Yongkuk Jeong, PhD

Assistant Professor in Sustainable Production Logistics
Department of Production Engineering, KTH Royal Institute of Technology
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Work Experience

KTH Royal Institute of Technology, Sweden — Jan 2021 – Present
Department of Production Engineering, Assistant Professor

KTH Royal Institute of Technology, Sweden — Jan 2019 – Jan 2021
Department of Sustainable Production Development, Postdoc

Inha Technical College, South Korea — Mar 2018 – Dec 2018
Department of Naval Architecture and Marine Engineering, Lecturer

Seoul National University, South Korea — Mar 2018 – Jan 2019
Research Institute of Marine Systems Engineering, Postdoc

Education

Seoul National University, South Korea — Sep 2011 – Feb 2018
Doctor of Philosophy in Naval Architecture and Ocean Engineering
- *Thesis title: A shipyard logistics simulation system considering shipbuilding process, spatial arrangement, and logistics flow*

Seoul National University, South Korea — Mar 2007 – Feb 2011
Bachelor of Science in Naval Architecture and Ocean Engineering
- Graduated as valedictorian in the program

Selected Publications

[1] Enabling Industrial Internet of Things-based Digital Servitization in Smart Production Logistics.
- Erik Flores-García, *Yongkuk Jeong*, Sichao Liu, Magnus Wiktorsson, and Lihui Wang (2022).
- International Journal of Production Research, 61(12).

[2] Spatial Arrangement using Deep Reinforcement Learning to Minimise Rearrangement in Ship Block Stockyards.
- Byeongseop Kim, *Yongkuk Jeong*, and Jong Gye Shin (2020).
- International Journal of Production Research, 58(16).

[3] A Spatial Layout Optimization Program considering the Survivability of a Naval Vessel in the Early Design Stage.
- *Yong-Kuk Jeong*, Youngmin Kim, Su Heon Ju, Jong-Gye Shin, Jong-Choel Kim, and Jong Hun Woo (2019).
- Journal of Ship Production and Design, 35(2).

[4] An Analysis of Shipyard Spatial Arrangement Planning Problem and a Spatial Arrangement Algorithm considering Free Space and Unplaced Block.
- *Yong-Kuk Jeong*, SuHeon Ju, Huiqiang Shen, Dong Kun Lee, Jong Gye Shin, and Cheolho Ryu (2018).
- International Journal of Advanced Manufacturing Technology, 95.

[5] Shipyard Block Logistics Simulation Using Process-centric Discrete Event Simulation Method.
- *Yong-Kuk Jeong*, Philippe Lee, and Jong Hun Woo (2018)
- Journal of Ship Production and Design, 34(2).

More publications are available in Google Scholar profile (link) and my personal website (link)

Selected Research Projects

SHIFT-DT Jan 2024 – Dec 2025

Sustainable, Holistic, Integrated Framework for Ship Design and Production Transformation through Digital Twins
- Funded by Digital Futures (Swedish Funding Agency)
- Leading the project as a Principal Investigator (PI) to establish a framework that can marry holistic ship design with digitalized ship production and logistics through digital twins

Dynamic SALSA Apr 2023 – Mar 2026

Dynamic scheduling of assembly and logistics system using AI
- Funded by Eureka SMART and Vinnova (Swedish Innovation Agency)
- Building a computer vision-based platform for analyzing human operators and objects in a production logistics environment

TIMEBLY Nov 2021 – Oct 2024

Time data management automation for manual assembly
- Funded by Vinnova
- Leading the human pose estimation and time series prediction analysis for manual assembly tasks using open-source libraries

DYNASTEEL Mar 2022 – Dec 2022

Dynamic scheduling and transport visibility in steel production
- Funded by Vinnova
- Involved in human-centered system design process for autonomous transportation system including requirements analysis and prototyping

C-PALS May 2019 – Aug 2022

Cyber-physical assembly and logistics system
- Funded by Eureka SMART and Vinnova
- Built a digital twin and real-time production logistics data visualization platform using open-source libraries

HUPMOBILE Jan 2019 – Dec 2021

Holistic urban and per-urban mobility
- Funded by Interreg Baltic Sea Region (EU)
- Involved in participatory modelling and simulation process for urban mobility simulation with multiple stakeholders

Simulation system for manufacturing strategy and execution to quantify ship production cost Oct 2016 – Jan 2019
- Funded by National IT Industry Promotion Agency of Korea
- Developed and implied a simulation-based monitoring system for ship production process

Simulation-based production planning and management system for middle-sized shipbuilding companies Oct 2014 – Jan 2019

- Funded by Ministry of Trade, Industry, and Energy of Korea
- Developed and implied an advanced planning and control system for ship production process

Advanced Naval Vessel Research Laboratory Sep 2012 – Dec 2017
- Funded by Ministry of National Defense of Korea
- Developed an optimization algorithm for spatial layout design of naval vessels considering the survivability

Teaching Experience

KTH ML2302: Modelling, Simulation and Optimization of Sustainable Production 2020 – Present
Course responsible and teacher

KTH ML2303: Digitalisation for Sustainable Production 2020 – Present
Course responsible and teacher

KTH ML2307: Theory of Science and Research Methodology in Sustainable Production Development 2022 – Present
Course responsible and teacher

KTH ML2305: Production Logistics and Supply Chains 2022 – Present
Teacher

KTH ML2308: CDIO course in Sustainable Production Development 2020 – Present
Guest lecture in visualization and communication

KTH ML230X: Degree Project in Sustainable Production Development, Second Cycle 2020 – Present
Supervisor

KTH ML1503: Industrial Systems II 2020 – Present
Guest lecture in Industry 4.0

KTH ML1505: Industrial Systems III 2020 – Present
Guest lecture in Operator and Industry 4.0

Ingenjör4.0 - Upskilling for future manufacturing 2023 – Present
Course responsible for Autonomous Robots and Cyber-Physical Systems

EIT Urban Mobility Lifelong Learning in New Trends on Urban Mobility 2022
Teacher

InhaTech: Ship Production Design 2018
Course responsible and teacher

InhaTech: Introduction of Ship Production Engineering 2018
Course responsible and teacher

SNU: Introduction to Production Automation 2011 – 2015
Teaching assistant

SNU: Introduction of Ship Production System 2011 –2015
Teaching assistant

Skills

- **Project management**: led and successfully delivered various research and development projects

- **Programming skills**: C#, Python, JavaScript, Java, SQL, HTML, and UML
- **Language**: English (fluent), Korean (fluent), Swedish (working knowledge)

Other

- **Winner of the Elmer L. Hann Award** for best paper on Ship Production delivered at a Society of Naval Architects and Marine Engineers (SNAME) event in 2019 for the paper "Model-based Computational Shipyard Dynamics and its Applications"
- **Reviewed papers** for various journals and conferences including:
  - International Journal of Computer Integrated Manufacturing (IJCIM)
  - International Journal of Production Research (IJPR)
  - Ships and Offshore Structures
  - Automation in Construction
  - Journal of Engineering for the Maritime Environment (JEME)
  - International Journal of Naval Architecture and Ocean Engineering (IJNAOE)
  - Journal of Ship Production and Design (JSPD)
  - International Journal of Precision Engineering and Manufacturing-Green Technology (IJPEM-GT)
  - IFIP International Conference on Advances in Production Management Systems (APMS)
  - Winter Simulation Conference (WSC)
  - European Operations Management Association (EurOMA) annual conference
- **Editorial board member** in
  - International Journal of Sustainable Engineering
  - International Journal of Precision Engineering and Manufacturing – Smart Technology
- **Member** of EurOMA and **life member** of the Society of Naval Architects of Korea