Media Development Strategies in the AI Environment: Postprint

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Abstract

As artificial intelligence technology continues to evolve, the media industry faces both new development opportunities and challenges. On one hand, AI has significantly enhanced the efficiency of news reporting and enables precise content delivery to diverse audiences. On the other hand, AI-driven content distribution suffers from inconsistent quality and remains limited in areas such as audience interaction, humanistic engagement, and in-depth content mining. This paper analyzes the advantages and disadvantages of AI-media integration and proposes strategies for advancing the "AI + media" paradigm.

Full Text

Abstract

With the iterative development of artificial intelligence technology, the media industry has encountered new opportunities and challenges. On one hand, AI has greatly improved the efficiency of news writing and enables precise content delivery to different audiences; on the other hand, AI-pushed content varies greatly in quality, and shortcomings remain in areas such as audience interaction, humanistic care, and in-depth content mining. This article analyzes the advantages and disadvantages of AI-media integration and proposes strategies for how "AI + Media" can effectively develop.

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1. Overview of AI Development

In today's era, artificial intelligence has achieved breakthroughs and applications across an expanding array of fields. In traditional industries, robots have already supplanted humans on a large scale in repetitive labor segments, with unmanned supermarkets and factories becoming increasingly commonplace. Moreover, AI can now write news articles and create paintings, demonstrating formidable substitution capabilities in nearly every domain it enters.

The velocity of AI news writing is particularly striking. On the evening of August 8, 2017, when a magnitude 7.0 earthquake struck Jiuzhaigou, Sichuan, a writing robot was the first to break the story among competing media outlets, producing a globally exclusive report in a mere 25 seconds. The article quality proved satisfactory: logically coherent, fluently composed, with precise wording and comprehensive coverage. Even a veteran journalist would struggle to match such output, particularly considering the 25-second timeframe. Kristian Hammond, co-founder and CTO of Narrative Science, predicts that machine-generated news will eventually account for 90% of media content, especially in domains with continuous data streams such as sports and finance, where big data analytics can deliver trend forecasts with greater speed and precision.

Contemporary AI, however, is no longer confined to low-end, mechanical, repetitive tasks but is advancing into more sophisticated domains. Beyond displacing Wall Street traders, AI is now replacing professionals in what were once considered the most prestigious occupations in the United States—physicians, lawyers, and accountants—in substantial numbers. Propelled by advances in chip design, processing capabilities, and big data infrastructure, AI has become so ubiquitous that we scarcely notice its presence. We take for granted when Siri schedules our appointments or when Facebook tags our photos and, in doing so, disrupts our democratic processes. Computers have already mastered stock selection, speech translation, and cancer diagnosis, extending their influence far beyond mere computational tasks.

2. Shortcomings of AI Applications

Despite these advances, AI-generated content remains uneven in quality, and algorithm-driven news dissemination fails to foster the development of comprehensive news literacy among audiences. Algorithmic recommendations operate by mining user data on news reading and commenting behaviors to push content aligned with user interests. Given the wide variation in audience news literacy, ineffective curation and identification of newsworthy topics may lead to the proliferation of misinformation and the creation of "information cocoons" that insulate users from diverse perspectives.

Several technical bottlenecks in AI remain difficult to overcome. As Tad Friend notes in "Should We Be Afraid of AI?" , Google was unable to prevent its Google Photos recognition engine from misidentifying black people as gorillas, ultimately resorting to prohibiting the service from recognizing gorillas alto-

gether. In 1988, roboticist Hans Moravec articulated what became known as Moravec' s Paradox: difficult tasks are those that mimic children' s play. "Getting computers to perform at adult levels on intelligence tests or checkers is relatively easy," he observed, "but making them acquire the skills of a one-year-old in perception and mobility is difficult or impossible." Although robots have since improved in vision and locomotion, the paradox persists. For instance, robotic hand control remains closer to that of the "Hulk" than to that of a dexterous "Dodger."

In a classic episode of the original Star Trek series, the starship Enterprise is placed under the control of the supercomputer M5. Captain Kirk intuitively resists this arrangement, and even before training exercises conclude, M5 overreacts and attacks "enemy" vessels. The computer' s paranoia originates from its programmer, who imprinted his "human engrams" (presumably a simulated brain) onto the machine to enable thought. As other ships prepare to destroy the Enterprise, Kirk manipulates M5 into recognizing that in protecting itself, it has become a murderer. M5 immediately self-terminates, thereby demonstrating the value of human intuition and establishing that machines are not inherently so "bright." Like many burgeoning AI applications across industries, AI in the media sector is developing at a pace that humans can scarcely match.

3. Media Response Strategies

AI presents both opportunities and challenges for the media sector. On one hand, the inherent uncertainty of AI development poses novel challenges for media professionals. As a disruptive technology with far-reaching impacts, AI may transform employment structures, challenge legal and social ethics, infringe upon personal privacy, and disrupt international relations norms. The influence of modern technology on news media has exceeded expectations. A Swedish study reveals that most readers cannot distinguish between articles written by automated software and those authored by journalists. One software company executive predicts that robot-written articles will win Pulitzer Prizes within five years. Additionally, as new media technologies rapidly evolve, content infringement has become more diverse, yet countermeasures remain inadequate and lack foresight. In AR news, for example, while copyright for images and text belongs to authors, copyright for AR models belongs to their owners, creating complex multi-layered copyright issues for single works.

On the other hand, AI delivers tangible benefits to media professionals. Robot writers, as auxiliary tools, offer advantages in speed, big data processing, and visualization, dramatically improving efficiency and liberating journalists from mountains of basic data and information. Meanwhile, human thought processes remain beyond robotic imitation. Analytical and opinion-based reporting requires authoritative source verification, humanistic literacy, logical reasoning, and judgment—capabilities in which robot writers seemingly cannot compete with human journalists. Moreover, robot journalists are limited in the types of articles they can produce, incapable of conducting in-depth analysis or re-

fining their prose. Humans appear superior in transcending the single-person-single-location-single-event reporting model, producing interpretive, analytical, and predictive reports that examine future trends, causal relationships between events, and the evolution of contradictions. Such reporting simultaneously dissects internal dynamics and presents macro-contexts for facts with balance and focus, thereby maintaining authenticity more effectively. As Zhao Duo, a reporter from People' s Daily, writes in "Robot Journalists Get Busy" : "Robots cannot conduct in-depth analysis, let alone refine their wording. If journalists were truly replaced by cold machines one day, news would likely degenerate into a mechanical 'patchwork' of various reporting patterns."

Media professionals must clearly recognize that AI is not a panacea; we must leverage its strengths to compensate for its weaknesses and apply it rationally. The internet era demands higher standards for media comprehensiveness, interactivity, and integration, requiring enhanced AI-audience interaction and information integration capabilities. Technically, we must continuously advance AI technology development to remedy algorithmic loopholes. Regarding audiences, we should emphasize cultivating media literacy to promote human-machine cooperation and develop new business models. Most importantly, media workers must deeply recognize that "humans" always remain at the core of critical news operation links—their capacity for independent thinking, innovation, ethical standards, and social responsibility can never be replaced by machines. AI can leverage its advantages in efficient information processing and integration, while humans can utilize these rapidly collected data and machine-generated texts to focus on in-depth news reporting. AI is a double-edged sword. While it holds advantages in data analysis, integration, and writing speed, positively impacting journalism, it simultaneously presents new challenges such as inadequate service and interactivity. Only when media organizations fully leverage AI as a supplement for handling massive information and other weaknesses, while simultaneously giving full play to human subjective initiative, allowing "humans" and "machines" to cooperate and complement each other, can AI be better harnessed for human benefit.

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Note: Figure translations are in progress. See original paper for figures.