

4th INTERNATIONAL CONFERENCE ON
AI ML, DATA SCIENCE AND
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Enhancing Mobile App User Experiences with AI-Driven Personalization

Abstract: The integration of artificial intelligence (AI) into mobile applications has revolutionised user interactions by enabling dynamic and adaptive personalisation. This paper explores the transformative potential of AI-driven personalisation in enhancing user experiences across mobile platforms, drawing on advancements in machine learning (ML) and deep learning (DL). AI systems can deliver tailored content and recommendations that align with individual user profiles by analysing extensive datasets encompassing user behaviour, preferences, and historical interactions. This approach not only boosts user satisfaction and engagement but also strengthens retention rates, ultimately driving business outcomes.

This research encompasses a comprehensive review of methodologies used to implement AI-driven personalisation, including adaptive interfaces, real-time data analysis, and recommender systems, alongside case studies from sectors such as e-commerce, healthcare, and digital media. Notably, AI algorithms, exemplified by models in apps such as TikTok, effectively curate content that adapts dynamically to user behaviour, showcasing the impact of AI on user satisfaction and loyalty. Moreover, empirical studies, such as those involving on-device versus cloud-based inferences, highlight the benefits and trade-offs of these deployment strategies concerning data privacy, latency, and processing capabilities.

This study further addresses challenges such as data privacy concerns and the ethical implications of personalisation algorithms, proposing frameworks to mitigate biases and ensure fairness. By synthesising findings from current AI personalisation implementations and their user-level impact, this study provides actionable insights for mobile app developers aiming to leverage AI to enhance user experiences while adhering to ethical standards. Ultimately, the study underscores AI-driven personalisation as a critical element for creating meaningful, user-centric mobile interactions in a competitive digital landscape.

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Biography: Maxwell Nwanna is a seasoned Mobile App Engineer with eight years of proven expertise in the development of high-quality applications across diverse platforms, including Native Android (with Android TV) and iOS (with tvOS). His portfolio spans multiple sectors, such as fintech, social media, health, logistics, and commercial industries, where he has consistently demonstrated a unique ability to merge technical precision with user-centric design. Maxwell's innovative approach to app development ensures seamless and intuitive user experiences that resonate with audiences globally. Currently, he leverages his expertise as a co-founder of RideNear, a dynamic taxi aggregator app based in the UK, showcasing his entrepreneurial spirit and commitment to address user needs through technology.

With strong adaptability forged through work on three continents—Africa, Europe, and North America—Maxwell brings a global perspective to every project. His dedication to remaining at the forefront of emerging technologies and frameworks underscores his commitment to excellence and innovation. Known for his collaborative nature and deep understanding of platform-specific nuances, Maxwell excels in fast-paced, evolving environments. Whether leading a team or working within cross-functional groups, he is recognized for his meticulous attention to detail, on-time project delivery, and solutions that not only meet but exceed expectations.