CURRICULUM VITAE

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KIM, Hyeon-Il (김현일), Ph.D. Candidate

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Personal Information

Date of Birth: March 25, 1995
Place of Birth: Busan, REPUBLIC of KOREA
Nationality: REPUBLIC of KOREA (ROK)
Marital Status: Married
Languages: Korean and English

Educational Background

2014.03 – 2020.02 **B.S.** in **Industrial and Management Engineering**, **Kyungsung University**, Busan, Republic of Korea (Advisor: Prof. Chang-Seong Ko)
GPA: 4.44/4.5 (Summa Cum Laude)

2020.03 – 2022.02 **M.S.** in **Industrial Engineering**, **Hanyang University,** Seoul, Republic of Korea (Advisor: Prof. Dong-Ho Lee)
GPA: 4.44/4.5

2022.03 – 2026.08 **Ph.D.** in **Industrial Engineering**, **Hanyang University,** Seoul, Republic of Korea (Advisor: Prof. Dong-Ho Lee)
GPA: 4.0/4.5

Work Experiences

2020.03 – 2021.08 **Scholarship Assistant,** Department of Industrial Engineering, Hanyang University, Seoul, Republic of Korea

2023.03 – 2023.08 **Scholarship Assistant,** Department of Industrial Engineering, Hanyang University, Seoul, Republic of Korea

2023.09 – 2024.08 **Teaching Instructor,** Department of Industrial Engineering, Hanyang University, Seoul, Republic of Korea

Undergraduate
- INE2009 Linear Programming (2023F)
- INE3081 Operations Management (2024S)

Graduate

- INE9065 Production Planning and Control (2024S)

Scientific and Professional Associations

2016.03 – 2017.12 **Member,** Future Industrial Engineering Leaders and Dreamers (FIELD), Korean Institute of Industrial Engineers (대한산업공학회)

- 2016.03 – 2016.12 Division of competition (학술교류부서)
- 2017.03 – 2017.12 Division of competition (학술교류부서)

Research Interests

Design and Operation of Manufacturing and Material Handling/Storage Systems

Production planning and scheduling, Inventory management, Process planning, etc.

Environmentally Conscious Design & Manufacturing (ECD&M)

Disassembly process planning and scheduling, Planning and scheduling in remanufacturing systems, Design for environment, etc.

Forward and Reverse Logistics

Supply chain management, Network design (Facility location), Vehicle routing and scheduling, etc.

Industrial Applications

Reconfigurable manufacturing systems, Flexible manufacturing systems, Semiconductor manufacturing systems, Automatic guided vehicle Systems, etc.

Applications of Optimization Methodologies

Mathematical Programming (LP, IP, NLP), Interpretable Artificial Intelligence, Reinforcement Learning, Meta-Heuristics, etc.

Applications of Operations Research

Students Directed

PHILOSOPHY OF DOCTORS – Industrial Engineering ()

MASTERS – Industrial Engineering (12 co-worked)

2027

Min-Seo Lee (이민서, co-worked at Hanyang University) MS in Industrial Engineering (Thesis: TBD)

Hyun-A Shim (심현아, co-worked at Hanyang University) MS in Industrial Engineering (Thesis: TBD)

2026

Jun-Yeong Lee (이준영, co-worked at Hanyang University) MS in Industrial Engineering (Thesis: Iterative Algorithms for Configuration Selection and Scheduling of Reconfigurable Multi-part Flow Lines with Controllable Processing Times)

Hyeon-Ji Moon (문현지, co-worked at Hanyang University) MS in Industrial Engineering (Thesis: Dynamic Configuration Selection Algorithms for Reconfigurable Single-part Flow Lines with Controllable Processing Times)

2025

Chenghan Bai (백정한, co-worked at Hanyang University) MS in Industrial Engineering (Thesis: A Genetic Programming based Scheduling Approach for Remanufacturing Systems with Flow-shop-type Disassembly, Reprocessing and Reassembly Lines)

Keon-Min Lee (이건민, co-worked at Hanyang University) MS in Industrial Engineering (Thesis: Disassembly Leveling and Lot-sizing for End-of-life Products with Uncertain Component Yields)

2024

Ae-Jin Youn (윤애진, co-worked at Hanyang University) MS in Industrial Engineering (Thesis: System-level Configuration Optimization Algorithms for Reconfigurable Single Part Flow Lines with Controllable Processing Times)

2023

Yeo-Reum Kim (김여름, co-worked at Hanyang University) MS in Industrial Engineering (Thesis: A Genetic Programming based Deep Reinforcement Learning Approach for Dynamic Hybrid Flow Shop Scheduling with Reworks under General Queue Time Limits)

Hyun-Bum Jung (정현범, co-worked at Hanyang University) MS in Industrial Engineering (Thesis: Team Orienteering with Possible Multiple Visits: A Mathematical Model and Solution Algorithms)

Xuebin Li (이학빈, co-worked at Hanyang University) MS in Industrial Engineering (Thesis: Capacity Scalability Planning Algorithms for Job-shop-type Reconfigurable Manufacturing Systems with Dynamic Demands)

2021

Yun-Hyok Choi (최윤혁, co-worked at Hanyang University) MS in Industrial Engineering (Thesis: Disassembly Leveling and Lot-sizing for Multiple Product Types with Uncertain Component Demands)

2019

Yooney Cho (조윤희, co-worked at Hanyang University) MS in Industrial Engineering (Thesis: Mathematical Model and Solution Approaches for Multi-stage Hybrid Flow Shop Scheduling with Reworks under General Queue Time Limits)

RESEAERCH WORKS

Dissertations

M.S. Dissertation

Scheduling Algorithms for Multi-Stage Flow Shops with Reworks under Overlapped Queue Time Limits, Hanyang University, 2022. (Advisor: Prof. Dong-Ho Lee)

Ph.D. Dissertation

Static and Dynamic Scheduling for Hybrid Flow Shops with Reworks under Overlapped Queue Time Limits, Hanyang University, 2026. (Advisor: Prof. Dong-Ho Lee)

Projects

In Progress

- **An Education and Research Team for Sharing and Cooperation based Smart Systems**, 2020.09 -

2023.08, Ministry of Education. (교육부 4 단계 두뇌한국 21 (BK FOUR) 사업 교육 연구팀 – 참여)

- **System-level Configuration Optimization Algorithms for Reconfigurable Single Part Flow Lines with Controllable Processing Times**, 2025.08 - 2026.05, Ministry of Education. Hanyang University. (한양대학교 산업과학연구소 연구지원사업 – 실무책임)

- **Finished**

- **Hybrid Flow Shop Scheduling with Reworks under Overlapped Queue Time Limits: Mathematical Models and Predictive/Reactive Algorithms,** 2022.06 - 2025.02, National Research Foundation of Korea (NRF). (한국연구재단 이공학 개인기초연구지원 사업 – 실무책임)
- **Development of an AI-based Production Planning Technology for Reconfigurable Manufacturing Systems,** 2022.04 - 2024.12, Ministry of Science and ICT. (과학기술정보 통신부, 정보통신·방송 기술개발사업: 스마트공장혁신기술개발 – 세부과제 실무책임)
- **Consulting Mathematical Optimization Algorithms**, 2023.04 - 2024.03, LG-CNS. (산업체 과제 – 실무책임)
- **Collaboration-Based Network Design for Flexible Delivery Service**, 2021.06 - 2024.02, National Research Foundation of Korea (NRF). (한국연구재단 이공학 개인기초연구지원 사업 – 실무책임)
- **Priority Scheduling for Flexible Machining Systems with Multiple Setup Stations and Multi-Fixturing Pallets,** 2023.07 – 2024.02, Hanyang University. (한양대학교 산업과학연구소 연구지원사업 – 실무책임)
- **Development of Forecasting, Production Planning and Scheduling Algorithms and Framework for APS (Advanced Planning and Scheduling) System**, 2021.12 - 2022.11, Youngsin Metal Industrial Co., Ltd. (산업체 과제 – 실무책임)
- **Consulting Mathematical Optimization Algorithms**, 2021.11 - 2022.10, LG-CNS: Entrue Consulting. (산업체 과제 – 실무책임)
- **Design and Development of Senior Friendly Products Improving the Cognitive Abilities by using Musical Recall**, 2018.01 - 2018.12, Ministry of Trade, Industry & Energy (산업통상자원부 한국산업기술평가관리원 – 실무책임)

Publications

Working

Conferences

Submitted

Being prepared

Journals

Submitted

1. **Kim, H.-I.**, Lee, J.-Y., Moon, H.-J., and Lee, D.-H., Configuration Selection Algorithms for Reconfigurable Multi-part Flow Lines with Non-identical Machines at Each Stage and Operation Lot Splitting, Under review, *International Journal of Production Research* **– SCIE**
2. **Kim, H.-I.**, and Lee, D.-H., A Genetic Programming based Variable Neighborhood Search Algorithm for Hybrid Flow Shop Scheduling with Reworks under Overlapped Queue Time Limits, Under review, *International Journal of Production Economics* **– SCIE**

Being prepared

1. **Kim, H.-I.**, and Lee, D.-H., Digital Twin-driven Multi-objective Dynamic Hybrid Flow Shop Scheduling with Reworks under Overlapped Queue Time Limits. **– SCIE**
2. Bai C., **Kim H.-I**., and Lee, D.-H., A Genetic Programming based Scheduling Approach for Remanufacturing Systems with Flow-shop-type Disassembly, Reprocessing and Reassembly Shops. **– SCIE**
3. Lee, K.-M., **Kim, H.-I.**, Kang, J.-H., and Lee, D.-H., Disassembly Leveling and Lot-sizing for Uncertain Disassembly Operations: Solution Algorithms and a Case Study on Electric Vehicle Battery. **– SCIE**
4. Lee, J.-Y., **Kim, H.-I.**, and Lee, D.-H., An Iterative Approach for Configuration Selection and Scheduling of Reconfigurable Multi-part Flow Lines with Controllable Processing Times. **– SCIE**
5. Moon, H.-J., **Kim, H.-I.**, and Lee, D.-H., Dynamic Configuration Selection for Reconfigurable Single-part Flow Lines with Controllable Processing Times. **– SCIE**

Published (28 citations)

[h-index: 3 / i10-index: 1]

International Journals

2026

1. **Kim, H.-I.**, and Lee, D.-H., 2026, Two-phase Optimal and Heuristic Algorithms for Flow Shop Scheduling with Reworks under Overlapped Queue Time Limits

2025

1. **Kim, H.-I.**, Kim, Y.-R., and Lee, D.-H., 2025, A Genetic Programming based Reinforcement Learning Algorithm for Dynamic Hybrid Flow Shop Scheduling with Reworks under General Queue Time Limits, *Computers & Industrial Engineering*, Vol. 203, 111062. **– SCIE** (2025.05)
2. **Kim, H.-I.**, Youn, A.-J., and Lee, D.-H., 2025, A Mathematical Model and Solution Algorithms for Optimizing System-level Configurations of Reconfigurable Single Part Flow Lines, *International Journal of Production Research*, Vol. 63, No. 1, pp. 9-25. **– SCIE** (2025.01)

2024

1. Cho, Y., **Kim, H.-I.**, Kim, Y.-R., Yoo, S-K., Kim, B.-H., and Lee, D.-H., 2024, A Scheduling Mechanism for Hybrid Flow Shops with Reworks under General Queue Time Limits, *Proceedings of the Institution of Mechanical Engineers Part B: Journal of Engineering Manufacture*, Vol. 238, No. 6-7, pp. 962-970. **– SCIE** (2024.05)
2. Jung, H., **Kim, H.-I.**, and Lee, D.-H., 2024, Team Orienteering with Possible Multiple Visits: Mathematical Model and Solution Algorithms, *Computers & Industrial Engineering*, Vol. 190, 110097. **– SCIE** (2024.04)

2023

1. Choi, Y.-H., **Kim, H.-I.**, and Lee, D.-H., 2023, Disassembly Leveling and Lot-sizing for Multiple Product Types with Uncertain Component Demands, *Proceedings of the Institution of Mechanical Engineers Part B*: *Journal of Engineering Manufacture*, Vol. 237, No. 11, pp. 1660-1670. **– SCIE** (2023.11)
2. **Kim, H.-I.**, and Lee, D.-H., 2023, Scheduling Algorithms for Multi-stage Flow Shops with Reworks under Overlapped Queue Time Limits, *International Journal of Production Research,* Vol. 61, No.

20, pp. 6908-6922. **– SCIE** (2023.08)

Domestic Journals

2024

1. Li, X., **Kim, H.-I.**, and Lee, D.-H., 2024, Capacity Scalability Planning Algorithms for Job-shop-type Reconfigurable Manufacturing Systems with Dynamic Demands, *Journal of the Korean Institute of Industrial Engineers* (대한산업공학회지), 50(3) 2024: 157-172. – **KCI** (2024.06)
2. Sim, D.-G., Choi, H., **Kim, H.-I.**, Youn, A.-J., and Lee, D.-H., 2024, Priority Scheduling for Flexible Machining Systems with Multiple Setup Stations and Multi-fixturing Pallets, Journal of the Research Institute of Industrial Science (산업과학연구소 논문집)

International Conferences

2025

1. Bai, C., **Kim, H.-I.**, and Lee, D.-H., 2025, A Multi-tree Genetic Programming Algorithm for Scheduling Remanufacturing Systems with Disassembly, Reprocessing and Reassembly Lines, *Proceedings of the Asia Pacific Industrial Engineering and Management Systems Conference*, Hangzhou, China. (2025.11)
2. Moon, H.-J., **Kim, H.-I.**, and Lee, D.-H., 2025, Dynamic Configuration Selection for Non-decreasing demands in Reconfigurable Single-part Flow Lines with Controllable Processing Times, *Proceedings of the Asia Pacific Industrial Engineering and Management Systems Conference*, Hangzhou, China. (2025.11)

2024

1. **Kim, H.-I.**, and Lee, D.-H., 2024, Two-phase Variable Neighborhood Search Algorithms for Multi-stage Flow Shop Scheduling with Reworks under Overlapped Queue Time Limits, *Proceedings of the Asia Pacific Industrial Engineering and Management Systems Conference*, Chiang Mai, Thailand. (2024.11)
2. Lee, J.-Y., **Kim, H.-I.,** Choi, Y.-H., and Lee, D.-H., 2024, Hybrid Flow Shop Scheduling with Eligible Unrelated Parallel Machines and Controllable Processing Times, *Proceedings of the Asia Pacific Industrial Engineering and Management Systems Conference*, Chiang Mai, Thailand. (2024.11)

2023

1. Sim, D.-G., **Kim, H.-I**., Youn, A.-J., and Lee, D.-H., 2023, Operations Scheduling for Flexible Manufacturing Systems with Multiple Setup Stations and Multi-fixturing Pallets, *Proceedings of the International Conference on Sustainable Energy and Green Technology (SEGT 2023),* Ho Chi Minh City, Vietnam. (2023.12)
2. **Kim, H.-I.**, and Lee, D.-H., 2023, Variable Neighborhood Search Algorithms for Flow Shop Scheduling with Reworks under Overlapped Queue Time Limits: Minimizing Total Tardiness, Proceedings of the 17th International Congress on Logistics and SCM Systems (ICLS 2023), Seoul, Korea. (2023.08) – **Best Presentation Award**
3. **Kim, H.-I.**, Youn A.-J., Lee, S.-H., and Lee, D.-H., 2023, Variable Neighborhood Search Algorithms for System-level Configuration Selection in Reconfigurable Single Part Flow Lines, *Proceedings of the 27th International Conference on Production Research (ICPR 2023),* Cluj-Napoca, Romania. (2023.07)
4. **Kim, H.-I.**, and Lee, D.-H., 2023, A Two-level Optimal Algorithm for Three-machine Flow Shop Scheduling with Reworks under Overlapped Queue Time Limits, *Proceedings of the 27th International Conference on Production Research (ICPR 2023),* Cluj-Napoca, Romania**.**

(2023.07)

2022

1. Li, X., **Kim, H.-I.**, and Lee, D.-H., 2022, Multi-period Capacity Scalability Planning Algorithms for Job-shop-type Reconfigurable Manufacturing Systems with Increasing Demands, *Proceedings of the Asia Pacific Industrial Engineering and Management Systems Conference (APIEMS 2022)*, Taichung, Taiwan. (2022.11)

Domestic Conferences

2025

1. Lee, K.-M., **Kim, H.-I.**, Kang, J.-H., and Lee, D.-H., 2025, An Optimal Sample Average Approximation Algorithm for Disassembly Leveling and Lot-sizing for a Single Product Type with Uncertain Component Yields, *Proceedings of the Fall KIIE Conference*, KAIST, Daejeon, South Korea. (2025.11)
2. Lee, J.-Y., **Kim, H.-I.**, and Lee, D.-H., 2025, A Configuration Selection and Scheduling Algorithm for Reconfigurable Multi-part Flow Lines with Controllable Processing Times, *Proceedings of the Fall KIIE Conference*, KAIST, Daejeon, South Korea. (2025.11)
3. **Kim, H.-I.**, and Lee, D.-H., 2025, A Genetic Programming based Variable Neighborhood Search Algorithm for Hybrid Flow Shop Scheduling with Reworks under Overlapped Queue Time Limits, *Proceedings of the Spring KIIE/KORMS/KSS Joint Conference*, Jeju, South Korea. (2025.06)
4. **Kim, H.-I.**, Lee, K.-M., and Lee, D.-H., 2025, System Configuration Selection Algorithms for Reconfigurable Multi-part Flow Lines with Non-identical Parallel Machine Workstations, *Proceedings of the Spring KIIE/KORMS/KSS Joint Conference*, Jeju, South Korea. (2025.06)

2024

1. **Kim, H.-I.**, and Lee, D.-H., 2024, Genetic Programming based Scheduling for Hybrid Flow Shops with Reworks under Overlapped Queue Time Limits, *Proceedings of the Fall KIIE Conference*, Seoul, South Korea. (2024.10)
2. **Kim, H.-I.**, and Lee, D.-H., 2024, A Branch and Bound Algorithm for Three-stage Flow Shop Scheduling with Reworks under Overlapped Queue Time Limits, *Proceedings of the Spring KIIE/KORMS/KSS Joint Conference*, Yeosu, South Korea. (2024.05)
3. Youn, A.-J., **Kim, H.-I.**, and Lee, D.-H., 2024, System-level Configuration Optimization for Reconfigurable Single Part Flow Lines with Controllable Processing Times, *Proceedings of the Spring KIIE/KORMS/KSS Joint Conference*, Yeosu, South Korea. (2024.05)

2023

1. **Kim, H.-I.**, Youn, A.-J., Lee, K.-M., and Lee, D.-H., 2023, System-level Configuration Selection Algorithms for Reconfigurable Single Part Flow Lines, *Proceedings of the Fall KIIE Conference*, UNIST, Ulsan, South Korea. (2023.11)
2. Li, X., **Kim, H.-I.**, Lee, S.-H., and Lee, D.-H., 2023, Dynamic Capacity Scalability Algorithms for Job-shop-type Reconfigurable Manufacturing Systems, *Proceedings of the Spring KIIE/KORMS Joint Conference*, Jeju, Korea. (2023.06)
3. Kim, Y.-R., **Kim, H.-I.**, and Lee, D.-H., 2023, A Deep Reinforcement Learning based Scheduling Approach for Hybrid Flow Shops with Reworks under Queue Time Limits, *Proceedings of the Spring KIIE/KORMS Joint Conference,* Jeju, Korea. (2023.06)

2022

1. Kim, Y.-R., **Kim, H.-I.**, and Lee, D.-H., 2022, A Genetic Programming Approach for Hybrid Flow Shop Scheduling with Reworks under Queue Lime Limits, *Proceedings of the Fall KIIE Conference*, Incheon National University, Incheon. (2022.11)

2. Jung, H., **Kim, H.-I.**, and Lee, D.-H., 2022, Iterated local search algorithms for team orienteering problem with possible multiple visits, *Proceedings of the Fall KIIE Conference*, Incheon National University, Incheon. (2022.11)
3. Sim, D.-G., **Kim, H.-I.**, Kim, G., Choi, J., and Lee, D.-H., 2022, A Case Study on Production Planning for a Bolt Manufacturing System, *Proceedings of the Fall KIIE Conference*, Incheon National University, Incheon. (2022.11)
4. **Kim, H.-I.**, and Lee, D.-H., 2022, Variable Neighborhood Search Algorithms for Flow Shop Scheduling with Reworks under Overlapped Queue Time Limits, *Proceedings of the Spring KIIE/KORMS Joint Conference*, Jeju, Korea. (2022.06)

2021

1. Heo, S.-S., Sim, D.-G., **Kim, H.-I.**, and Lee, D.-H., 2021, A Random Forest based Scheduling Approach for a Flexible Manufacturing System with Multi-fixturing Pallets, *Proceedings of the Fall KIIE Conference*, Dongguk University, Seoul. (2021.11)
2. **Kim, H.-I.**, Kim, Y.-R., Li, X., and Lee, D.-H.,2021, Mathematical Model and Simple Heuristic for Flow Shop Scheduling with Overlapped Queue Time Limits and Reworks, *Proceedings of the Spring KIIE/KORMS Joint Conference*, Seogwipo, Jeju. (2021.06)