**강연자이력서**

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| **A person wearing glasses and a suit  Description automatically generated with medium confidence** |  | 이름 | Seung Ki Moon |
| 소속/직책 | Nanyang Technological University/ Associate Professor |
| 연사 소개 | Dr. Moon is currently an associate professor (tenured) and assistant chair (research) in School of Mechanical and Aerospace Engineering, Nanyang Technological University, Singapore. |

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| **주요학력** |  |  |  |
| 기간 | 학교 |  |  |
| 2008 | Ph.D., Industrial Engineering, The Pennsylvania State University, USA |
| 1995 | M.S., Industrial Engineering, Hanyang University, South Korea |
| 1992 | B.S., Industrial Engineering, Hanyang University, South Korea |

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| **주요경력**  |  |  |  |
| 기간 | 내용 |  |  |
| 11/2020 ~ Present | Assistant Chair (Research), The School of Mechanical and Aerospace Engineering, Nanyang Technological University, Singapore  |
| 9/2019 ~ Present | Associate Professor (tenured), The School of Mechanical and Aerospace Engineering, Nanyang Technological University, Singapore |
| 6/2013 ~6/2014 | Visiting Professor, The Department of Industrial Engineering, Hanyang University, Seoul, Korea  |
| 4/2011 ~ 8/2019 | Assistant Professor, The School of Mechanical and Aerospace Engineering, Nanyang Technological University, Singapore |
| 7/1995 ~ 7/2003 | Senior Research Engineer, Research & Development Center, Hyundai Motor Company, Seoul, Korea |

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| **수상**  |  |  |  |
| 날짜 | 내용 |  |  |
| 8/2020 | ASME Computers and Information in Engineering TC Leadership Award in Technical Areas of Advanced Modeling & Simulation in Discipline of Computer and Information in Engineering |
| 10/2018 | John Cheung Social Media Award 2018, Nanyang Technological University  |
| 11/2017 | Outstanding World Researcher Award, The Korean Federation of Science and Technology Societies (KOFST) |

**강연내용요약**

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| **How modular design can make new market opportunities and support Industry 4.0?****With the vigorous development of global markets and increasing customer demands, companies must respond quickly and take a lead among competitors to reduce costs in productions and supply chains. In general, the trends require a changeable production structure to support a wide range of product categories and logistics.** **Modular design is a dominant mass-customization design approach and impacts production line configuration. One of the critical aspects of the modular design is commonality and standardization that allow to simplify the manufacturing process and reduce the time it took to switch from producing one model to another. Another essential element of the modular design is flexibility that a company can adapt to changing market conditions and customer preferences quickly.** **Industry 4.0 has tremendous potential to improve productivity, efficiency, and overall sustainability in various industries across the globe via development in science and artificial intelligent (AI). The Industry 4.0 concept in the manufacturing sector covers a wide range of applications from product design to manufacturing. In particular, the industries also want to explore new technologies for digital manufacturing using Internet of Things (IoT), AI, and 3DP technologies.** **In this tutorial, I will introduce modular design approaches to support new future market and the emerging key smart technologies involving AI, digital twins, and 3DP to support the customized product development under Industry 4.0. Also, I will discuss how the modular design approaches and the technologies can contribute to develop smart products and operate the smart factory with industrial cases. Future research directions in the modular design and digital manufacturing technologies and limitations encountered in existing researches will also be discussed.** |