Developing Explainable AI Models for Enterprise Decision Support Systems

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Abstract*: This paper explores the growing importance of explainability in artificial intelligence (AI) models deployed in enterprise decision support systems (DSS). As organizations increasingly rely on AI for critical business decisions, the "black box" nature of many advanced models poses significant challenges for stakeholders who need to understand, trust, and justify AI-driven recommendations. We examine current approaches to explainable AI (XAI), evaluate their effectiveness in enterprise contexts, and propose a framework for implementing explainable models in decision support systems. Through case studies and empirical analysis, we demonstrate that explainable AI can enhance decision quality, regulatory compliance, and stakeholder trust while maintaining competitive performance levels*

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