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An AI-Based Framework for Dynamic Price Adjustment in the Car Rental Industry

Modern, flexible, data-driven pricing techniques are required for revenue management in the car rental sector, in order to better meet the ever-changing market conditions and erratic customer demand. Traditional pricing approaches often fall short in capturing the inherent volatility and complexity that exist in the particular industry. However, the growing availability of real-time data has created new opportunities for car rental companies to adopt dynamic pricing models powered by data analytics. The incorporation of Artificial Intelligence into pricing strategies is capable of reshaping the landscape of revenue optimization.

This study explores the use of machine learning-based dynamic pricing within the car rental domain. It presents a comprehensive framework centered on the implementation of Machine and Deep Learning methods, tailored to this sector's unique characteristics. Key variables—such as competitor pricing and fleet availability—identified as critical by domain experts, are integrated into predictive models that forecast demand and generate pricing recommendations across various vehicle categories and rental locations.

Special/ Invited session

Classification

Both methodology and application

Keywords

Dynamic Pricing, Revenue Management, Machine Learning

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Track Classification: Statistics in Tourism