

LEVERAGING GPT MODELS FOR RISK STRATIFICATION IN HEALTHCARE ANALYTICS

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ABSTRACT

This study explores the innovative integration of Generative Pre-trained Transformer (GPT) models within healthcare analytics to enhance risk stratification processes. By leveraging the advanced natural language processing capabilities of GPT models, the research aims to transform vast amounts of unstructured and structured clinical data into actionable insights, ultimately supporting personalized patient care and early intervention strategies. The methodology involves fine-tuning pre-trained GPT models on diverse healthcare datasets, including electronic health records, clinical notes, and patient histories, to accurately predict risk factors and outcomes. The model's performance is evaluated against traditional risk stratification tools, focusing on its ability to capture subtle linguistic nuances and contextual information that often go unnoticed by conventional algorithms.

Key findings indicate that GPT-enhanced risk stratification models not only improve predictive accuracy but also offer a more holistic view of patient risk profiles by synthesizing complex, multidimensional data. The ability of GPT models to understand and generate context-rich information plays a pivotal role in identifying early warning signs and potential complications, thereby facilitating timely and targeted medical interventions. Moreover, the study discusses the implications of integrating such AI-driven tools in clinical decision support systems, addressing issues related to data privacy, ethical considerations, and the need for continuous model updates.

Overall, the research demonstrates that leveraging GPT models in healthcare analytics holds significant promise for advancing risk stratification methodologies. This approach paves the way for more adaptive, precise, and patient-centered healthcare delivery systems, ultimately contributing to improved health outcomes and more efficient resource allocation in clinical settings.

KEYWORDS: *GPT Models, Risk Stratification, Healthcare Analytics, Clinical Decision Support, Predictive Modeling, Natural Language Processing, Electronic Health Records, Patient-Centered Care, AI-Driven Interventions.*

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