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AI-driven fraud detection: Leveraging deep learning and IAM frameworks for enhanced security

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Statement of the Problem: "In recent years, the sophistication of cybercrime has escalated dramatically, posing significant challenges for several institutions. The rising complexity of these attacks means that even small improvements in fraud detection rates can result in substantial cost savings and enhanced security. Traditional rule-based detection systems, which were once adequate, are now falling short in addressing the ever-evolving nature of fraudulent activities. These systems, based on predefined rules and patterns, are often limited by their inability to swiftly adapt to new, unforeseen types of fraud.

This study aims to address the need for advanced solutions by exploring the application of artificial intelligence (AI), specifically deep learning, to improve fraud detection capabilities. AI, with its ability to process vast amounts of data and identify intricate patterns, offers a promising alternative to traditional methods. Deep learning, a subset of AI involving neural networks with many layers, can model complex relationships in data, enhancing the detection of anomalies and potential fraud. This technology's ability to automatically learn and refine its processes makes it exceptionally suitable for the dynamic and complex landscape of financial transactions.

The proposed AI-driven fraud detection process integrates seamlessly with Single Sign-On (SSO) identity and access management (IAM) frameworks, ensuring enhanced security by leveraging existing IAM infrastructures

Automating the fraud detection process through this AI-driven system allows human analysts to focus on high-priority cases requiring detailed investigation. This not only improves efficiency but also ensures that sensitive information is accessed only by authenticated users. The integration with SSO IAM frameworks further enhances security, ensuring tight control and monitoring of access.

The transformative potential of AI in fraud detection is significant. By leveraging advanced AI technologies, several institutions can enhance their security measures and protect against increasingly sophisticated cyber threats. This study underscores the importance of integrating AI-driven systems into existing security infrastructures to provide a robust and adaptive defense against fraud.

Biography

Premsai Ranga is a seasoned professional with over 9 years of experience in Identity and Access Management (IAM), cybersecurity, and technology leadership. His expertise lies in safeguarding critical systems and sensitive data through innovative security solutions, driven by a passion for continuous learning and a commitment to creating secure digital ecosystems. Premsai's notable achievements include spearheading the implementation of Zero-Trust Architecture at Inovalon Inc., reducing insider threats by over 95%. His contributions to projects like the InovalonOne Platform and NLPAaS have been instrumental in revolutionizing access control and advancing security frameworks in the healthcare sector.

Currently, Premsai oversees IAM frameworks for a large-scale organization, managing over 10,000 users, 500+ applications, and 2,000+ APIs. His responsibilities encompass designing IAM policies, managing user access, implementing multi-factor authentication, and collaborating with IT and security teams to ensure seamless integration. He holds a master's degree in computers and information systems with a 3.81 GPA and prestigious certifications, including CISA and Azure Security Engineer Associate, which reinforce his expertise in IAM and cybersecurity.

Beyond his professional endeavors, Premsai is passionate about community engagement. He volunteers with organizations such as First Fruits Farm and Moveable Feast and contributes as a volunteer auditor for ISACA. Looking ahead, he aspires to take on senior leadership roles to influence strategic technology decisions and mentor the next generation of IAM and cybersecurity leaders. With a strong foundation in technical knowledge and a dedication to humanitarian values, Premsai Ranga strives to build a safer, more secure digital world for individuals and organizations alike.

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