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Brain Stroke Detection Using Machine Learning and Flask Web Application

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Abstract - This paper presents a brain stroke detection web application using machine learning. A Random Forest classifier trained on a healthcare stroke dataset predicts stroke risk from user inputs through a Flask-based interface. The system performs preprocessing, categorical encoding and real-time inference without storing user data, providing a privacy-friendly demonstration tool.

Keywords

Brain Stroke Detection, Machine Learning, Random Forest, Flask, Healthcare

Introduction

Stroke is a leading cause of death. Early prediction helps timely intervention. This work develops a lightweight prediction system.

Methodology

Healthcare data are preprocessed, categorical variables encoded, model trained using Random Forest, saved with joblib, and deployed in Flask for prediction.

Implementation

Frontend uses HTML/CSS/JS. Backend uses Flask and a pretrained model loaded from stroke_model.pkl.

Results

The application predicts stroke risk interactively and displays results instantly without database storage.

Conclusion

The proposed system demonstrates an effective and user-friendly approach for stroke risk prediction suitable for educational and prototype healthcare applications.

References

[1] WHO Stroke Facts.
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[3] Flask Documentation.