

# Heart Disease Detection

Using Machine Learning for Early  
Detection of a Deadly Disease

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# The Problem

Cardiovascular (Heart) Disease is the number 1 cause of death according to the CDC

Early detection can help save patients with the disease

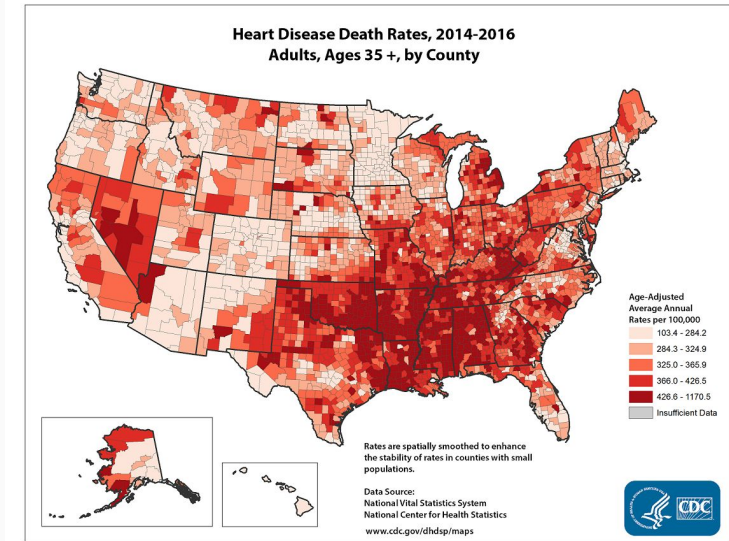


Figure 1: Heart Disease Death Rates (CDC)

# The Solution

Machine learning will aid in early detection by assessing how at risk a patient is for heart disease

# The Data

Patient statistics were input into the algorithm as depicted

- Age
- Sex
- Chest pain type
- Resting blood pressure
- Cholesterol
- Fasting blood sugar
- Resting electrocardiogram results
- Maximum heart rate achieved
- Exercise-induced angina

# The Sources

Datasets from Europe and the USA were collected

- Cleveland
  - 303 observations
- Hungary
  - 294 observations
- Switzerland
  - 123 observations
- Long Beach, VA
  - 200 observations

Stalag (Heart) data set: 270 observations

TOTAL: 1190 observations

Hungarian Institute of Cardiology. Budapest: Andras Janosi, M.D.

University Hospital, Zurich, Switzerland: William Steinbrunn, M.D.

University Hospital, Basel, Switzerland: Matthias Pfisterer, M.D.

V.A. Medical Center, Long Beach and Cleveland Clinic Foundation: Robert Detrano, M.D., Ph.D.

# GitHub Demonstration

An aerial photograph of a city skyline at dusk. The sky is a mix of dark blue and orange, with scattered clouds. The city is densely packed with skyscrapers. The Empire State Building is prominently featured in the center, with its top section illuminated in red and green. Other buildings are lit up with various colors, and the city lights are visible in the background.

# Results in Accuracy:

92% in detecting not at risk

86% in detecting heart disease

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