

At the Chair of Logistics and Supply Chain Management of TUM School of Management we are looking for an interested and qualified student to conduct his/her

on the topic

Encrypted Information Sharing in Supply Chain Management

Information leakage is one of the main concerns when companies are involved in collaborative activities. As they are unsure how securely the information can be handled by the informed parties, it is challenging for supply chain members to collaborate seamlessly. In recent days, the concept of Secure Supply Chain Collaboration (SSCC) protocols has drawn considerable attention as one of the solutions for coordination. The main idea of SSCC is to enable supply chain members to achieve optimal system-wide goals without revealing the private information of involved parties, even though collaborative decisions require the information. Until now, these protocols have been applied mainly for multi-party computation problems such as capacity allocation, lot-sizing, and auctions. This thesis aims to apply this concept to one of the prevailing supply chain management problems and explore the opportunities of SSCC protocols in practice.

Selected research tasks:

- Literature review on supply chain coordination mechanisms and SSCC protocols
- Application of promising information-sharing mechanisms under SSCC protocols
- A systematic comparison of protocol performances
- Analysis of results and implications

Requirements:

The thesis is for master students of the study-program TUM-BWL (with a major in Operations and Supply Chain Management). The ability to work independently as well as analytical skills are required. Knowledge of a general-purpose programming language (Python, C++, Java, or others) and microeconomics (such as game theory, mechanism design, revelation principle) is required. The thesis should be written in English.

Begin: As soon as possible

Advisor: Eunji Lee

Application: Curriculum vitae, application form and transcript of records to logtheses.wi@tum.de