Big Data Analytics and Machine Learning for Smart Logistics

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In the era of big data, logistics is becoming smarter and more efficient than ever before. With the development of smart phones and the Internet of Things (IoT), more and more business transactions occurred online. In a supply chain network, there are suppliers, manufacturing sites, distribution centers and customers. The supply chain management involves managing the flow of goods, storage of raw materials, inventory management and transportation. The synergy between big data and smart city reshapes the conventional supply chain. Large amounts of order data from customers could make the location selection of warehouses automatic and intelligent. Moreover, the online traffic data can be analyzed to make the transportation of goods more economical. Due to the above great potential, smart logistics has attracted huge interest from big companies.

In this project, we will adopt big data analytics and machine learning tools to analyze the supply, demand, price as well as traffic data. Based on the extracted useful information, we will develop a stochastic programming model for the smart supply chain design and planning. The resulting optimal supply chain network will be compared with existing networks to quantify the improvements.