

NHS Emergency / Triage Accuracy using Machine Learning Models

Purpose:

The primary aim of this project is to develop an AI model capable of accurately calculating Triage scores. This endeavor stems from the identified need within the NHS for a reliable model that can effectively assess triage, crucial for efficient emergency department operations. The project undertook comprehensive research to address this necessity and bridge the existing gap in triage accuracy.

Conclusion:

Through meticulous data collection, preprocessing, and model evaluation, this project has successfully advanced the understanding and implementation of Triage scoring within healthcare systems. By leveraging machine learning techniques and carefully curated datasets, the study explored various algorithms' efficacy in Triage calculation. Notably, the investigation revealed insights into the reasons behind Triage miscalculations and proposed solutions to mitigate such discrepancies.

The project's outcomes underscore the importance of robust data preprocessing techniques, including cleaning, transformation, and feature engineering, in optimizing model performance. Furthermore, model selection and performance evaluation elucidated the strengths and limitations of different algorithms, with Support Vector Machine (SVM) emerging as the most accurate and reliable option for Triage scoring.

The results showcase SVM's superiority in precision, recall, accuracy, and F1 score compared to alternative models. Additionally, sensitivity analysis provided valuable insights into each model's performance under varying conditions, reaffirming SVM's consistency and effectiveness.

In conclusion, this project contributes significantly to enhancing Triage accuracy within healthcare systems, particularly in emergency departments. By deploying SVM-based models, healthcare practitioners can make more informed decisions, leading to improved patient outcomes and streamlined resource allocation. Moving forward, continued research and refinement of AI-driven Triage scoring systems hold immense potential for revolutionizing emergency healthcare delivery.