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AI-Driven Data Engineering for Intelligent Debt Resolution and Financial Wellness

Tenny Enoch Devadas

Principal Engineer, Fidelity Investments

Abstract

Rising global debt presents a significant challenge that affects not only financial stability but also mental well-being and access to opportunities, while traditional debt recovery methods remain reactive and lack personalization. This work proposes an AI-driven data engineering framework that leverages behavioral data, public datasets, and social signals, combined with real-time processing technologies such as Kafka, Spark, and BigQuery, to enable early detection of financial distress. Advanced AI models, including risk classification, sentiment analysis, and recommendation systems, identify at-risk individuals, assess their readiness for support, and deliver personalized interventions. The approach outlines a comprehensive financial empowerment journey that moves from detection and engagement to guidance and long-term support, helping individuals achieve sustainable financial health. Emphasizing privacy, transparency, and ethical AI practices aligned with global standards, this framework aims to improve early intervention outcomes, reduce debt burdens, and shift the focus from reactive recovery to proactive financial empowerment.