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## Synthetic Demand Generation in a Farming-for-Mining-Framework for Logistics Networks

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Logistics networks are complex systems due to drivers of change such as globalization and digitalization. In this context, decision makers in supply chain management are challenged with maintaining a logistics network in a good and competitive state. Because of the complexity, decision makers should be supported accordingly in answering a multitude of logistics task. A crucial factor to support decisions is gaining knowledge and one of the frequently used methods in logistics networks is knowledge discovery in databases. Besides preprocessing observational data, simulation can be used to generate synthetical data that can be used as a suitable input for the knowledge discovery process which is called data farming. A common parameter for such a simulation model of logistics networks is demand for a stock keeping unit. A typical scenario is that data, for example demand data, is not available or cannot be used for the knowledge discovery process due to, e.g., data privacy reasons. To tackle this problem, we developed a farming-for-mining-framework, where we combine simulation-based data generation and knowledge discovery. One of the central parts of the framework is the design of experiments, where we introduce a demand generator for the realistic generation of demand in the used simulation model.

In this talk, we introduce our farming-for-mining-framework and discuss, how we combine data farming and knowledge discovery. We lay a focus on the data generation part and show, how well-designed experiments with a simulation model can be supported by generating realistic demand with seasonality in a logistics network.

### Keywords

Data Farming, Knowledge Discovery in Databases, Logistics Networks

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