

Chapter 12

Sidestepping Ad Fraud Through Interfaces of Artificial Intelligence Machine Learning: Deep Dive Into Financial Fraud Auxiliary Brand Safety

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ABSTRACT

The contemporary landscape of banking and financial industry is marked by an amalgamation of cutting-edge technologies and ever-evolving complexities, underscoring the pressing need for innovative solutions to combat a surge in sophisticated fraudulent activities. The focus is particularly sharpened on three pivotal dimensions: Ad Click Fraud, Credit Card Management Fraud and Document Dispensation Fraud within the expansive domain of E-commerce transactions. This chapter explores the AI-based document verification systems which emphasizing their pivotal role in securing transactions that hinge on authenticating documents such as- forged documentation are addressed through innovative solutions including the integration of blockchain technology with AI which not only enhances security but also establishes an immutable ledger of transactions, mitigating risks associated with document-based frauds.

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1. INTRODUCTION

Artificial intelligence (AI) and machine learning (ML) has become key players in the world of fighting these growing threats. These tools and techs provide the advanced data analysis; pattern recognition algorithm based real-time monitoring that help in detecting and preventing ad fraud (Broby & Murphy, 2024). Advertisers can use AI and ML to more accurately detect fraudulent activity at a faster rate than traditional detection methods, protecting their investments while preserving the sanctity of their brand. This chapter embarks on an ambitious exploration into the arena of Artificial Intelligence (AI) and Machine Learning (ML) probing their intricate interfaces to delineate strategies for capturing and vanquishing frauds (Alghofaili et al., 2020). Also, an ever-expanding digital universe, advertising has established itself as a faculty that is inexorably tied to branding strategy and capable of delivering unparalleled audiences with perfect accuracy (Sadgali et al., 2019) (Sen et al., 2021). But those same technologies that are responsible for transforming advertising from speculative risk to growth engine have also begot a second existential threat: ad fraud. So-called ad fraud attempts to generate false impressions, clicks or conversions in advertising systems that cost the industry billions of dollars annually has become a pervasive issue undermining the effectiveness on digital campaigns and trust in online platforms (Sharma & Singh, 2023).

Ad fraud takes myriad forms, ranging from click fraud which occurs when automated bots create fake clicks on ads to elaborate contrivances like conversion fraud in which fraudulent activities are designed to replicate real user actions. This fraud is then extracting broad-ranging consequences, that make the advertiser hemorrhage money needlessly and lagging market metrics while delivering brand reputation a hard blow. With that in mind, brand safety is even more important than ever ensuring a brand don't appear next to inappropriate or harmful content. Predictive analytics are based on historical data, and real-time monitoring systems incorporate AI-driven algorithms to prevent potential fraud. They can sift through the noise and reveal patterns that to typical user behavior look like ordinary operating while indicative of other kinds of fraud (like account takeover as botting). Machine learning models layered with knowledge from their training data on these immense sets can effectively then tell when we've crossed the line, helping us identify malicious bots vs. normal users. Neural networks allow for the dissection of more sophisticated fraud detection through deep learning technologies, able to recognize patterns and uncover new forms of fraudulent behavior.

It is easy to overlook that AI and Machine Learning are meant to do more than just catch fraud. They also reinforce brand safety by providing the right contexts for an ad. Algorithms can use AI to analyze content and user activity, helping mitigate against ads appearing alongside damaging or contentious material shielding a brand

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