

# CURRICULUM VITAE

April 2024

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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:** Not Married  
**Languages:** Korean and English

## Educational Background

2014.3 – 2020.2 **B.S. in Industrial and Management Engineering, Kyungsung University**, Busan, Republic of Korea (Advisor: Prof. Chang-Seong Ko), Summa Cum Laude  
2020.3 – 2022.2 **M.S. in Industrial Engineering, Hanyang University**, Seoul, Republic of Korea (Advisor: Prof. Dong-Ho Lee)  
2022.3 – Present **Ph.D. in Industrial Engineering, Hanyang University**, Seoul, Republic of Korea (Advisor: Prof. Dong-Ho Lee)

## Work Experiences

2023.9 – 2024.8 **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

- 2016.3 – 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

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### **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**

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 (10 co-worked)**

#### **2026**

**Jun-Yeong Lee (이준영, co-worked at Hanyang University)** MS in Industrial Engineering (Thesis: )

**Hyeon-Ji Moon (문현지, co-worked at Hanyang University)** MS in Industrial Engineering (Thesis: )

#### **2025**

**Keon-Min Lee (이건민, co-worked at Hanyang University)** MS in Industrial Engineering (Thesis: )

**Chenghan Bai (백정환, co-worked at Hanyang University)** MS in Industrial Engineering (Thesis: )

#### **2024**

**Ae-Jin Youn (윤애진, co-worked at Hanyang University)** MS in Industrial Engineering (Thesis: )

#### **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 (최윤희, 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)

## RESEARCH 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

### Projects

#### In Progress

- **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)
- **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)

#### Finished

- **Consulting Mathematical Optimization Algorithms**, 2023.04 - 2024.03, LG-CNS. (산업체 과제 - 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: Entru Consulting. (산업체 과제 - 실무책임)

## Publications

### Working

#### Journals

##### Submitted

1. **Kim, H.-I.**, Kim, Y.-R., and Lee, D.-H., 2023, A Genetic Programming based Deep Reinforcement Learning Approach for Dynamic Hybrid Flow Shop Scheduling with Reworks under General Queue Time Limits, *Computers & Industrial Engineering*. – **SCIE (Under review)**

##### Being prepared

1. **Kim, H.-I.**, and Lee, D.-H., 2024, Two-phase Solution Algorithms for Flow Shop Scheduling with Reworks under Overlapped Queue Time Limits.
2. **Kim, H.-I.**, and Lee, D.-H., 2024, Scheduling Algorithms for Hybrid Flow Shop Scheduling with Reworks under Overlapped Queue Time Limits: Minimizing Total Tardiness.
3. **Kim, H.-I.**, and Lee, D.-H., 2025, Multi-objective Scheduling Algorithms for Dynamic Hybrid Flow Shop Scheduling with Reworks under Overlapped Queue Time Limits.
4. Youn, A.-J., **Kim, H.-I.**, and Lee, D.-H., 2024, System-level Configuration Selection Algorithms for Reconfigurable Single Part Flow Lines with Controllable Processing Times.

## Published (5 citations)

[h-index: 2 / i10-index: 0]

#### International Journals

##### 2024

1. **Kim, H.-I.**, Youn, A.-J., and Lee, D.-H., 2024, A Mathematical Model and Solution Algorithms for Optimizing System-level Configurations of Reconfigurable Single Part Flow Lines, to appear in *International Journal of Production Research*, Accepted. – **SCIE**
2. Cho, Y., **Kim, H.-I.**, Kim, Y.-R., Yoo, S.-K., Kim, B.-H., and Lee, D.-H., 2024, A Scheduling Mechanisms for Hybrid Flow Shops with Reworks under General Queue Time Limits, *Proceedings of the Institution of Mechanical Engineers Part B: Journal of Engineering Manufacture*, pp. 1-9. – **SCIE**
3. Jung, H., **Kim, H.-I.**, and Lee, D.-H., 2024, Team Orienteering with Possible Multiple Visits: Mathematical Model and Solution Algorithms, *Computers & Industrial Engineering*, 2024: 110097. – **SCIE**

##### 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. 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)
2. Li, X., **Kim, H.-I.**, and Lee, D.-H., 2024, Capacity Scalability Planning Algorithms for Job-shop-type Reconfigurable Manufacturing Systems with Dynamic Demands, to appear in *Journal of the Korean Institute of Industrial Engineers* (대한산업공학회지). – KCI

## International Conferences

### 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 (ICLS2023)*, 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 (ICPR2023)*, 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 (ICPR2023)*, Cluj-Napoca, Romania. (2023.07)

### 2022

5. 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*, Taichung, Taiwan. (2022.11)

## Domestic Conferences

### 2024

1. **Kim, H.-I.**, and Lee, D.-H., 2023, A Branch and Bound Algorithm for Three-stage Flow Shop Scheduling with Reworks under Overlapped Queue Time Limits, *Proceedings of the Spring KIIIE/KORMS/KSS Joint Conference*, Yeosu, South Korea. (2024.05)

### 2023

2. **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 KIIIE Conference*, UNIST, Ulsan, South Korea. (2023.11)
3. 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 KIIIE/KORMS Joint Conference*, Jeju, Korea. (2023.06)

4. 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 KIIIE/KORMS Joint Conference*, Jeju, Korea. (2023.06)

## 2022

5. Kim, Y.-R., **Kim, H.-I.**, and Lee, D.-H., 2022, A Genetic Programming Approach for Hybrid Flow Shop Scheduling with Reworks under Queue Time Limits, *Proceedings of the Fall KIIIE Conference*, Incheon National University, Incheon. (2022.11)
6. 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 KIIIE Conference*, Incheon National University, Incheon. (2022.11)
7. 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 KIIIE Conference*, Incheon National University, Incheon. (2022.11)
8. **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 KIIIE/KORMS Joint Conference*, Jeju, Korea. (2022.06)

## 2021

9. 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 KIIIE Conference*, Dongguk University, Seoul. (2021.11)
10. **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 KIIIE/KORMS Joint Conference*, Seogwipo, Jeju. (2021.06)