Curriculum Vitae

# Yongkuk Jeong

**Date of Birth**. 7 June 1989
**Email**. yongkuk@kth.se
**Telephone**. +46 (0)73 940 35 93
**Address**. KTH SE-151 81
Södertälje, Sweden

## Career

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| Jan. 2019 - now | **Department of Sustainable Production Development, KTH Royal Institute of Technology**, Södertälje, Sweden<br>・ Postdoc Researcher |
| Mar. 2018 - Jan. 2019 | **Research Institute of Marine Systems Engineering, Seoul National University (SNU)**, Seoul, Rep. of Korea<br>・ Postdoctoral Associate |

## Teaching Experience

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| Aug. 2018 - Dec. 2018 | **Department of Naval Architecture and Ocean Engineering, Inha Technical College**, Incheon, Rep. of Korea<br>・ Lecturer (Ship production design) |
| Mar. 2018 - Jun. 2018 | **Department of Naval Architecture and Ocean Engineering, Inha Technical College**, Incheon, Rep. of Korea<br>・ Lecturer (Introduction to ship production engineering) |

## Education

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| Sep. 2011 - Feb. 2018 | **Seoul National University (SNU)**, Seoul, Rep. of Korea<br>・ Ph.D. in Engineering (Major: Naval Architecture and Ocean Engineering)<br>・ Adviser: Prof. Jong Gye Shin |
| Mar. 2007 - Feb. 2011 | **Seoul National University (SNU)**, Seoul, Rep. of Korea<br>・ B.S. degree, GPA 3.57/4.30 (Major: Naval Architecture and Ocean Engineering, Department of Naval Architecture and Ocean Engineering) |

# Research Interests

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| Research Areas | Production logistics<br>Manufacturing simulation<br>Ship production system<br>Discrete event system simulation<br>Life cycle assessment<br>Combinatorial optimization algorithm |

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

- HuiQiang Shen, Jong Hun Woo, SuHeon Ju, **Yong-Kuk Jeong**, Dong Kun Lee, Jong Gye Shin, (Submitted), Development of simulation-based planning and scheduling system for middle-sized shipbuilding companies, ***International Journal of Production Research***.

- Byeongseop Kim, **Yong-Kuk Jeong***, Jong Gye Shin, (Submitted), Spatial Arrangement using Deep Reinforcement Learning to Minimize Rearrangement in Block Stockyards and Unnecessary Transporter Movement in Block Stockyards, ***International Journal of Production Research***. (*Corresponding Author)

- Suheon Ju, Saenal Sung, Huiqiang Shen, **Yong-Kuk Jeong**, Jong Gye Shin, (Accepted), 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***.

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

- **Yong-Kuk Jeong**, Youngmin Kim, Su Heon Ju, Jong-Gye Shin, Jong-Choel Kim and Jong Hun Woo, (2018), A Spatial Layout Optimization Program considering the Survivability of a Naval Vessel in the Early Design Stage, ***Journal of Ship Production and Design*** (Published Online).

- 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)

- 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. 2019 - now

**Eureka SMART**

- C-PALS – Cyber-Physical Assembly and Logistics System

May. 2019 - now

**Interreg Baltic Sea Region, European Union**

HUPMOBILE – Holistic Urban and Peri-urban Mobility

Jan. 2019 - now

**PRODUKTION2030, Sweden**

- DigiLog – Digital and Physical Testbed for Logistics Operation in Production

Jan. 2019 - now

**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)

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| Jun. 2016 - Nov. 2016 | **Daewoo Shipbuilding & Marine Engineering Co., Ltd. (DSME)**<br>· Development of the spatial block arrangement algorithm |
| Aug. 2015 - Nov. 2015 | **Daewoo Shipbuilding & Marine Engineering Co., Ltd. (DSME)**<br>· Study on the simulation framework for digital shipyards |
| Jun. 2011 - May. 2015 | **Ministry of Knowledge Economy, Republic of Korea**<br>· Development of the integrated engineering management system and main parts for 20ft~40ft class sailing yachts |

## Course-Work Training (Overall GPA: 3.97/4.30)

- Topics in Ship Production Engineering
- Topics in Ship Structural Design
- Simulation-based Manufacturing Systems
- Systems Engineering Management
- Product Lifecycle on Systems Engineering
- Shipyard Layout Planning and Spatial Planning
- Technology Valuation Assessment
- Integer Programs
- Theory of Scheduling
- Managerial Statistics

## Awards and Honors

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| 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

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| Language | · **Korean**: native language<br>· **English**: intermediate |
| Technical Skills | · **Simulation Analysis:** DELMIA QUEST, AnyLogic, Simio<br>· **Programming Language:** C#, HTML, Python<br>· **Proficient in MS-office:** Word, Excel, PowerPoint |

# References

**Prof. Shin, Jong Gye**
Professor, Seoul National University, Seoul, Rep. of Korea
Email: jgshin@snu.ac.kr
Office: (+82)-2-880-7129
Mobile: (+82)-10-8843-6174

**Prof. Woo, Jong Hun**
Professor, Seoul National University, Seoul, Rep. of Korea
Email: jonghun_woo@kmou.ac.kr
Phone: (+82)-51-410-4304
Mobile: (+82)-10-7288-0630

**Prof. Wiktorsson, Magnus**
Professor, KTH Royal Institute of Technology, Södertälje, Sweden
Email: magwik@kth.se
Phone: +46 (0)8 790 94 28
Mobile: +46 (0)73 276 01 05