**Make it Smarter via Deep Learning**

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**Abstract**

Deep learning, regarded as one of the breakthrough technologies in machine learning in recent years, has attracted tremendous research attention in both academic and industrial communities. It involves learning good representations of data through multiple levels of abstraction, and can discover complicated underlying structure and features, thus achieving an improved predictive performance. As a result, mechanical engineers also start to apply deep learning technologies to their own research fields. In this seminar, I will first introduce mechatronics at the undergraduate level as the maker movement. Then, this talk contributes to demonstrating successful case studies of manufacturing systems with deep learning (CNN, RNN, and Autoencoder) applied. A special focus is on product quality inspection and fault diagnosis in manufacturing. Ultimately I hope this talk can stimulate more research interests towards deep learning within our mechanical engineering discipline.

**Bio**

Seungchul Lee is an assistant professor at the school of Mechanical, Aerospace, and Nuclear Engineering at UNIST, Korea. His research focuses on industrial AI for smart manufacturing. He extends his research work to developing self-sustainable engineering systems via an immune, informatics, IoT design, etc. He received the B.S. (2001) and Ph.D. (2010) in Mechanical Engineering from Seoul National University, Korea, and from the University of Michigan, USA, respectively.