

Heart Failure Prediction Dataset

Cardiovascular diseases (CVDs) are a leading global cause of death, primarily due to risks such as strokes and heart attacks. Therefore, effective management and early detection are crucial, especially for individuals with prior cardiovascular risk. This is where machine learning models prove invaluable, assisting in predicting and assessing the likelihood of encountering heart diseases.

The "*heart.csv*" dataset was specifically designed to enable the development of such models. It covers a wide range of important features that provides a clear view of a patient's cardiovascular health, helping in determining the presence of heart diseases. These features include:

- **Age**
- **Sex**
- **Types of chest pain:**
 - **Atypical Angina (ATA):** Chest pain that doesn't fit the typical angina.
 - **Typical Angina (TA):** Classic chest pain caused by reduced heart blood flow.
 - **Non-anginal pain (NAP):** Chest pain unrelated to the heart.
 - **Asymptomatic (ASY):** The patient experiences no chest pain symptoms.
- **Resting blood pressure:** (A normal systolic pressure is around 132 mm Hg).
- **Cholesterol levels:** (Normal levels are typically around 244 mg/dl).
- **Fasting Blood sugar levels:** (Normal is considered around 120 mg/dl).
- **Resting Electrocardiogram:**
 - **ST:** Indicates an abnormality in the ST-T wave.
 - **LVH:** Suggests an enlargement of the heart's left ventricle.
 - **Normal:** Signifies that the ECG is within healthy limits.
- **Maximum heart rate activity:** (Typically ranging between 60-202).
- **Exercise-induced angina:** Chest pain brought on by physical exertion.
- **Old peak:** The ST depression observed during exercise relative to rest.
- **ST segment analysis:** Describes the slope of the peak exercise ST segment with three values:
 - **Up:** Slopes upwards.
 - **Flat:** Remains level.
 - **Down:** Slopes downwards.

This dataset stands out due to its unique combination, as it was created by combining multiple independent heart disease datasets, which results in a more diverse set of data, improving its utility for research and model development.