

專 題 演 講

講 者：呂昌田教授（維吉尼亞理工大學）(Virginia Tech)

題 目：Spatiotemporal Event Forecasting in Social Media

大 綱：

Social media has become a popular data source as a surrogate for monitoring and detecting events. Analyzing social media (e.g., tweets) to reveal event information requires sophisticated techniques. Tweets are written in unstructured language and often contain typos, non-standard acronyms, and spam. In addition to the textual content, Twitter data form a heterogeneous information network where users, tweets, and hashtags have mutual relationships. These features pose technical challenges for designing event detection and forecasting methods. In this talk, I will present the design and implementation of a fully automated forecasting system for significant societal events using open-source data including tweets, blog posts, and news articles. I will describe the system architecture, individual models that leverage specific data sources, and a fusion engine that supports the trade-off between specific evaluation criteria. I will also demonstrate its superiority and capability to forecast significant societal happenings.

簡 歷：

Chang-Tien Lu is a Professor and National Capital Region Program Director in the Department of Computer Science, Curriculum Lead in the Innovation Campus, and Associate Director of the Sanghani Center for AI and Data Analytics at Virginia Tech. He received his Ph.D. from the University of Minnesota, Twin Cities, in 2001. Dr. Lu currently serves as Associate Editor of the ACM Transactions on Spatial Algorithms and Systems, Data & Knowledge Engineering, IEEE Transactions on Big Data, and GeoInformatica. He has regularly served on the organizing and program committees of conferences, including as Program Chair of the 18th IEEE International Conference on Tools with Artificial Intelligence in 2006 and General Chair of the 17th ACM SIGSPATIAL International Conference on Advances in Geographic Information Systems in 2009, 2020, and 2021, and the IEEE International Conference on Big Data in 2024. He also served as Secretary (2008-2011) and Vice Chair (2011-2014) of the ACM Special Interest Group on Spatial Information (ACM SIGSPATIAL). His research interests include spatial databases, data mining, urban computing, artificial intelligence, and intelligent transportation systems. He has published over 200 articles in top-rated journals and conference proceedings. His research has been supported by NSF, NIH, DoD, DoE, IARPA, and DOT. He is an ACM Distinguished Scientist and IEEE Fellow.