Efficient Performance Analytics for Large-Scale Logistics Networks

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The performance of logistics and transportation networks is influenced by various sources of uncertainty, such as demand fluctuations or shipment delays. Even though modern-day data analytics provides statistical information on these uncertain parameters, it remains a challenge to understand the interplay between different sources of uncertainty and the implications on the performance of the system as a whole. The goal of this project is to develop a new methodology for analyzing network performance and reliability. By combining recent advances from data science with classic insights from graph theory, we aim at developing computationally efficient methods that provide accurate performance evaluation and decision support even for large-scale networks.