AI CardioCare : Heart Disease Prediction

CS-371 Artificial Intelligence

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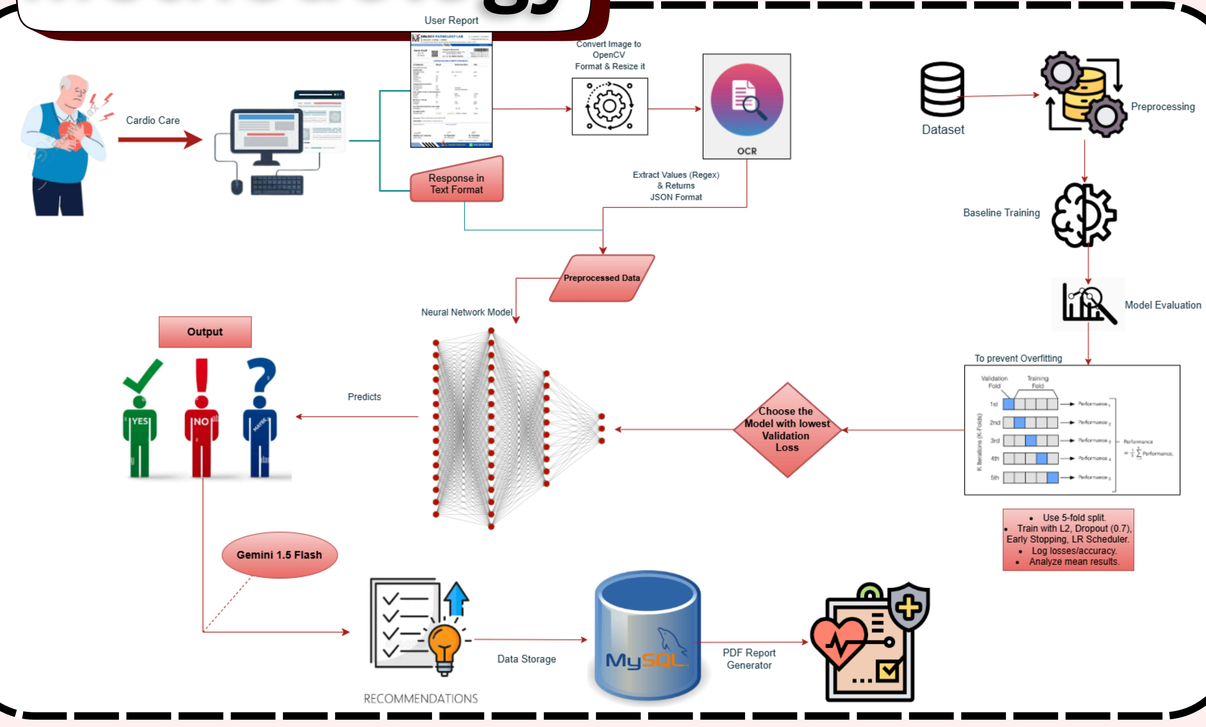
Problem Statement

Heart disease remains one of the leading causes of mortality worldwide, with millions of lives lost each year due to cardiovascular complications.Timely heart disease diagnosis is crucial, but traditional methods often rely on in-person consultations, causing delays in detection and treatment. Many individuals remain unaware of their condition due to limited access to healthcare and routine check-ups. An AI-based online system is needed to provide quick, reliable, and accessible heart disease risk assessments, enabling early intervention and proactive healthcare.

Abstract

AI CardioCare is an advanced AI-powered system designed to predict and diagnose heart disease, offering personalized treatment recommendations. By analyzing both textual patient data and medical imaging, the system provides early and accurate detection of heart conditions. It classifies patients into three categories: Yes (heart disease present), No (no heart disease), and Maybe (further investigation required), using a neural network model for multi-class classification. Leveraging AI, Optical Character Recognition (OCR), and deep learning techniques, AI CardioCare enhances healthcare accessibility, improves early detection, and offers actionable insights to medical professionals. This project aligns with Sustainable Development Goal 3, aiming to promote preventative care and reduce healthcare inequalities.

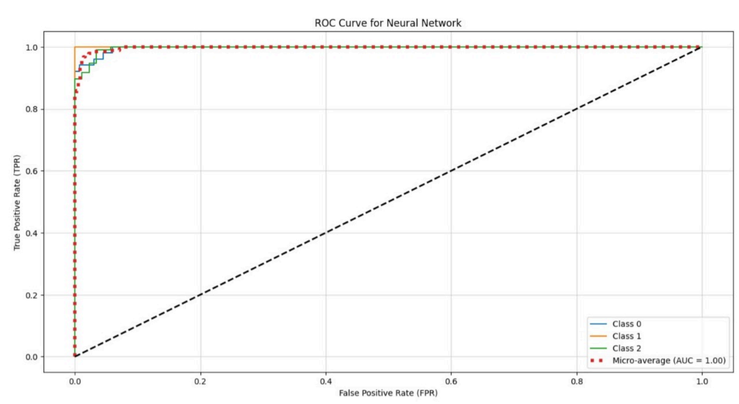
Methodology

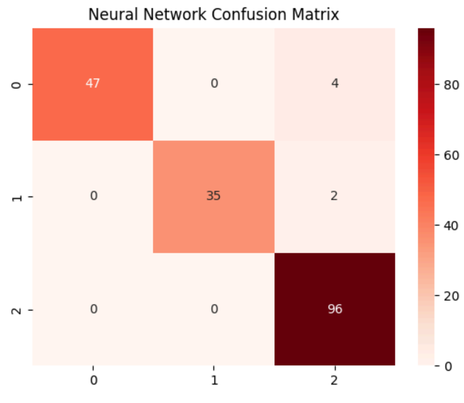


Research Gap

Feature	Existing Models	Proposed System
Classification Type	Binary (Yes/No)	Multiclass (Yes/No/Maybe)
Dataset	Single dataset	Merged datasets for comprehensive feature set
Performance Accuracy	~85-90%	97% (Neural Network)
Relevance to Local Population	Global datasets	Evaluated on Pakistani datasets

Results





Accuracy : 97%

Technology Used

Conclusion

AI CardioCare offers a transformative solution for the early detection and diagnosis of heart disease. By leveraging AI and deep learning, the system provides accurate risk assessments, enabling timely intervention and improving patient outcomes. The data used for this project was collected through visits to various hospitals, ensuring a diverse and comprehensive dataset. This project not only enhances healthcare accessibility but also supports the global goal of reducing healthcare inequalities, paving the way for more efficient and proactive heart disease management