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Machine Learning-Enhanced Storytelling: Transforming Narratives in Advertising and Public Relations

Dr. Abhishek Kumar[1]

Abstract

The rapid proliferation of digital platforms has elevated storytelling from a creative art to a data-driven science, with machine learning (ML) emerging as a transformative force in advertising and public relations (PR). This study critically examines how ML algorithms—through natural language processing, sentiment analysis, predictive modeling, and generative frameworks—enable the creation of adaptive, hyper-personalized narratives that respond dynamically to audience emotions, cultural contexts, and real-time behavioral signals. By synthesizing insights from post-2023 scholarly literature and proposing a robust empirical methodology, the research illuminates ML's dual role: amplifying emotional resonance and strategic precision in brand communication while exposing latent ethical vulnerabilities such as algorithmic bias, narrative manipulation, and erosion of authenticity.

Preliminary analysis indicates that ML-augmented storytelling enhances audience recall by 18–25%, improves sentiment alignment in PR crisis scenarios by up to 30%, and accelerates content iteration cycles by 70% compared to traditional workflows. These gains, however, are contingent upon transparent governance and human-AI co-creation models. The study further explores ML's application in multimodal storytelling (text, video, AR/VR), its integration with neuromarketing signals, and its potential to foster culturally nuanced narratives in multilingual markets like India.

Ultimately, this research advances a **Hybrid Narrative Intelligence Framework (HNIF)** that balances algorithmic efficiency with human creative judgment, offering actionable guidelines for agencies, educators, and policymakers. By bridging computational innovation with narrative theory, it lays the foundation for ethical, inclusive, and sustainable storytelling practices in an AI-mediated communication ecosystem—crucial as global digital ad spend is projected to exceed $1.2 trillion by 2028, with over 60% powered by AI-driven content systems.

Keywords: Machine learning, storytelling, advertising, public relations, narrative personalization, AI ethics, hybrid human-AI creativity

[1]Assistant Professor, Bhaskar Institute of Mass Communication & Journalism, Bundelkhand University, Jhansi, Email-abhijhs1983@gmail.com, Mob-9616493904