

# SOONDO HONG

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## INTEREST AREAS

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### Facility Logistics and Simulation

- Self-organizing logistics operations and Batching & Assorting optimization
- Optimization Simulation: scenario design, simulation calibration, and optimization
- OR applications for systems logistics: robust optimization, stochastic modelling, and statistical inference
- Warehousing, Semiconductor, Display, Auto-assembly, and Container terminal industries

## EDUCATION

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### Ph.D., Industrial Engineering, August 2010

Dissertation: *Analysis and control of batch order-picking processes considering picker blocking*  
Co-advisors: Professors Brett A. Peters and Andrew L. Johnson  
Department of Industrial and Systems Engineering, Texas A&M University, College Station, Texas, USA

### M.S., Industrial Engineering, February 1996

Department of Industrial Engineering, Pohang University of Science and Technology (POSTECH), Pohang, Korea

### B.S., Industrial Engineering, February 1994

Department of Industrial Engineering, Pohang University of Science and Technology (POSTECH), Pohang, Korea

## EMPLOYMENTS

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Associate Professor, Department of Industrial Engineering, Pusan National University, 2018.3-  
Department Head, Department of Industrial Engineering, Pusan National University, 2020.3-2022.2  
Assistant Professor, Department of Industrial Engineering, Pusan National University, 2014.3-2018.2  
Principal Engineer, System engineering team, Samsung Display Corporation, 2012-2014  
Principal Engineer, LCD division, Samsung Electronics Corporation, 2011-2012  
Researcher, Korea Aerospace Research Institute (KARI), 2003  
Senior Researcher, Cyberdigm Corporation (<http://www.cyberdigm.co.kr>), 1999-2002  
Assistant Researcher, LG Semiconductor Corporation, 1996-1999

## PUBLICATIONS

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### International journals (SCIE)

1. J Kim and **S Hong**, 2022. "A dynamic storage location assignment model for a progressive bypass zone picking system with an S/R crane," *Journal of the Operational Research Society*, 73(5), 1155-1166
2. T Lee, J Lee, and **S Hong**, 2022. "Batch Assorting for Worker-following Assortment Carts in Parallel-aisle Order-assorting Systems," *IEEE Access*, 10, 44159 - 44169
3. H Fibrianto, B Kang, and **S Hong**, 2020. "A job sequencing problem of an overhead shuttle crane in a rail-based automated container terminal," *IEEE Access*, 8, 156362-156377
4. **S Hong**, 2020. "Performance evaluation of two-worker operations in a worker-to-cell order assorting system," *Journal of Manufacturing Systems*, 56(3), 414-424
5. Y Kim and **S Hong**, 2020. "Two picker cooperation strategies for zone picking systems with PTL technology," *IEEE Access*, 8, 106059-106070
6. H Fibrianto and **S Hong**, 2019. "Dynamic order batching in bucket brigade order picking systems with consecutive batch windows and non-identical pickers," *International Journal of Production Research*, 57(20), 6552-6568
7. **S Hong**, 2019. "A performance evaluation of bucket brigade order picking systems: Analytical and simulation approaches," *Computers & Industrial Engineering*, 135, 120-131
8. **S Hong**, 2018. "The effects of picker-oriented operational factors on hand-off delay in a bucket brigade order picking system," *OR Spectrum*, 40(3), 781-808
9. M Ha and **S Hong**, 2017. "Gene-regulatory interactions in embryonic stem cells represent cell-type specific gene regulatory programs," *Nucleic Acids Research*, 45(18), 10428-10435

10. **S Hong** and Y Kim, 2017. "A route-selecting order batching model with the S-shape routes in a parallel-aisle order picking system," *European Journal of Operational Research*, 257(1), 185-196
11. **S Hong**, AL Johnson, and BA Peters, 2016. "Order batching in a bucket brigade order picking system considering picker blocking," *Flexible Services and Manufacturing Journal*, 28 (3), 425-441
12. M Ha and **S Hong**, 2016. "DNA context represents transcription regulation of the gene in mouse embryonic stem cells," *Scientific reports*, 6
13. **S Hong**, AL Johnson, and BA Peters, 2015. "Quantifying picker blocking in a bucket brigade order picking system," *International Journal of Production Economics*, 170, 862-873
14. **S Hong**, 2014. "Two-worker blocking model with walk speed  $m$  in a narrow circular passage system", *European Journal of Operational Research*, 235 (3), 687–696
15. **S Hong**, AL Johnson, and BA Peters, 2013. "A note on picker blocking models in a parallel-aisle order picking system", *IIE Transactions*, 45(12), 1345-1355
16. M Ha, **S Hong**, and WH Li, 2013. "Predicting the probability of H3K4me3 occupation at a base-pair from the genome sequence context", *Bioinformatics*, 29(8), 1199-1205
17. **S Hong**, AL Johnson, and BA Peters, 2012. "Batch picking in narrow-aisle order picking systems with consideration for picker blocking", *European Journal of Operational Research*, 221(3), 557-570
18. **S Hong**, AL Johnson, and BA Peters, 2012. "Large-scale order batching in parallel-aisle picking systems", *IIE Transactions*, 44(2), 88-106
19. **S Hong** and A Banerjee, 2012. "A large-scale distributed decision-making procedure for a single-machine scheduling problem", *International Journal of Production Research*, 50(20), 5795-5808
20. **S Hong**, AL Johnson, HJ Carlo, D Nazzal, and JA Jimenez, 2011. "Optimizing the location of crossovers in conveyor-based automated material handling systems in semiconductor wafer fabs", *International Journal of Production Research*, 49(20), 6199-6226

#### International journals(Scopus)

1. J Park, P Joatiko, C Park, **S Hong**, 2022. "Average flow time estimation and its application for storage relocation in an order picking system," *IFIP International Conference on Advances in Production Management Systems*, Accepted
2. B Kang, B Kim, **S Hong**, 2022. "Sequential Optimization of a Temporary Storage Location for Cooperative Twin Overhead Shuttles in a Rail-based Automated Container Terminal," *IFIP International Conference on Advances in Production Management Systems*, Accepted
3. T Tran-vo, T Nguyen, **S Hong**, 2022. "Effects of Multiple Depots on Total Travel Distance in Parallel-aisle Manual Order Picking Systems," *IFIP International Conference on Advances in Production Management Systems*, Accepted
4. H Fibrianto, B Kang, B Kim, A Marbach, T Buer, H Haasis, **S Hong**, KH Kim, 2020. "A Simulation Study of a Storage Policy for a Container Terminal," *Lecture notes in logistics*, 7, 62-69
5. **S Hong** and Y Kim, 2018. "The effects of loosely coupled hand-off operations on bucket brigade order picking systems," *Industrial Engineering & Management Systems*, 17(4), 745-756
6. IK Singgih, X Jin, **S Hong**, KH Kim, 2016. "Architectural design of terminal operating system for a container terminal based on a new concept," *Industrial Engineering & Management Systems*, 15(3), 278-288
7. IK Singgih, **S Hong**, KH Kim, 2016. "Flow path design for automated transport systems in container terminals considering traffic congestion," *Industrial Engineering & Management Systems*, 15(1), 19-31
8. **S Hong**, 2015. "Order batch formations for less picker blocking in a narrow-aisle picking system," *Industrial Engineering & Management Systems*, 14 (3), 289-298

#### Domestic journals

1. H Kim, T Lee, G Kang, **S Hong**, 2022. "A study of a video-based simulation input modeling procedure in a construction equipment assembly line," *The Korea Journal of Bigdata*, Accepted
2. G Lee, G Han, G Kang, J Lee, **S Hong**, 2022. "A simulation-based genetic algorithm for a dispatching rule in a flexible flow ship with rework process," *The Korea Journal of Bigdata*, Accepted
3. G Han, B Kang, H Kim, **S Hong**, 2022. "A GA-based Optimization of a Weighted Lot Targeting Rule in a Semiconductor Wafer Fab," *Journal of the Korean Institute of Industrial Engineers*, Accepted
4. T Lee, Y Kim, **S Hong**, 2022. "A Simulation Study for an Operational Design of a Robot-based Digital Assorting System," *Korea Logistics Review*, 32 (2), 1-10
5. T Lee, Y Kim, J Lee, **S Hong**, 2021. "A Study on Productivity Evaluation and Replacement Analysis in Order Picking with Person-Following Picking Carts," *Korean Journal of Logistics*, 29(3), 69-78

6. J Lee, Y Kim, T Lee, **S Hong**, 2020. "A Simulation-based Comparison of Operational Policies in an Order Picking System with Person-Following Picking Carts," *Korea Logistics Review*, 30 (1), 1-12
7. T Lee, Y Kim, J Lee, **S Hong**, 2020. "A Simulation-based Analysis of a Digital Assorting System with Person-following Robotic Carts," *Korean Journal of Logistics*, 28(1), 47-58
8. J Lee, J Kim, Y Kim, **S Hong**, 2018. "A Simulation-based Performance Analysis of a Digital Assorting System," *Korea Logistics Review*, 28 (5), 65-77
9. B Kim, J Kim, HY Fibrianto, **S Hong**, 2018. "A remarshalling buffer location model in a rail-based container terminal," *Korean Journal of Logistics*, 26(3), 77-92
10. J Kim, NT Mo, HY Fibrianto, Y Kim, **S Hong**, 2018. "Order batching algorithms for a narrow-aisle order picking system with two depots," *Journal of the Korean Society of Supply Chain Management*, 18 (2), 37-50
11. J Lee, JH Kim, HY Fibrianto, KH Kim, **S Hong**, 2018. "An integrated assignment and configuration model for configurable flat-glass racks in the construction industry," *Journal of the Korean Society of Supply Chain Management*, 18(2), 1-12
12. G Kwon, **S Hong**, KH Kim, 2016. "Designing transport racks for flat glass products in a construction industry," *Journal of Korean Institute of Industrial Engineers*, 42(4), 270-279
13. K Seo, M Joh, Y Choi, **S Hong**, and B Oh, 2003. "Analysis of turbo pump liquid propulsion system for a space launch vehicle", *Journal of Korea Aerospace Research Institute: Aerospace Engineering and Technology*, 2(1), 151-157
14. **S Hong**, H Cho, and M Jung, 1999. "Development of heterarchical shop-floor control system execution module using E-Net", *Journal of Korean Institute of Industrial Engineers*, 25(1), 87-99

#### Peer-reviewed conference articles and Book chapters

1. B Kang, Permata, J Park, **S Hong**, 2022. "Yard Template Planning in a Transshipment Hub using Gaussian Process Regressor," *Proceedings of the 2022 Winter Simulation Conference*, Singapore, Singapore
2. J Park, HY Fibrianto, **S Hong**, 2022. "Order Batching and sequencing in a sequential zone order picking system with consideration of workload balance," *Proceedings of the IISE Annual Conference & Expo 2022*, Seattle, USA
3. B Kim, HY Fibrianto, **S Hong**, 2019. "The effect on a handshake operation between twin overhead shuttle cranes under demand uncertainty", *Proceedings of International Conference on Computers and Industrial Engineering*, 1496-1505.
4. J Lee, Y Kim, **S Hong**, 2019. "Modelling a batch assorting operation for an autonomous cart in a parallel-aisle order assorting system", *IEEE International Conference on Automation Science and Engineering*, 60-65.
5. **S Hong**, AL Johnson, and BA Peters, 2014. "Order batching with time constraints in a parallel-aisle warehouse: A multiple-policy approach," *Progress in Material Handling Research*, book chapter, Material Handling Industry of America
6. **S Hong**, AL Johnson, and BA Peters, 2010. "Analysis of picker blocking in narrow-aisle batch picking", *Progress in Material Handling Research*, Material Handling Industry of America, 366-378, book chapter

#### PRESENTATIONS

1. H Fibrianto, B Kang, B Kim, A Marbarch, T Buer, H.-D. Haasis, **S Hong**, KH Kim, 2020, "A simulation study of a storage policy for a container terminal," International Conference on Dynamics in Logistics (LDIC), 2020, February 12-14, 2019, The University of Bremen, Bremen, Germany
2. B Kim, H Fibrianto, **S Hong**, 2019, "The effect on a handshake operation between twin overhead shuttle cranes under demand uncertainty," 49th International Conference on Computers & Industrial Engineering, October 18-21, 2019, Beihang university, Beijing, China
3. J Lee, Y Kim, **S Hong**, 2019, "Modelling a batch assorting operation for an autonomous cart in a parallel-aisle order assorting system," IEEE 15th International Conference on Automation Science and Engineering (CASE), August 22-26, 2019, Vancouver, BC, Canada
4. H Fibrianto, B Kang, **S Hong**, K Kim, A Marbach, H Hassis, T Buer, 2019, "A Simulation Study of Storage Policies in Container Terminal with a Case Study: Busan Port Terminal", 9th International Conference on Logistics and Maritime, National University of Singapore, Singapore, Singapore
5. A Marbach, H Hassis, H Fibrianto, **S Hong**, T Buer, 2019, "Yard Crane Deployment based on Workload Estimation", 9th International Conference on Logistics and Maritime, National University of Singapore, Singapore, Singapore

6. P Joatiko, J Kim, T Lee, **S Hong**, 2019, “Dynamic Storage Location Assignment in a Distribution Center”, The 4th International Conference of Supply Chain and Technology Innovation, August 12-15, 2019, Kyungsoong university, Busan, Korea
7. B Kim, T Lee, M Park, H Lee, **S Hong**, 2018, “A Handshake Policy Between Twin Over-head Shuttle Cranes in a Rail-based Container Terminal”, 8th International Conference on Logistics and Maritime Systems, Sun Yat-sen University, Guangzhou, China
8. H Fibrianto, P Joatiko, D Lee, H Lee, **S Hong**, 2018, “Job Sequencing of twin overhead shuttle cranes in a rail-based automated container terminal”, 8th International Conference on Logistics and Maritime Systems, Sun Yat-sen University, Guangzhou, China
9. J Lee, Y Kim, **S Hong**, 2018, “A simulation study of the digital assorting system in a retailer’s distribution center”, 49th Annual Meeting of the Decision Sciences Institute, Chicago, Illinois, USA
10. H Fibrianto, B Kim and **S Hong**, 2017. “Developing an order batching procedure in bucket brigade order picking system with on-line order arrivals”, Asia Pacific Industrial Engineering and Management Systems Conference, Yogyakarta, Indonesia, Dec 3-6.
11. J Kim, J Lee, and **S Hong**, 2017. “A storage location assignment procedure for a progressive zone picking system with passing”, East Asia Workshop on Industrial Engineering, Yokohama, Japan, Nov 2-3.
12. J Kim and **S Hong**, 2017. “A storage relocation policy for a progressive zone picking system and its simulation analysis”, International Conference on Logistics and Maritime Systems, Bergen, Norway, Aug 23-26
13. B Nam, J Kim and **S Hong**, 2016. “A Study on Pick-Face Blocking Delay between two Pickers in a Wide-Aisle Circular Passage System”, International Conference on Logistics and Maritime Systems, Sydney, Australia, June 20-23
14. J Kim, TM Nguyen and **S Hong**, 2016. “A Study on an Order Batching Model Considering the Depot Selection”, International Conference on Logistics and Maritime Systems, Sydney, Australia, June 20-23
15. TM Nguyen, J Kim, N Kim, and **S Hong**, 2015. “A large-scale parallel-aisle order-picking model for a joint order batching and policy selecting problem”, Asia Pacific Industrial Engineering and Management Systems Conference, Ho Chi Minh City, Vietnam, Dec 8-12.
16. B Nam, J Kim, N Kim, and **S Hong**, 2015. “A Discrete Time Markov Chain model of two-worker blocking in a wide aisle circular-passage system and its simulation study”, East Asia Workshop on Industrial Engineering, Seoul, South Korea, Nov 6-7.
17. SD Cahyo, J Kim, KH Kim, and **S Hong**, 2015. “Dispatching Rules and Dwelling Strategies for Overhead Shuttles in an Automated Container Terminal”, East Asia Workshop on Industrial Engineering, Seoul, South Korea, Nov 6-7.
18. IS, **S Hong**, KH Kim, 2015. “Flexible Loading Sequencing in Container Terminals”, International Conference on Logistics and Maritime Systems, Hong Kong, China, Aug 27-29
19. KJ Kwon, KH Kim, **S Hong**, 2015. “Designing Racks for Handling Flat Glass Products for Construction Industries”, International Conference on Logistics and Maritime Systems, Hong Kong, China, Aug 27-29
20. **S Hong**, 2014. “Order Batching with Time Constraints in a Parallel-aisle Warehouse: A Multiple-policy Approach”, INFORMS Annual Meeting, San Francisco, USA, Nov 9-12
21. **S Hong**, Andrew L. Johnson, and Brett A. Peters, 2014. “Order batching in a bucket brigade order picking system with consideration of picker blocking”, International Conference on Logistics and Maritime Systems, Rotterdam, The Netherlands, Aug 27-29
22. **S Hong**, AL Johnson (Speaker), and BA Peters, 2012. “Batch picking in narrow-aisle order picking systems with consideration for picker blocking”, IIE Annual Conference and Expo, Orlando, USA, May 19-23
23. **S Hong** (Speaker), AL Johnson, and BA Peters, 2010. “Analysis of picker blocking in a bucket brigade order picking system”, INFORMS Annual Meeting, Austin, USA, Nov 7-10
24. **S Hong** (Speaker), AL Johnson, and BA Peters, 2009. “A large-scale batch order-picking model and procedure with traversal routing methods”, INFORMS Annual Meeting, San Diego, USA, Oct 11-14
25. **S Hong** (Speaker) and BA Peters, 2007. “Order batching and vehicle selection in a parallel-aisle Warehouse with Time-Constraints”, INFORMS Annual Meeting 2007, Seattle, USA, Nov 4-7

## PROJECTS

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1. A self-balancing twin-mobility and its optimization for smart logistics and facilities (2020.3~2025.02, Korea Research Foundation, Ministry of Science and ICT, PI)
2. High-speed material handling simulation for conveyor assorting systems (2019.06~ 2019.12, Korea Railroad Research Institute, PI)
3. Motion-data based line-balancing analysis and its simulation (2019.07~ 2019.12, Hyundai Construction Equipment Ltd., PI)

4. Simulation-based Evaluation of order picking and sorting systems with autonomous cart systems (2018.04~2018.11, Korea Railroad Research Institute, PI)
5. Policy-based Terminal Operations Planning (PTOP) (2017.08~2020.07, Korea Research Foundation, Ministry of Science, ICT and Future Planning, PI)
6. An augmented self-organizing operations management for logistics systems (2017.06~2020.05, Korea Research Foundation, Ministry of Education, PI)
7. Simulation and optimization of a truck loading operation with standardized mobile racks (2014.6~2017.6, Korea Railroad Research Institute & Korea Maritime Institute, Co-PI)
8. A self-organizing logistics management in a smart logistics system (2014.11~2017.04, Korea Research Foundation, Ministry of Education, PI)
9. Simulation-based online evaluation engine for container terminal operating system (2014.11~2016.10, Korea-German Project, Korea Institute for Advancement of Technology, PI)
10. Technological Development of Low-carbon Automated Container Terminals (2014.6 - 2017.2, Korea Maritime Institute, Co-PI)

## PROFESSIONAL AFFILIATIONS AND ACTIVITIES

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### Journal Editor

<i>Journal of Industrial and Production Engineering</i>	2018 ~
<i>Journal of Society of Korea Industrial and Systems Engineering</i>	2019 ~
<i>Journal of Logistics Science and Technology</i>	2019 ~

### Journal Reviewer

<i>International Journal of Production Economics</i>	2012 ~
<i>International Journal of Production Research</i>	2013 ~
<i>IIE Transactions</i>	2015 ~
<i>European Journal of Operational Research</i>	2015 ~
<i>Simulation Modelling Practice and Theory</i>	2019 ~
<i>Production Planning &amp; Control</i>	2019 ~

### Member of

Korean Institute of Industrial Engineers	2013~
Korean Society of Supply Chain Management	2016~
Korea Logistics Society	2018~
Society of Korea Industrial and Systems Engineering	2019 ~
Society of Logistics Science and Technology	2019 ~

## HONORS AND AWARDS

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### Best research award of academic research programs (학술연구지원사업 우수성과 41 선), 2018

Minister of Education Award (부총리 겸 교육부 장관 표창), National Research Foundation of Korea (NRF), "A self-organizing logistics management in a smart logistics system (2014.11~2017.04)."

**MHIA order fulfillment council scholarship**, Material Handling Education Foundation (MHEFI), USA, 2008-2009

**St. Onge honor scholarship**, Material Handling Education Foundation (MHEFI), USA, 2007-2008

**Material handling equipment distributors association honor scholarship**, Material Handling Education Foundation (MHEFI), USA, 2006-2007

## STUDENT ADVISES

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### Master students

1. G Han, 2022. A Study on Lot Dispatching Rules in a Semiconductor FAB
2. S Kim, 2020. A Study on the Impact of Storage Policy on the Inbound and Outbound Logistics
3. P Joatiko, 2020. A Data-driven based Yard Template Planning in a Transshipment Hub
4. Taehoon Lee, 2019. Zone Planning in a Large-sized Warehouse with Parallel aisles
5. Ho-young Roh, 2019. A Study on the Schedule Management of Steel Processes Using BIM 4D Simulation
6. Nguyen Thuy Mo, 2019. Large-scale Parallel-aisle Order Batching for Multiple Inspection and Packing Stations
7. Jeongman Lee, 2019. Order Assortment with Autonomous Carts in a Parallel-aisle Warehouse
8. Bosung Kim, 2019. A Study on a Handshake Location Determination Model for Twin Overhead Shuttle Cranes
9. Henokh Yernias Fibrianto, 2018. Order binning and batching in a parallel aisle order picking system
10. Jeonghwan Kim, 2018. A storage location assignment policy for a zone order picking system under demand fluctuation

11. Boa Nam, 2017. Analysis of Picker Blocking Delay in a Wide-aisle Circular Passage System
12. Sofyan Dwi Cahyo, 2016. Analysis of System Throughput in a Zone Picking System Impact by Picker Shortage Delay of Replenishment Process