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BUSINESS LOGISTICS IN MODERN MANAGEMENT

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TRAFFIC FORECASTING FOR DYNAMIC ROUTE SCHEDULING

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Abstract

The distribution of goods in cities is one of the main sources of energy consumption and air pollution. Most routing solutions are designed to address common transportation problems but not to supply a specific group of food items. The supply of fresh food places new demands on e-grocery solutions. The specificity of the supply of fresh food is based on the fact that the products are delivered in small quantities to several delivery points. However, this is contrary to the principles of sustainability. An analysis of the scientific literature has revealed that more research is needed into food quality assessment and route planning taking into consideration sustainability and resilience aspects. The aim of this is to develop a dynamic route planning methodology for sustainable delivery of fresh food. The development of the methodology is based on dynamic route planning methods. This presentation focuses on traffic forecasting aspect of the recommended approach. The analysis tested various deep learning techniques to estimate traffic flow patterns in Vilnius. The analysis compared multiple features, missing value analysis and time horizon accuracy.

Keywords: Traffic Forecasting; Dynamic Route Scheduling; Sustainability; Fresh Food Delivery; Deep Learning