

Department of Systems Engineering and Engineering Management

Seminar Series

Real World Big Data Usages for Transportation and Logistics

Mr. Gareth Chan

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Date	16 May 2018 (Wednesday)
Time	10:30am - 11:30am
Venue	P7510, 7/F, Yeung Kin Man Academic Building

Abstract

Splunk is named as a Big Data Leader by IDC Asia Pacific
https://www.splunk.com/en_us/form/idc-marketscape.html

In this seminar, Mr. Gareth Chan will describe the trend and achievement of applying big data analytics in real world.

1. **Machine Learning Capabilities and Condition-Based Maintenance: Train Doors on the German Public Rail Transport System and Real-Time Fleet Analytics and Smart Asset Maintenance at DB Cargo**

In Europe, especially in Germany, trains are among the leading means of public transportation. Security-relevant subassemblies of passenger train features, such as entry doors, are always given the highest priority – which leads to costly maintenance. In an attempt to reduce these costs, two trains have been equipped with Multifunction Vehicle Bus (MVB) units in a proof of concept to track door control actions in real-time. The MVB unit monitors the power consumption of an open/close door event and divides it into 256 measuring points. The main goal of our project is to replace the static maintenance cycle of targeted subassemblies with an optimized and condition-based maintenance system. To achieve this, we set up a Splunk

dashboard, which brings together machine data, geo data and weather data by using machine learning algorithms like DBSCAN. We are able to detect anomalies like increased power consumption and event length to predict failing parts.

2. Robotics Analytics at Target: Utilizing Machine Data from Robots to Provide Data-driven Insights and Decisions and Turn IoT sensor data into Operational Intelligence for logistics & Detect IoT anomalies and geospatial patterns for logistics insights

An efficient, reliable, and optimized supply chain is essential for retailers to achieve industry leading financial, operational, and customer satisfaction results. Technology is helping make everything in life a little bit easier and more efficient--including the process of shipping merchandise through a Distribution Center to a retailer's store. It is no secret that many retailers are using robotic and automated warehouse technologies to assist with merchandise retrieval and order fulfillment. Robots and automated systems may help make a retailer's life a little easier and more efficient, but automated technologies do not necessarily make a retailer optimized or reliable. In this session, we will discuss how we have used Splunk Enterprise to analyze and gain insights from the machine data generated by the robotic and automated systems in Target's Distribution Centers. We will discuss how Splunk Enterprise has enabled us to automate reporting and use predictive alerts and analytics to create a reliable and optimized Target supply chain.

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All are Welcome!