

Revolutionizing Liver Care: Predicting Liver Cirrhosis Using Advanced Machine Learning Techniques

Overview

This project aims to harness the power of advanced machine learning algorithms to predict liver cirrhosis at an early stage. Early detection is key to improving patient outcomes, and this system assists healthcare professionals in making informed decisions based on clinical and biochemical data.

Objective

To develop a machine learning model that accurately classifies patients as likely or unlikely to develop liver cirrhosis based on medical datasets.

Repository Structure

Document - Research papers, report PDF, and supporting documentation

Project files - Source code, notebooks, dataset, model scripts

Video demo - Demo video showcasing the functionality and results

Technologies Used

- Python
- Scikit-learn
- Pandas, NumPy
- Matplotlib / Seaborn (for visualization)
- Jupyter Notebook
- Streamlit / Flask (optional for UI)
- GitHub for version control

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Machine Learning Models Tested

- Logistic Regression
- Random Forest
- Support Vector Machine (SVM)
- XGBoost
- Neural Networks (optional based on project scope)

Dataset

- Sourced from [insert source if applicable]
- Includes patient demographic data and clinical indicators such as:
 - Total Bilirubin
 - Albumin
 - Alkaline Phosphatase
 - SGOT, SGPT
 - Prothrombin Time, etc.

Results

- Best performing model: [Insert Model Name]
- Accuracy: XX%
- F1 Score: XX
- ROC-AUC: XX

Video Demonstration

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A walkthrough of the application and model predictions is available in the Video demo folder.

Report

The complete project report is available in the Document folder:

Document/report.pdf

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Contact

For inquiries or collaboration, please reach out via GitHub Issues or [insert email if you want].

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