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Intelligent situational awareness powered by internet of things and human-centered recommender systems

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The increasing uncertainty of the business environment and complexity of high operational tempo has increased the demand for timely, accurate and ease of use information. However, a range of challenges are currently present.

1. Each enterprise relies on several desperate IT systems which have limited interoperability.
2. Relevant information could emerge from thousands of data sources (particularly in wireless and mobile environment), making data capture, storage and analysis difficult.
3. Too much data and information makes decision making difficult, even for Data Expert.

This keynote presents emerging technologies for just-in-time human-centred recommender system and its application to logistics network situation awareness powered by Internet of Things – where simplified data-set and decision support are given through automated data usage and decision mining processes and in real time. This keynote introduces the framework for real time massive data mining and predictive analytics. We demonstrate this through predictive situation context and situation aspect analytics and the intelligent situation awareness platform. We also present the comparison of 40 years of data mining technologies, and an overview of the state-of-the-art recommender systems, viability of “plug n play” functions for any enterprise systems. Finally, we present our statistics of end-users stresses with guided analytics and self-service BI. This is followed by the illustration on the need for moving forward from data visualization to recommender systems, to reduce temporal and cognitive load of the human users, decision makers or data expert.

Biography

Elizabeth Chang is Professor of Logistics and Canberra Fellow at the UNSW Canberra at the Australian Defence Force Academy. She leads the logistics research group targeting the key issues in big data management, defence logistics and sustainment, predictive analytics, situation awareness, IoT and cyber-physical systems, trust, security, risk and privacy. In the 2012 edition of MIS Quarterly Volume 36, Issue 4, Special Issues on Business Research, she was ranked fifth in the world for Researchers in Business Intelligence. She is an IEEE Fellow, has delivered 44 keynote/plenary speeches, over 600 publications and H-Index 36.

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