Optimizing Inventory Management

In the complex world of e-commerce at Digitec Galaxus, managing an inventory of items from multiple suppliers - each with different prices, stock levels and delivery schedules - is a significant challenge. Effective inventory optimisation that balances supply and demand to minimise costs and maximise service levels is critical. In this project, you will work with an industry partner to develop inventory management policies for real-world scenarios. The approach will start with traditional integer programming methods, which provide a basic framework for inventory optimisation. From there, you will explore Reinforcement Learning, starting with simple models and gradually introducing complexity to better simulate real-world conditions. The project will involve iterative development, continuously refining models by incorporating more complex variables and constraints to improve scalability and adaptability in a dynamic e-commerce environment.

Requirements

We are looking for individuals with a strong background in mathematical modeling, optimization techniques and machine learning, specifically in integer linear programming (ILP) and reinforcement learning (RL). Proficiency in programming, particularly in Python, is expected, and previous experience with common RL libraries (e.g. stable baselines) is a plus. We will have weekly meetings to discuss questions, progress, and brainstorm future ideas.

Interested? Please contact us for more details!

Contact

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