

Group Project Proposal for INTELLIGENT SYSTEMS

TITLE: Project Description: Comparison of Neuro-Fuzzy Inference Models and Neural Networks on Heart Attack Analysis & Prediction Dataset

Group:

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Objectives:

High-stakes medical applications, such as heart attack prediction, require not only accurate models but also interpretability: clinicians need to understand the reasoning behind a model's predictions to build trust and ensure it aligns with medical knowledge. Unfortunately, traditional deep learning models, while delivering good results, act as "black boxes", making it difficult to interpret how they reach their decision.

This project aims to compare two distinct types of machine learning models: fuzzy inference systems (FIS) and standard deep learning models regarding both performance and interpretability.

The dataset used for this project, available on Kaggle under the title "Heart Attack Analysis & Prediction Dataset", consists of 303 records of 14 clinical features like age, sex, etc. The target variable is binary, indicating whether the patient is at risk of a heart attack or not. It can be found under the following link:

<https://www.kaggle.com/datasets/rashikrahmanpritom/heart-attack-analysis-prediction-dataset>