

Enhanced Identity and Access Management with Artificial Intelligence: A Strategic Overview

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Abstract

The article aims to impart an overview of integrating artificial intelligence (AI) with identity and access management (IAM) systems and their strategic view regarding evolution, benefits, and challenges. Solid IAM systems are bulwarks of defense that shield sensitive information from sophisticated digital threats. The evolution of IAM during these last three decades - from modules such as Lightweight Directory Access Protocol (LDAP) to developed systems - has made inroads into handling the contemporary complexities of modern security protocols. It is AI that boosts IAM to real-time threat detection, automated user provisioning, and compliance with regulations through which provisioning is done using machine learning to analyze vast amounts of data for the detection of access patterns that are not usual and from those to predict the breaches, followed by the implementation of solid authentications and controls, including biometric and adaptive verification. Apart from providing benefits, there are challenges to be taken care of in a scenario where the integration of AI will call for advanced hardware, standardized software, and intensive training of users. General AI-driven platforms and tools, like IBM Security Identity Governance and Microsoft Azure Active Directory, add to the strength of IAM by ensuring the automatic detection of potential threats and facilitating proactive actions against them. Moreover, the article elaborates on a few AI-driven IAM applications in the finance and healthcare sectors, which considerably impact data security and fraud reduction. In this regard, addressing the current challenges and developing standardized frameworks is going to be imperative for the extraction of the full potential of AI into IAM.

Index terms: Artificial Intelligence, Biometric Authentication, Cybersecurity, Identity and Access Management, Machine Learning

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