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THE DIGITAL ATHLETE: ARTIFICIAL INTELLIGENCE, SOCIAL MEDIA, AND THE TRANSFORMATION OF RUNNING COMMUNITIES

(Review study)

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Abstract

Artificial Intelligence (AI) and social media are reshaping contemporary sport, extending their influence beyond elite performance to everyday practices such as running. This paper examines the convergence of AI technologies, digital platforms, and the global running community, with attention to how social media amplifies performance data, athlete identity, and community formation. Drawing on scholarly literature, industry reports, and recent developments in wearable technology, the paper proposes a conceptual framework—the "Digital Athlete Model"—in which AI-driven data and algorithmic visibility intersect with social media storytelling to reconfigure how running is performed, shared, and monetized. The findings suggest that running is no longer merely a physical pursuit but a digitalized and networked practice that drives sponsorship, tourism, and cultural diplomacy. The paper concludes by outlining implications for athletes, event organizers, and policymakers, as well as ethical considerations for the future of AI-mediated sport.

Keywords: Artificial Intelligence; running; social media; digitalization; athlete branding; sports technology.

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1. Introduction

Running is one of the most universal and accessible sports, with more than 100 million global participants and growing interest in marathons, trail running, and recreational events (Statista, 2024). The digitisation of sport, accelerated by Artificial Intelligence (AI) and social media platforms, has altered the way running is performed, consumed, and commercialized. Digital platforms such as Instagram, TikTok, and Strava amplify personal performance data and transform running into communicative and social practice. At the same time, AI embedded in wearables, apps, and content-generation tools shapes both training and storytelling.

The purpose of this paper is to explore how the intersection of AI and social media contributes to the transformation of running into a "digitalised practice," which extends beyond physical training into spheres of identity, branding, and tourism. By situating running within broader debates on digitalisation and sport, the study asks:

- How is AI shaping performance monitoring and personalization in running?
- How do social media platforms mediate visibility and influence in running communities?
- What are the implications for sponsorship, cultural exchange, and the commercialization of health?

The argument advanced here is that AI and social media together create a new category of "digital athlete," in which performance data, algorithmic curation, and digital storytelling converge to extend running into global business and cultural networks.

2. Literature Review

2.1 AI in Sports and Running

AI technologies are increasingly embedded in sports performance through wearables, predictive analytics, and algorithmic training guidance (Pizzo et al., 2018). Devices such as Garmin, Polar, and Apple Watch use AI to track biometric data including heart rate, VO_2 max, and stride efficiency. Research highlights that AI enables hyper-personalised training plans, injury prediction, and performance optimization (Fister et al., 2019). In running specifically, AI-based apps such as Runna and Nike Run Club integrate machine learning models to tailor plans to individual physiology.

2.2 Social Media and Athlete Identity

Social media platforms function as critical arenas where athletes—elite and amateur—construct and perform identities (Hutchins & Rowe, 2012). Algorithms that privilege certain forms of engagement (e.g., short-form videos on TikTok) mediate visibility and thereby sponsorship opportunities (Pegoraro & Jinnah, 2012). Running communities on Instagram and Strava demonstrate how everyday athletes leverage digital storytelling to gain recognition and access partnerships, a phenomenon referred to as "micro-influencing" (Frederick et al., 2020).

2.3 Digitalisation and Sport Tourism

Running has become a driver of tourism, with marathon destinations such as New York, Berlin, and Dubai attracting thousands of international participants annually. Research in sport management suggests that digitalisation enhances event visibility, allowing races to function as cultural diplomacy tools (Ratten, 2020). Social media expands these dynamics, as runners broadcast experiences globally, while AI-powered analytics help event organizers target audiences and optimize event logistics.

2.4 Gaps in Literature

While extensive research has addressed AI in performance enhancement and social media in athlete branding, there remains limited integration of these strands with reference to everyday sports like running. This paper addresses this gap by conceptualizing the "digital athlete" as a nexus of AI-driven data and social media visibility.

3. Conceptual Framework: The Digital Athlete Model

The Digital Athlete Model proposed here integrates three dimensions:

1. AI Datafication – collection, analysis, and personalization of biometric and performance data through wearables and apps.
2. Social Media Storytelling – sharing, curating, and amplifying running narratives across platforms.
3. Commercial and Cultural Networks – monetization through sponsorship, digital tourism, and community formation.

These three dimensions interact in recursive loops: data informs storytelling, storytelling amplifies identity, and identity attracts commercial or cultural recognition.

4. Discussion

4.1 Athlete Identity and Algorithmic Mediation

Social media algorithms determine which running content achieves visibility. Athletes who combine authentic performance data with compelling narratives often outperform elite professionals in online influence (Hambrick et al., 2020). AI-driven editing tools further lower barriers, enabling runners to transform raw performance metrics into engaging digital content.

4.2 Case Studies

- Strava Metro provides aggregated running data for urban planning, showing how individual performance data feeds into broader societal applications.
- Nike Run Club integrates AI coaching and gamified sharing features, blurring the line between training and social performance.
- TikTok running communities illustrate how algorithmic amplification can turn recreational runners into global micro-celebrities.

4.3 Ethical Considerations

Concerns arise around data privacy, algorithmic bias, and commercialization of health. AI systems may privilege certain body types or performance styles, while data ownership remains contested between athletes, app developers, and sponsors (Andrejevic, 2019).

5. Implications

For Athletes

- Democratization of visibility: amateurs can achieve global recognition through AI + social media.
- Enhanced personalization but also pressure to constantly perform digitally.

For Sponsors and Race Organizers

- New models of engagement: sponsorship of digital athletes, not only elites.
- AI-enhanced targeting of participants for tourism and event promotion.

For Policy and Society

- Running becomes an instrument of cultural diplomacy and soft power.
- Raises questions of digital inclusion: who benefits from AI and who is excluded.

6. Conclusion and Future Research

This paper argues that AI and social media are co-constructing a new form of "digital athlete," with running as a paradigmatic case. The transformation extends running beyond physical performance to become a digitally mediated practice shaping identity, sponsorship, and cultural diplomacy. Future research should examine longitudinal impacts of AI-driven storytelling, cross-cultural differences in digital athlete identities, and policy frameworks for ethical data governance.

Declaration of Conflicting Interests and Ethics

The authors declare no conflict of interest.

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