Leveraging Generative AI for Enhanced Financial Data Analysis and Mining: Challenges and Opportunities

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Abstract*: Generative AI, powered by deep learning, has surged in recent years, excelling in image and text generation. Now, it extends its reach to data analysis, leveraging models like GANs and VAEs to uncover patterns and synthesize data. The research dissects this fusion, focusing on banking. We explore how generative models enhance anomaly detection, predictive modelling, and customer engagement. Ethical considerations and challenges like interpretability are also scrutinized. Looking ahead, we envision explainable AI, regulatory compliance, and hybrid model adoption shaping the future. Generative AI promises to redefine financial analytics, propelling innovation and efficiency in the banking sector.*

Keywords: Generative AI, Artificial Intelligence, Finance, Data Analytics

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