Seong-Hyeon Ju

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EDUCATION

Mar. 2020 ~ Feb. 2024	Hanyang University ERICA Major: B.S. in Industrial & Management Engineering GPA(Major) : 3.68 / 4.5 Bachelor's degree	Ansan, Korea
Mar. 2024 ~ Feb. 2029 (Expected)	Hanyang University Industrial & Management Engineering Next Simulation Lab. Advisor: Kyung-min Seo Combined M.S./Ph.D. in Industrial & Management Engineering GPA : 4.00 / 4.5	Seoul, Korea

RESEARCH INTEREST

- Simulation-based Optimization
- System Integration
- AI-based Simulation
- Deep Reinforcement Learning
- AMR(Autonomous mobile robot) Path Planning
- Cyber-Physical System
- System Integration

PUBLICATIONS (SCIE)

1. Chan-Woo Kim, Seong-Hyeon Ju, Kyung-Min Seo, "Discrete-event simulation framework for composite warfare analysis of next-generation ship", *IEEE Access*, 2025 (UNDER REVIEW).
2. Seung-Wan Cho, Yeong-Hyun Lim, Seong-Hyeon Ju, Kyung-Min Seo, "Analyzing new operation strategy of demand-responsive transport using discrete-event simulation framework", *Systems*, 2025
3. Jin-Hyeon Sung, Seong-Hyeon Ju, Seung-Wan Cho, Kyung-Min Seo, Bong-Gu Kang "Modeling and exploratory analysis of discrete event simulation for optimizing overhead hoist transport system and logistics in semiconductor manufacturing", *Mathematics*, 2025
4. Ji-Min Woo, Seong-Hyeon Ju, Jin-Hyeon Sung, Kyung-Min Seo " Meta-Learning-Based LSTM-Autoencoder for Few-Shot Anomaly Detection in Retrofitted CNC Machines via Multi-Machine Tasks", *Systems*, 2025 (Under Review).

PUBLICATIONS (KCI)

1. Sung, J. H., Ju, S. H., Kang, B. G., & Seo, K. M. (2024). *Simulation study for verifying combined operation*

of manned and unmanned systems in indoor fire response. Journal of the Korea Society for Simulation, 33(3), 37–50. (Original work published in Korean)

CONFERENCES

1. Sung, J. H., Ju, S. H., & Seo, K. M. Agent-based simulation study for scenario analysis of indoor disaster response using combined manned-unmanned systems. Proceedings of the Fall Conference of the Korea Society for Simulation, 55–58, Cheongju, Korea (November, 2023) – Oral.
2. Ju, S. H., Kim, C. W., & Seo, K. M. "DEVS Simulation Development for Performance Analysis of Bearing-Only TMA Algorithm", Proceedings of the Fall Conference of the Acoustical Society of Korea Conference, pp. 316-317, Busan, Korea (Oct. 2024) – Oral.
3. Lim, Y. H., Cho, S. W., Ju S. H., & Seo, K. M., "Implementation of DEVS-based Simulation Model
4. for Analyzing Demand Responsive Transit Operations", Proceedings of the Spring Conference of the Journal of The Korean Society Automotive Engineers, pp. 1075, Geoje, Korea (Aug. 2024) – Oral.
5. Ju, S. H., Park, H. S., & Seo, K. M., Kang, B. G. "Interoperable Middleware Development for Real-Time Data Exchange Among Federated Digital Twins", Proceedings of the Winter Conference of the Korea Society for Computer-Aided Design, Engineering and Manufacturing, pp. 42, Pyeongchang, Korea (Feb. 2025) – Poster.

AWARDS AND HONORS

- President's Award, The 21st Korea Undergraduate Computer Simulation Competition, The Korea Society for Simulation, Korea (June. 2023).
- Golden Award, Industrial AI Hackathon, Hanyang University Industrial AI Center, Korea (Aug. 2024)Encouragement Award, 2023 Fall Conference of the Korea Society for Simulation, Korea (Dec. 2023)
- Excellence Award, FactoryHack on Industrial AI, Hanyang University Industrial AI Center, Korea (Aug. 2025)

PROJECTS

- Advancement of Testbed Environment Based on Digital Twin, KITECH (Korea Institute of Industrial Technology), Korea (Aug. 2024 – Dec. 2024).
- Industrial AI Talent Development Program, KIAT (Korea Institute for Advancement of Technology), Korea (Mar. 2024 – Present).
- Future Technology-Adaptive Specialized Research Center for Integrated Underwater Surveillance, KRIT (Aug. 2023 ~ present).
- Demonstration of Digital Retrofit Technology through Advanced Control Systems for Aged Manufacturing Equipment, KITECH (Korea Institute of Industrial Technology), Korea (Dec. 2024 – Present).
- Real-time Order-Responsive Routing Optimization, CJ Logistics TES (Technology Engineering System & Solution), Korea (June, 2023 ~ Sep 2023).
- Analysis of Logistics Transfer Time Requirements and Strategy Development for Combat Readiness of Military Units, The Korea Society of Simulation, Korea (Dec. 2022 ~ June. 2023).

SKILLS AND TECHNIQUES

- Python
- Unity
- ROS

SIMULATION SKILLS

- Simio
- AnyLogic
- DEVS(Discrete Event System Specification