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AI and Data Engineering: Transforming Debt Recovery into Financial Wellness

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Abstract

Global debt challenges demand innovative, scalable, and human-centered solutions. Traditional financial recovery systems are often reactive and impersonal, addressing issues only after individuals face severe distress. By combining Artificial Intelligence (AI) and Data Engineering, we can transform this approach into proactive financial empowerment.

AI models—such as risk classification, sentiment analysis, and personalized recommendation engines—work alongside real-time data pipelines powered by Kafka, Spark, and BigQuery to detect early warning signs, create unified financial profiles, and deliver tailored guidance. These insights enable personalized outreach, digital coaching, and long-term planning tools that help individuals achieve stability and resilience.

With privacy, transparency, and ethical AI practices at the core, this approach reduces debt burdens, increases early interventions, and promotes preventive financial education. Ultimately, AI and Data Engineering empower people to move beyond recovery, achieve financial wellness, and progress toward lasting financial freedom.