers in parenthesis indicate those who are currently in progress.

Wahab Mohamed, Ph.D., University of Toronto, “Multi-Variate Contingent Claim with Regime Switching,” completed in 2006; Associate Professor, Department of Mechanical and Industrial Engineering, Ryerson University, Toronto, Ontario, Canada.

Kevin Doyle, Ph.D., University of Toronto, “Subjective Lifetime Distribution Elicitation for Optimal Maintenance of Nuclear Facilities,” completed in 2006.

M.A.Sc. Students

In Progress

Yifang Liu (co-supervised by Timothy Chan), Mechanical & Industrial Engineering, University of Toronto, “Adaptive Radiation Therapy Optimization for Cervix Cancer”, started in Fall, 2011

Zhengqin Zeng, Mechanical & Industrial Engineering, University of Toronto, “A Stochastic Control Approach to Pairs Tradings”, started in Fall, 2012

Ruoqio Wang, Mechanical & Industrial Engineering, University of Toronto, “Self-similarity Modelling in Markov Process”, started in Fall, 2012

Mark Michael (co-supervised by Timothy Chan), Mechanical & Industrial Engineering, University of Toronto, “A Combinatorial-Auction Approach to Radiation Therapy Optimization”, started in Fall, 2012

Completed

Johnny Tam, Mechanical & Industrial Engineering, University of Toronto, “Cut-off time optimization with transportation constraints,” started in Fall, 2009 and completed in Summer, 2011.

Nicholas Yeung, Mechanical & Industrial Engineering, University of Toronto, “Optimal Use of Flight Passes,” started in Fall, 2009 and fast-tracked to PhD program in Spring, 2011.

Kevin Ferreira, Mechanical & Industrial Engineering, University of Toronto, “Dynamic Optimal Pricing for Multiple Products,” started in Fall, 2004 and completed in Summer, 2006.

Daphnie Sniekers (co-supervised by Roy Kwon), Mechanical & Industrial Engineering, University of Toronto, “Logistics Network Design with Uncertain Demands,” started in Fall, 2003 and completed in Summer, 2005.

Iman Hajizadeh, Mechanical & Industrial Engineering, University of Toronto, “The Continuous Cutting Stock Problem with Setups,” started in Fall 2002 and completed in Summer, 2004.

Zhong Ma, Mechanical & Industrial Engineering, University of Toronto, “Generalized Quadratic Assignment Problem”, started in Fall, 2001 and completed in Summer, 2003

Honours and Awards

Nominated for the Faculty of Applied Science and Engineering Teaching Award in 2007.

Departmental Teaching Excellence Award: The winner of the MIE Teaching Excellence Award, 2007.

Canadian Foundation for Innovation Researcher, 2002.

Nominee of 2000 Rackham Pre-doctoral Fellowship.

Excellent employee award from Samsung, 1995.

Recipient of Rotary Club Fellowship, 1984

Services

Member of Editorial Board of the following journals

- International Journal of Knowledge Engineering and Data Mining,
- The Open Civil Engineering Journal

Cluster Chair of Quantitative Finance and Risk Management, CORS (Canadian Operational Research Society) Annual Meeting, Niagara Falls, ON, Canada, June, 2012.

Cluster Chair of Quantitative Finance and Risk Management, CORS (Canadian Operational Research Society) Annual Meeting, Vancouver, BC, Canada, May, 2013.

Member of Program Committee of the following conferences

- Spring World Congress on Engineering and Technology, Wuhan, China, May, 2012.
- The First Three-Country Risk Forum, Toronto, ON, Canada, October, 2011.
- IEEE International Conference on Industrial Engineering and Engineering Management, Singapore, 2007.
- International Conference on Supply Chain Management and Information Systems, Hong Kong, 2006.

Workshop Co-chair of Quantitative Finance and Risk Management, Toronto, ON, Canada, March, 2012.

Conference Co-chair of Korea-Canada Conference, Vancouver, BC, Canada, August, 2011.

Associate Chair of Undergraduate Studies, Department of Mechanical and Industrial Engineering, University of Toronto, since 2011.

Referee for the following journals

- Management Science,
- Operations Research,
- Transportation Science,
- IIE Transactions,
- INFORMS Journal on Computing,
- European Journal of Operational Research,
- Computers and Industrial Engineering,
- OR Spectrum,
- Internal Journal of Services Operations and Informatics

Patents

1. "System and Method for Prediction of Self-Similar Signal," United States Provisional Patent Application (File No: 61/592,352), International Patent Application (File No: 103-004PCT).