Curriculum Vitae

Yongkuk Jeong

Date of Birth. 7 June 1989
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Address. KTH SE-151 81
Södertälje, Sweden

Employment

January 2021 - now	**Department of Production Engineering,** **KTH Royal Institute of Technology**, Södertälje, Sweden
	· Assistant Professor
January 2019 - January 2021	**Department of Sustainable Production Development,** **KTH Royal Institute of Technology**, Södertälje, Sweden
	· Postdoc
March 2018 - January 2019	**Research Institute of Marine Systems Engineering,** **Seoul National University**, Seoul, South Korea
	· Postdoctoral Researcher

Education

September 2011 - February 2018	**Seoul National University**, Seoul, South Korea
	· Ph.D. in Engineering (Major: Naval Architecture and Ocean Engineering)
	· Thesis: A Shipyard logistics simulation system considering shipbuilding process, spatial arrangement, and logistics flow
	· Advisor: Prof. Jong Gye Shin
March 2007 - February 2011	**Seoul National University**, Seoul, South Korea
	· B.S. degree (Major: Naval Architecture and Ocean Engineering, Department of Naval Architecture and Ocean Engineering)

Teaching Experience

March 2022 - June 2022	**Department of Sustainable Production Development,** **KTH Royal Institute of Technology**, Södertälje, Sweden
	Course Responsible & Teacher (ML2303 Digitalisation in Sustainable

	Production)
January 2022 - March 2022	**Department of Sustainable Production Development, KTH Royal Institute of Technology**, Södertälje, Sweden Course Responsible & Teacher (ML2302 Modelling, Simulation and Optimization of Sustainable Production)
March 2021 - June 2021	**Department of Sustainable Production Development, KTH Royal Institute of Technology**, Södertälje, Sweden Course Responsible & Teacher (ML2303 Digitalisation in Sustainable Production)
January 2021 - March 2021	**Department of Sustainable Production Development, KTH Royal Institute of Technology**, Södertälje, Sweden Course Responsible & Teacher (ML2302 Modelling, Simulation and Optimization of Sustainable Production)
March 2020 - June 2020	**Department of Sustainable Production Development, KTH Royal Institute of Technology**, Södertälje, Sweden Teacher (ML2303 Digitalisation in Sustainable Production)
January 2020 - March 2020	**Department of Sustainable Production Development, KTH Royal Institute of Technology**, Södertälje, Sweden Teacher (ML2302 Modelling, Simulation and Optimization of Sustainable Production)
August 2018 - December 2018	**Department of Naval Architecture and Ocean Engineering, Inha Technical College**, Incheon, South Korea Lecturer (Ship production design)
March 2018 - January 2018	**Department of Naval Architecture and Ocean Engineering, Inha Technical College**, Incheon, South Korea Lecturer (Introduction to ship production engineering)

Research Interests

Research Areas	Digitalization in production logistics Manufacturing simulation Discrete event system simulation Industry 5.0

Research Papers (♦: Ph.D. Dissertation Essays)

- **Yongkuk Jeong*** (2023), Digitalization in Production Logistics: How AI, Digital Twins, and Simulation Are Driving the Shift from Model-based to Data-driven Approaches, *International Journal of Precision Engineering and Manufacturing-Smart Technology*, 1(2), pp. 187-200. (*Corresponding Author)

- Erik Flores-García, **Yongkuk Jeong**, Sichao Liu, Magnus Wiktorsson, and Lihui Wang (2023), Enabling Industrial Internet of Things-based Digital Servitization in Smart Production Logistics, *International Journal of Production Research*, 61(12), pp. 3884-3909.

- Jannicke Baalsrud Hauge, Seyoum Eshetu Birkie, and **Yongkuk Jeong*** (2021), Developing a holistic decision support framework: From production logistics to sustainable freight transport in an urban environment, *Transportation Research Interdisciplinary Perspectives*, 12. (*Corresponding Author)

- Jannicke Baalsrud Hauge, Masoud Zafarzadeh, **Yongkuk Jeong***, Yi Li, Wajid Ali Khilji, Christian Larsen, and Magnus Wiktorsson (2021), Digital twin testbed and practical applications in production logistics with real-time location data, *International Journal of Industrial Engineering and Management*, 12(2), pp. 1-12. (*Corresponding Author)

- Jong Hun Woo, Haoyu Zhu, Dong Kun Lee, Hyun Chung, and **Yongkuk Jeong***, (2021), Assessment Framework of Smart Shipyard Maturity Level via Data Envelopment Analysis, *Sustainability*, 13(4). (*Corresponding Author)

- Huiqiang Shen, Yonggil Lee, **Yongkuk Jeong**, and Jong Hun Woo, (2020), Analysis on Hull Block Erection Process Considering Variability, *Journal of Ship Production and Design*, Available Online.

- Byeongseop Kim, **Yongkuk Jeong*** and Jong Gye Shin, (2020), Spatial Arrangement using Deep Reinforcement Learning to Minimize Rearrangement in Block Stockyards and Unnecessary Transporter Movement in Block Stockyards, *International Journal of Production Research*, 58(16), pp. 5062-5076. (*Corresponding Author)

- Jong Gye Shin, Youngmin Kim, **Yong-Kuk Jeong**, Jong Hun Woo and Cheolho Ryu, (2020), Model-based Computational Shipyard Dynamics and its Applications, *Journal of Ship Production and Design*, 36(1), pp. 87-95.

- Suheon Ju, Saenal Sung, Huiqiang Shen, **Yong-Kuk Jeong** and Jong Gye Shin, (2020), Process Design and System Development for Establishing Shipyard Mid-term Production Plans using Backward Process-centric Simulation, *International Journal of Naval Architecture and Ocean Engineering*, 12, pp. 20-37.

- Masoud Zafarzadeh, Magnus Wiktorsson, Jannicke Baalsrud Hauge and **Yongkuk Jeong**, (2019), Data-Driven Production Logistics – An Industrial Case Study on Potential and Challenges, *Smart and Sustainable Manufacturing Systems*, 3(1), pp. 53-78.

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

126-138.

- Jong Moo Lee, **Yong-Kuk Jeong**, and Jong Hun Woo, (2018), Development of an Evaluation Framework of Production Planning for the Shipbuilding Industry, ***International Journal of Computer Integrated Manufacturing,*** 31(9), pp. 831-847.

- Youngmin Kim, Jong Hun Woo, **Yong-Kuk Jeong**, Jong-Gye Shin, (2018), Computational Shipyard Dynamics, ***Journal of Ship Production and Design***, 34(4), pp. 355-367.

- **Yong-Kuk Jeong***, SuHeon Ju, Huiqiang Shen, Dong Kun Lee, Jong Gye Shin, Cheolho Ryu, (2018b), An analysis of shipyard spatial arrangement planning problem and a spatial arrangement algorithm considering free space and unplaced block, ***International Journal of Advanced Manufacturing Technology***, 95, pp. 4307-4325. (*Corresponding Author)

- **Yong-Kuk Jeong**, Philippe Lee, and Jong Hun Woo, (2018a), Shipyard Block Logistics Simulation Using Process-centric Discrete Event Simulation Method, ***Journal of Ship Production and Design***, 34(2), pp. 168-179.

- Jong Hun Woo, Youngmin Kim, **Yong-Kuk Jeong**, and Jong-Gye Shin, (2017), A Research on Simulation Framework for the Advancement of Supplying Management Competency, ***Journal of Ship Production and Design***, 33(1), pp. 60-79.

- SeungHoon Nam, Dong Kun Lee, **Yong-Kuk Jeong**, Philippe Lee, and Jong-Gye Shin, (2016), Environmental Impact Assessment of Composite Small Craft Manufacturing Using the Work Breakdown Structure, ***International Journal of Precision Engineering and Manufacturing–Green Technology***, 3(3), pp. 261-272.

- Dong Kun Lee, **Yong-Kuk Jeong**, Jong Gye Shin, and Dae-Kyun Oh, (2014b), Optimized Design of Electric Propulsion System for Small Crafts using the Differential Evolution Algorithm, ***International Journal of Precision Engineering and Manufacturing-Green Technology***, 1(3), pp. 229-240.

- Dong Kun Lee, Jong Gye Shin, Youngmin Kim, and **Yong Kuk Jeong**, (2014a), Simulation-based Work Plan Verification in Shipyards, ***Journal of Ship Production and Design***, 30(2), pp. 49-57.

Conference Proceedings (the name of the presenter is underlined)

- **Yongkuk Jeong** and Jannicke Baalsrud Hauge (2023), Digitalization in production logistics towards Industry 5.0: Anaylsis of industrial project cases, **ISL 2023**, Enschede, Netherlands, 9-12 July, 2023

- **Yongkuk Jeong**, Tarun Kumar Agrawal, and Kiwook Jung (2023), Digital servitization in battery reuse and recycling business based on blockchain platform technologies, **EurOMA 2023**, Leuven, Belgium, 3-5 July, 2023

- Amita Singh, Erik Flores Garcia, **Yongkuk Jeong**, Magnus Wiktorsson (2022), A Rubric for Implementing Explainable AI in Production Logistics, **APMS 2022**, Gyeongju, South Korea, 25-29 September, 2022

- **Yongkuk Jeong**, Erik Flores-García, Dong Hoon Kwak, Jong Hun Woo, Magnus Wiktorsson, Sichao Liu, Xi Vincent Wang, and Lihui Wang (2022), Digital Twin-Based Services and Data Visualization of Material Handling Equipment in Smart Production Logistics Environment, **APMS 2022**, Gyeongju, South Korea, 25-29 September, 2022

- Erik Flores-García, **Yongkuk Jeong**, Magnus Wiktorsson, Dong Hoon Kwak, Jong Hun Woo, Thomas Schmitt, and Lars Hanson (2022), Characterizing Digital Dashboards for Smart Production Logistics, **APMS 2022**, Gyeongju, South Korea, 25-29 September, 2022

- Jannicke Baalsrud Hauge and **Yongkuk Jeong** (2022), A step-by-step guideline to overcome challenges modelling urban logistics scenarios using SUMO, **ISL 2022**, Cork, Ireland, 10-13 July, 2022

- **Yongkuk Jeong** and Erik Flores-García (2022), Cyber-Physical system as a service for the manufacturing industry - collaboration work between Sweden and South Korea, **The Swedish Manufacturing R&D Clusters' Annual Conference**, Katrineholm, Sweden, 18-19 May, 2022

- **Yongkuk Jeong**, Gianpiero Canessa, Erik Flores-García, Tarun Kumar Agrawal, and Magnus Wiktorsson (2022), An optimization model with stochastic variables for flexible production logistics planning, **SPS 2022**, Skövde, Sweden, 26-29 April, 2022

- Erik Flores-García, Maheshwaran Gopalakrishnan, **Yongkuk Jeong** and Magnus Wiktorsson (2022), IIoT-enabled Digital Services for Maintenance Planning in Smart Production Logistics using Maintenance Opportunity Window, **SPS 2022**, Skövde, Sweden, 26-29 April, 2022

- Erik Flores-García, **Yongkuk Jeong**, Magnus Wiktorsson, Sichao Liu, Lihui Wang, and GooYoung Kim (2021), Digital twin-based services for smart production logistics, **WSC 2021**, Phoenix, AZ, USA, 13-15 December, 2021.

- **Yongkuk Jeong**, Tarun Kumar Agrawal, Erik Flores-García and Magnus Wiktorsson (2021), A reinforcement learning model for material handling task assignment and route planning in dynamic production logistics environment, **CIRP CMS 2021**, Online, 22-24 September, 2021.

- Erik Flores-García, **Yongkuk Jeong**, and Magnus Wiktorsson (2021), Applying Machine Learning for Adaptive Scheduling and Execution of Material Handling in Smart Production Logistics, **APMS 2021**, Nates, France (Online), 5-9 September, 2021.

- Amita Singh, **Yongkuk Jeong**, Jannicke Baalsrud Hauge, and Seyoum Eshetu Birkie (2021), Urban production logistics planning considering environmental sustainability perspectives: Turku city case, *ISL 2021*, Online, 12-13 July, 2021.

- Erik Flores-García, **Yongkuk Jeong**, and Magnus Wiktorsson (2021), Exploring the challenges for generating, handling, and using real-time location information in Smart

Production Logistics, ***EurOMA 2021***, Online, 5-7 July, 2021.

- **Yongkuk Jeong**, Erik Flores-García, and Magnus Wiktorsson (2020), A Design of Digital Twins for Supporting Decision-making in Production Logistics, ***WSC 2020***, Orlando, Florida, USA, 14-18 December, 2020. (Online conference)

- **Yongkuk Jeong** (2020), Digitalization and Digital Twin Applications in Production Logistics for Sustainable Production Development, ***PRESM 2020***, Seoul, South Korea, 15-18 November, 2020. (Online conference)

- **Yongkuk Jeong**, Magnus Wiktorsson, and Peter Almström (2020), Towards automatic validation of operation times in manual processes: Two industrial cases, ***PLAN Conference 2020***, Södertälje, Sweden, 21 October, 2020. (Online conference)

- Erik Flores-García, **Yongkuk Jeong**, Sichao Liu, Goo-Young Kim, and Magnus Wiktorsson (2020), Digital Twin-based Services for Future Production Logistics Settings, ***PLAN Conference 2020***, Södertälje, Sweden, 21 October, 2020. (Online conference)

- Ravi Kalaiarasan, Magnus Wiktorsson, Jan Olhager, and **Yongkuk Jeong** (2020), Production Logistics Visibility – definitions, status and research agenda, ***SPS 2020***, Jönköping, Sweden, 7-8 October, 2020. (Online conference)

- **Yongkuk Jeong**, Amita Singh, Masoud Zafarzadeh, Magnus Wiktorsson, and Jannicke Baalsrud Hauge (2020), Data-driven manufacturing simulation: Towards a CPS-based approach, ***SPS 2020***, Jönköping, Sweden, 7-8 October, 2020. (Online conference)

- Erik Flores-García and **Yongkuk Jeong** (2020), Cyber Physical Assembly and Logistics, ***The Swedish Manufacturing R&D Clusters' Annual Conference***, Katrineholm, Sweden, 30 September - 1 October, 2020. (Online conference)

- Jannicke Baalsrud Hauge, Masoud Zafarzadeh, **Yongkuk Jeong**, Yi Li, Wajid Ali Khilji, and Magnus Wiktorsson, (2020), Digital and Physical Testbed for Production Logistics Operations, ***APMS 2020***, Novi Sad, Serbia, 30 August – 3 September, 2020. (Online conference)

- Jo Wessel Strandhagen, **Yongkuk Jeong**, Jong Hun Woo, Marco Semini, Magnus Wiktorsson, Jan Ola Strandhagen, and Erlend Alfnes, (2020), Factors Affecting Shipyard Operations and Logistics: A Framework and Comparison of Shipbuilding Approaches, ***APMS 2020***, Novi Sad, Serbia, 30 August – 3 September, 2020. (Online conference)

- Jannicke Baalsrud Hauge, Masoud Zafarzadeh, **Yongkuk Jeong**, Yi, Li, Wajid Ali Khilji, and Magnus Wiktorsson, (2020), Employing digital twins within production logistics, ***2020 IEEE ICE/ITMC***, Cardiff, United Kingdom, 15-17 June, 2020. (Online conference)

- Jong Gye Shin, Youngmin Kim, Jong Hun Woo, Seunghyeok Son, Huiqiang Shen, Byeong-seop Kim, Cheolho Ryu, and **Yong-Kuk Jeong**, (2019), Smart Shipyard Platform with Computational Shipyard Dynamics and its Application to Forming Shop, ***SNAME Maritime Convention 2019***, Tacoma, WA, 30 October – 1 November, 2019.

- **Yong-Kuk Jeong** and Magnus Wiktorsson, (2019), Process-Centric versus Resource-Centric Modelling: Initial findings and future research directions, *i3CDE 2019*, Penang, Malaysia, 8-10 July, 2019.

- **Yong-Kuk Jeong**, Huiqiang Shen, Youngmin Kim, Young-Ki Min, Jong Gye Shin, Philippe Lee, Jong Hun Woo, Yong Gil Lee, (2019), Discrete Event Simulation for Strategic Shipyard Planning, *COMPIT 2019*, Tullamore, Ireland, 25-27 March, 2019.

- Huiqiang Shen, **Yong-Kuk Jeong**, Jong Gye Shin, Philippe Lee, Jong Hun Woo, Yong Gil Lee, Sang Hun Kim, Ju Hyeon Jeong, (2018), Key Performance Indicators and Analysis Method for Ship Block Logistics Flow in Shipyards, *WSC 2018*, Gothenburg, Sweden, 9-12 December, 2018.

- Jong Gye Shin, Youngmin Kim, **Yong-Kuk Jeong**, Jong Hun Woo, Cheolho Ryu, (2018), Model-based Computational Shipyard Dynamics and its Applications, *SNAME Maritime Convention 2018*, Providence, RI, 24-27 October, 2018.

- Beongseop Kim, **Yong-Kuk Jeong**, Seunghyeok Son, Su Heon Ju, Huiqiang Shen, Jong Gye Shin, (2018), A Shipyard Green Logistics Concept and a Strategic Simulation to Reduce the Transportation Distance of Assembly Blocks in Shipyard, *PRESM 2018*, Sapporo, Japan, 3-7 July, 2018.

- Jong Hun Woo, Jaeho Choi, Ji Hye Kim, **Yong-Kuk Jeong**, Philippe Lee, and Jong Ho Nam, (2018), Machine Learning in Ship Production, *COMPIT 2018*, Pavone, Italy, 14-16 May, 2018.

- **Yong-Kuk Jeong**, Jong Hun Woo, Philippe Lee, Youngmin Kim, Young-Ki Min, Jong Gye Shin, Yong Gil Lee, and Cheolho Ryu, (2018), Shipyard DES Simulation Framework and its Applications, *COMPIT 2018*, Pavone, Italy, 14-16 May, 2018.

- **Yong-Kuk Jeong**, Hui-Qiang Shen, SeungHoon Nam, Youngmin Kim, Jong-Gye Shin, Philippe Lee, Jae Ho Choi, and Jong Hun Woo, (2017), Verification and Validation of Shipyard Logistics Simulation System and Its Use Case Identification, *WSC 2017*, Las Vegas, NV, 3-6 December, 2017.

- Hui-Qiang Shen, **Yong-Kuk Jeong**, Seung-Hoon Nam, Youngmin Kim, Jong-Gye Shin, Dong Kun Lee, and Daekyun Oh, (2017), A Hierarchical Simulation Model for Workload Analysis of Ship Block Erection Process, *WSC 2017*, Las Vegas, NV, 3-6 December, 2017.

- Su Heon Ju, **Yong-Kuk Jeong**, Seunghyeok Son, Young Gi Min, Jong-Gye, Shin, JongChul Kim, Jong Hun Woo, and Philippe Lee, (2017), A layout design framework considering relations between internal space and external shape of naval vessels at the conceptual design, *ISOPE 2017*, San Francisco, CA, June 25−30, 2017.

- **Yong-Kuk Jeong**, Seung Hoon Nam, Youngmin Kim, Jong-Gye Shin, Young-Ki Min, Jong Hun Woo, Jae-Ho Choi, Sang-Hoon Kim, and Dae-Kyun Oh, (2017), A modeling and simulation method for multi-layered supply chain management in shipbuilding industries, *ACM SIGSIM PADS 2017*, NTU Singapore, 24-26 May, 2017.

- Byeongseop Kim, **Yong-Kuk Jeong**, Seunghyeok Son, Philippe Lee, Yonggil Lee, and Jong Hun Woo, (2017), The Extended Process-Centric Modeling Method for Logistics Simulation in Shipyards Considering Stock Areas, ***COMPIT 2017***, Cardiff UK, 15-17 May, 2017.

- **Yong-Kuk Jeong**, Byeong-Seop Kim, Jong-Gye Shin, Philippe Lee, Jong Hun Woo, and Jong Moo Lee, (2016), A Ship Block Logistics Support System based on the Shipyard Simulation Framework, ***WSC 2016***, Arlington VA, 11-14 December, 2016.

- Seung-hyoek Son, Youngmin Kim, Inhyuck Hwang, Hui Giang Shen, **Yong-Kuk Jeong**, Cheolho Ryu, Jong-Gye Shin, (2015), Design and Development of Manufacturing Information Calculation System for Formation of Curved Hull Plates, ***MOTSP 2015***, Brela Croatia, 10-12 June, 2015.

- **Yong-Kuk Jeong**, Philippe Lee, SeungHoon Nam, Dong Kun Lee, Jong-Gye Shin, (2015), Development of the Methodology for Environmental Impact of Composite Boats Manufacturing Process, ***CIRP LCE 2015***, Sydney Australia, 7-9 April, 2015.

- Jong-Gye Shin, Dong Hyun Ahn, Seung Hoon Nam, and **Yong-Kuk Jeong**, (2014), An Introduction to Small boat PLM Technology, ***ICOR 2014***, Fiji, 13-15 October, 2014

- Jong-Gye Shin, Seung Hoon Nam, and **Yong-Kuk JEONG**, (2014), Generic Work Breakdown Structure for Sailing Yacht Lifecycle Management, ***ICOR 2014***, Fiji, 13-15 October, 2014.

Research Projects

May. 2023 - now	**Digital Futures, Sweden** Industry 5.0 research towards a circular economy and community building
Apr. 2023 - now	**Eureka SMART** Dynamic SALSA - Dynamic Scheduling of Assembly and Logistics Systems using AI
Nov. 2021 - now	**Vinnova, Sweden** TIMEBLY – Time Data Management Automation for Manual Assembly
Apr. 2021 - now	**Vinnova, Sweden** EXPLAIN – EXPlainable and Learning production & logistics by Artificial INtelligence
Aug. 2022 -	**Digital Futures, Sweden**

Jun. 2023	Industry 4.0 and beyond – towards Industry 5.0 by driving sustainability through digitalization
Mar. 2022 - Dec. 2022	**Vinnova, Sweden** DYNASTEEL – Dynamic scheduling and transport visibility in steel production
May. 2019 - Aug. 2022	**Eureka SMART** C-PALS – Cyber-Physical Assembly and Logistics System
May. 2019 - Dec. 2021	**Interreg Baltic Sea Region, European Union** HUPMOBILE – Holistic Urban and Peri-urban Mobility
Jan. 2019 - May. 2021	**PRODUKTION2030, Sweden** · DigiLog – Digital and Physical Testbed for Logistics Operation in Production
Jan. 2019 - May. 2021	**PRODUKTION2030, Sweden** · SMART PM - Sustainable Manufacturing by Automated Real-Time Performance Management
Oct. 2016 - Jan. 2019	**National IT Industry Promotion Agency, Republic of Korea** Manufacturing strategy and execution simulation system to quantify shipbuilding manufacturing cost
Oct. 2014 - Jan. 2019	**Ministry of Trade, Industry & Energy, Republic of Korea** · Simulation based production management system for middle-sized shipbuilding companies
Sep. 2012 - Dec. 2017	**Ministry of National Defense, Republic of Korea** · Advanced Naval Vessel Research Laboratory (Study on the spatial layout algorithm considering the survivability of a naval vessel)
Jun. 2016 - Nov. 2016	**Daewoo Shipbuilding & Marine Engineering Co., Ltd. (DSME)** · Development of the spatial block arrangement algorithm
Aug. 2015 -	**Daewoo Shipbuilding & Marine Engineering Co., Ltd. (DSME)**

Nov. 2015	· Study on the simulation framework for digital shipyards
Jun. 2011 - May. 2015	**Ministry of Knowledge Economy, Republic of Korea** · Development of the integrated engineering management system and main parts for 20ft~40ft class sailing yachts

Awards and Honors

Oct 2019	**The Elmer L. Hann Award,** Best Paper on Ship Production Delivered at Ship Production Symposium, SNAME
Mar 2012 - Aug 2013	**STX Foundation**
Nov 2012	**Encouragement Award,** Korean Institute of Industrial Engineers.
Feb 2011	**The Society of Naval Architects of Korea**
Mar 2007 - Feb 2011	**National Scholarship For Science and Engineering,** Korea Student Aid Foundation (KOSAF)

Other Information

Language	· **English:** fluent · **Korean**: native
Technical Skills	· **Simulation Analysis:** AnyLogic, Arena, SUMO, ExtendSim · **Programming Language:** C#, Python, Node-RED, SQL