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(57) Abstract :
Customer retention is a critical factor in business success, as acquiring new customers is often more costly than retaining existing ones. With the rise of data-driven decision-making, machine learning (ML) has emerged as a powerful tool for predicting customer churn and enhancing loyalty strategies. This paper provides a comprehensive review of machine learning methods used for churn prediction, examining their effectiveness, advantages, and limitations. We explore various supervised and unsupervised learning techniques, including decision trees, neural networks, support vector machines, and ensemble models, as well as deep learning approaches. Additionally, we discuss key factors influencing customer churn and how businesses can leverage ML insights to implement proactive retention strategies. The paper also highlights challenges in data quality, model interpretability, and ethical considerations. Finally, we provide recommendations for business practitioners to effectively apply ML-based churn prediction models for improved customer loyalty and long-term business growth.

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