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# Harnessing Artificial Intelligence and Machine Learning for Advanced Fraud Detection and Prevention

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**Abstract :** Forensic accounting is a specialized field that involves the application of accounting principles, investigative skills, and legal knowledge to detect and prevent fraud. With the rise of big data and technological advancements, artificial intelligence (AI) and machine learning (ML) algorithms have emerged as powerful tools for forensic accountants to enhance their fraud detection capabilities. In this paper, we review and analyze various AI/ML algorithms that are commonly used in forensic accounting, including supervised and unsupervised learning, deep learning, natural language processing Convolutional Neural Networks (CNNs), Recurrent Neural Networks (RNNs), Support Vector Machines (SVMs), Decision Trees, and Random Forests. We discuss their underlying principles, strengths, and limitations and provide empirical evidence from existing research studies demonstrating their effectiveness in detecting financial fraud. We also highlight potential ethical considerations and challenges associated with using AI/ML in forensic accounting. Furthermore, we highlight the benefits of these technologies in improving fraud detection and prevention in forensic accounting.

**Keywords :** AI, machine learning, forensic accounting & fraud detection, anti money laundering, Benford's law, fraud triangle theory
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