

CURRICULUM VITAE¹ OF CHI-GUHN LEE

PROFESSOR OF INDUSTRIAL ENGINEERING AND DIRECTOR OF C-MORE²

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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.

¹As of January 27, 2020.

²Centre for Maintenance Optimization and Reliability Engineering

Refereed Publications

- 54 Yang, L, Peng, R. Li, G. and Lee, C.-G., “Operations management of wind farms integrating multiple impacts of wind conditions and resource constraints,” *Energy Conversion and Management*, Vol. 205, 112162, 2020.
- 53 Wahab, M.I.M. and Lee, C.-G., “Valuation of Manufacturing Flexibility with 2 State Variables and Regime Switching,” *International Journal of Production Research*, under review, 2020.
- 52 Chen, K. and Lee, C.-G., “Attentive Gaussian Processes for Probabilistic Time-series Generation,” *ICML*, under review, February 2020.
- 51 Gimelfarb, M. Sanner, S. and Lee, C.-G., “Model-Aware Policy Reuse using Mixture Density Networks,” *ICML*, under review, February 2020.
- 50 Liu, L., Javid, A. and Lee, C.-G., “Optimal Distribution of Perishable Foods with Storage Temperature Control, Quality Requirements, and Delivery Time Windows,” *International Journal of Production Economics*, revision under review, 2020.
- 49 Yang, B., Lei, Y. and Lee, C.-G., “Deep Partial Transfer Learning Network: A Method to Selectively Transfer Diagnostic Knowledge across Related Machines,” *IEEE Transactions on Industrial Informatics*, revision in preparation, 2020.
- 48 Aboussalah, A. and Lee, C.-G., “Continuous Control with Stacked Deep Dynamic Recurrent Reinforcement Learning for Portfolio Optimization,” *Expert Systems with Applications*, Vol. 140, February 2020.
- 47 Li, G., Yang, L. and Lee, C.-G., “A Hybrid Prognostic Framework - Adaptive Degradation Model with Deep Learning-Driven Trajectory,” *IEEE Transactions on Industrial Informatics*, under review, 2020.
- 46 Tat, R., Taleizadeh, A.A. and Lee, C.-G., “Cooperation on Capacitated Inventory Situations with Permissible Delay in Payments,” *RAIRO - Operations Research*, revision under review, 2020.
- 45 Najafi, S., Lee, C.-G., Najafi-Asadolahi, S. and Nahmias, S., “Dynamic Pricing under Consumer’s Sequential Search,” *Production and Operations Management*, revision under review, 2019.
- 44 Gimelfarb, M. Sanner, S. and Lee, C.-G., “ ϵ -BMC: A Bayesian Ensemble Approach to Epsilon-Greedy Exploration in Model-Free Reinforcement Learning,” *Uncertainties in Artificial Intelligence (UAI) 2019*, July 2019.
- 43 Yang, L., Ye, ZS., Lee, C.-G., Yang, SF, and Peng, R., “A two-phase preventive maintenance policy considering imperfect repair and postponed replacement,” *European Journal of Operational Research*, Vol. 274, Iss. 3, pp. 966-977, May 2019.

- 42 Gimelfarb, M. Sanner, S. and Lee, C.-G., "Reinforcement Learning with Multiple Experts: A Bayesian Model Combination Approach," *Neural Information Processing Systems (NIPS) 2018*, December 2018.
- 41 Lee, M., Kwon, R.H., and Lee, C.-G., "Decentralized strategic asset allocation with global constraints," *Journal of Asset Management*, Vol 19, Issue 1, pp 12-16, 2018
- 40 Shaikh, M., Kim, J.-S., Giwa, B., Lee, C.-G., Stancari, S., Montanari, D., Anceschi, G. and Ferrari, F., "Multi-agent Reinforcement Learning Approach to Building Energy and Comfort Management," The 7th International Energy Conference & Workshop - REMOO, May 10-12, 2017, Venice, Italy
- 39 Harijani, A.M., Manour, S., Karimi, B. and Lee, C.-G., "Multi-period Sustainable and Integrated Recycling Network for Municipal Solid Waste," *Journal of Cleaner Production*, Vol. 151, pp. 96-108, 2017.
- 38 Lee, M., Kwon, R.H., and Lee, C.-G., "Bounds for Portfolio Weights in Decentralized Asset Allocation," *INFOR*, Vol. 54, Issue 4, pp. 344-354, 2016.
- 37 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.
- 36 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.
- 35 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.
- 34 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.
- 33 Zeng, Z., and C.-G. Lee, "Pairs trading: optimal thresholds and profitability," *Quantitative Finance*, Vol. 14, No. 11, pp. 1881-1893, 2014.
- 32 Kim, K.K., Liu, J., and Lee, C.-G. "Stochastic Inventory Management with Price Search," *IIE Transactions*, to appear, 2014.
- 31 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.
- 30 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.

- 29 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.
- 28 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.
- 27 Shlahkter, 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.
- 26 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.
- 25 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.
- 24 K-K. Kim, and C.-G. Lee, "Evaluation and Optimization of Feed-In Tariffs," *Energy Policy*, Vol. 49, pp.192-203, October 2012.
- 23 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.
- 22 M.M. Tajbakhsh, C.-G. Lee, and S. Zolfaghari, "An Inventory Model with Random Discount Offerings," *Omega*, Vol. 39, pp. 710-718, 2011.
- 21 M.I.M. Wahab and C.-G. Lee, "Pricing swing options with regime switching," *Annals of Operations Research*, Vol. 185, pp. 139-160, 2011.
- 20 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.
- 19 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.
- 18 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.

- 17 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.
- 16 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.
- 15 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.
- 14 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.
- 13 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.
- 12 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.
- 11 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.
- 10 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.
- 9 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.
- 8 J. Liu and C.-G. Lee, "Evaluation of Inventory Policies with Unidirectional Substitutions," *European Journal of Operational Research*, Vol. 182, pp 145-163, 2007.
- 7 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.
- 6 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.
- 5 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.

- 4 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.
- 3 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.
- 2 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.
- 1 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.

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.

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

Spring of 2019, 2020: “Dynamic and Distributed Decision Making” (MIE567), Department of Mechanical and Industrial Engineering, University of Toronto

Spring of 2002, 2003, 2004, 2005, 2006, 2007, 2009, 2010, 2011, 2012, 2013, 2014, 2015, 2016, 2017, 2018: “Resource and Production Systems” (MIE363, MIE373), 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.

Fall of 2011: “Financial Engineering” (MIE375), 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, 2012, 2013, 2014, 2015, 2016, 2018, 2019: “Supply Chain Management” (APS1017), Faculty of Applied Science and Engineering, University of Toronto.

Summer of 2013, 2014, 2015, 2016, 2017, 2018, 2019: “Financial Engineering 2” (APS1022), Co-teaching with Prof Kwon, 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, 2017, 2018, 2019, 2020: “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	21 ³ (9) ⁴
Total number of M.A.Sc. students under supervision	19(6)
Total number of M.Eng students under supervision	51(5)
Total number of post-doc's under supervision	4(1)

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

Associate Editor of the following journals:

- 2015-Present: Enterprise Information System
- 2014-Present: International Journal of Industrial Engineering: Theory, Applications and Practice

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

Conference Co-chair of Korea-Canada Conference, Niagara Falls, ON, Canada, August, 2014.

Conference Co-chair of Korea-Canada Conference, Kanaskis, AB, Canada, August, 2015.

²Career total since August 2001.

⁴Numbers in parenthesis indicate those who are currently in progress.

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

Academic Co-chair of the 4th Industry-Academia Workshop on Optimization and Machine Learning in Finance, Field Institute, Toronto, ON, 2018

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.

Associate Chair of Undergraduate Studies, Department of Mechanical and Industrial Engineering, University of Toronto, 2011 to 2014.

Associate Chair of Graduate Studies, Department of Mechanical and Industrial Engineering, University of Toronto, 2014 to 2018.

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).