NATIONAL UNIVERSITY OF SINGAPORE

School of Computing

I S   S E M I N A R

Title: **Understanding the technological evolution of high-tech firms by text mining**

Speaker: Dr Min Song, Underwood Distinguished Professor, Yonsei University

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Chaired by: Dr Oh Hyelim, Assistant Professor, School of Computing
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ABSTRACT:

In the digital era, technological landscapes are changing more rapidly than ever before. Recent IS research shows that industry intelligence using unstructured text data in real-time basis has a significant business value for predicting and understanding technological change. However, the extant methodology is limited to a static analysis, while the role of market dynamics has been emphasized in technological innovation literature. In this research-in-progress, we propose a novel two-layered topic modeling approach for industry intelligence to better capture the evolutionary nature of technology markets. In the macro-level analysis, our approach extends the current latent Dirichlet allocation technique, a most widely used topic model, by incorporating a time-series analysis per company into topic modeling. In the micro-level analysis, the model implements a semantic representation of the topical trends using word2vec, a state-of-the-art deep learning technique. The application to the high-tech industry demonstrates that our model identifies and visualizes the trajectories of the dominant technology market players' technological innovation.

BIODATA:

Min Song is the Underwood Distinguished Professor in the Department of Library and Information Science and the director of Text and Social Media Mining Lab at Yonsei University. He has published more than 200 international conference and journal papers. Min has research interests in Biomedical Text Mining, Social Media Data Mining, and Big Data Analytics. Prior to Yonsei, Min was the tenured Associate Professor of Information Systems Department at New Jersey Institute of Technology. He received his PhD in Information Systems from Drexel University, an MS from Indiana University and a BA from Yonsei University in Korea. He is an editorial board member of Scientometrics and Journal of Informetrics, and he also serves as an associate editor of Frontiers in Research Metrics and Analytics.