

Lecture Notes in Networks and Systems 1513

Mohuya Chakraborty
Shambhu Prasad Chakrabarty
Althaf Marsoof *Editors*

Proceedings of Sixth International Ethical Hacking Conference

AI and Law (eHaCON 2025)



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Enhancing India's Anti-Money Laundering Framework: Transforming Integration of Explainable AI for Better Transparency and Compliance



Sourodip Roy, Ankan Bhattacharya, and Victor Nayak

Abstract The case of Anti-money laundering (AML) is still a threat to the Indian financial system, overemphasising the failure of the traditional AML approaches at the legislative, interpretability, and operational levels. Indeed, when financial institutions employ Artificial Intelligence (AI) in AML, its limited interpretability, whereby AI models act like 'black boxes,' creates a problem in comprehending the decisions made in AML. To mitigate this problem, this study proposes a research question: How can Explainable AI (XAI) be applied in the Indian regulatory environment to enhance model interpretability and decision explainability? This paper will focus on how XAI enhances the credibility and effectiveness of compliance and operations and provides valuable suggestions for institutional and policy adoption of accurate, explainable AI-ML systems into the Indian AML framework. XAI is an area of interest in understanding if it can make AI-driven models effective in AML, thus enjoying regulatory compliance in India. The rationale for doing so is that incorporating XAI will further enhance interpretability, decrease the prevalence of false positives, and increase the likelihood of compliance due to the improved observations regarding decision-making gained from integrating the former. This study develops an academic understanding and future prospect for the initiation of an framework, which will assist in examining India's AML regulations derived from the Prevention of Money Laundering Act, 2002 (The PML Act, 2002), the Reserve Bank of India (RBI), and the Financial Intelligence Unit-India (FIU-Ind).

Keywords Anti-money laundering · Explainable AI · Compliance · Regulatory frameworks

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