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AI-Powered Predictive Health Risk Management in Insurance Plans: A Multi-Agent System Approach for Personalized Policy Customization

Mahesh Recharla

Oracle EBS Onsite Lead, Biogen, Durham, NC, USA

AI-powered predictive health risk management is transforming insurance by enabling personalized policy customization through advanced analytics and automation. This study explores the integration of a Multi-Agent System (MAS) approach, where AI-driven agents analyze vast health datasets, assess individual risk factors, and tailor insurance plans based on predictive modeling. Machine learning algorithms enhance risk stratification, enabling insurers to offer dynamic pricing, preventive healthcare incentives, and real-time policy adjustments. The MAS framework facilitates efficient data exchange, ensuring transparency, compliance, and ethical AI governance in insurance decision-making. Cloud computing and secure data pipelines further enhance scalability and privacy while optimizing underwriting processes. This research highlights the benefits, challenges, and future prospects of AI-driven predictive analytics in insurance, emphasizing its potential to improve risk assessment accuracy, enhance customer experience, and promote proactive healthcare management in a rapidly evolving insurance landscape.