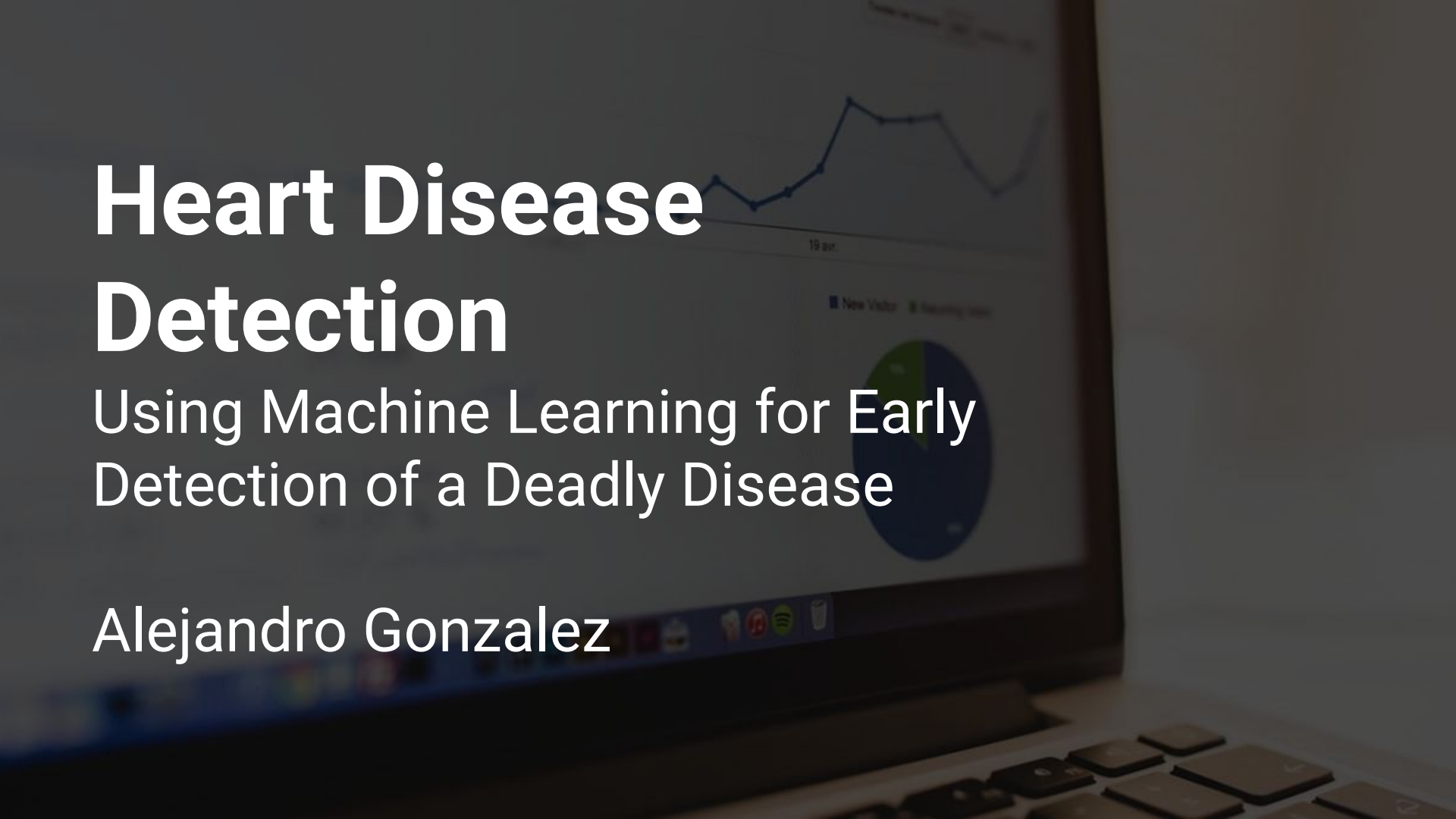


Heart Disease Detection

Using Machine Learning for Early Detection of a Deadly Disease

Alejandro Gonzalez

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

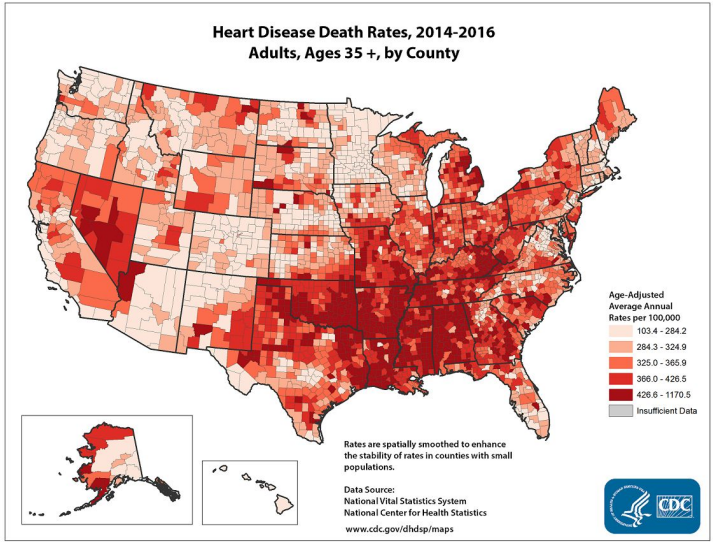


Figure 1: Heart Disease Death Rates (CDC)

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.

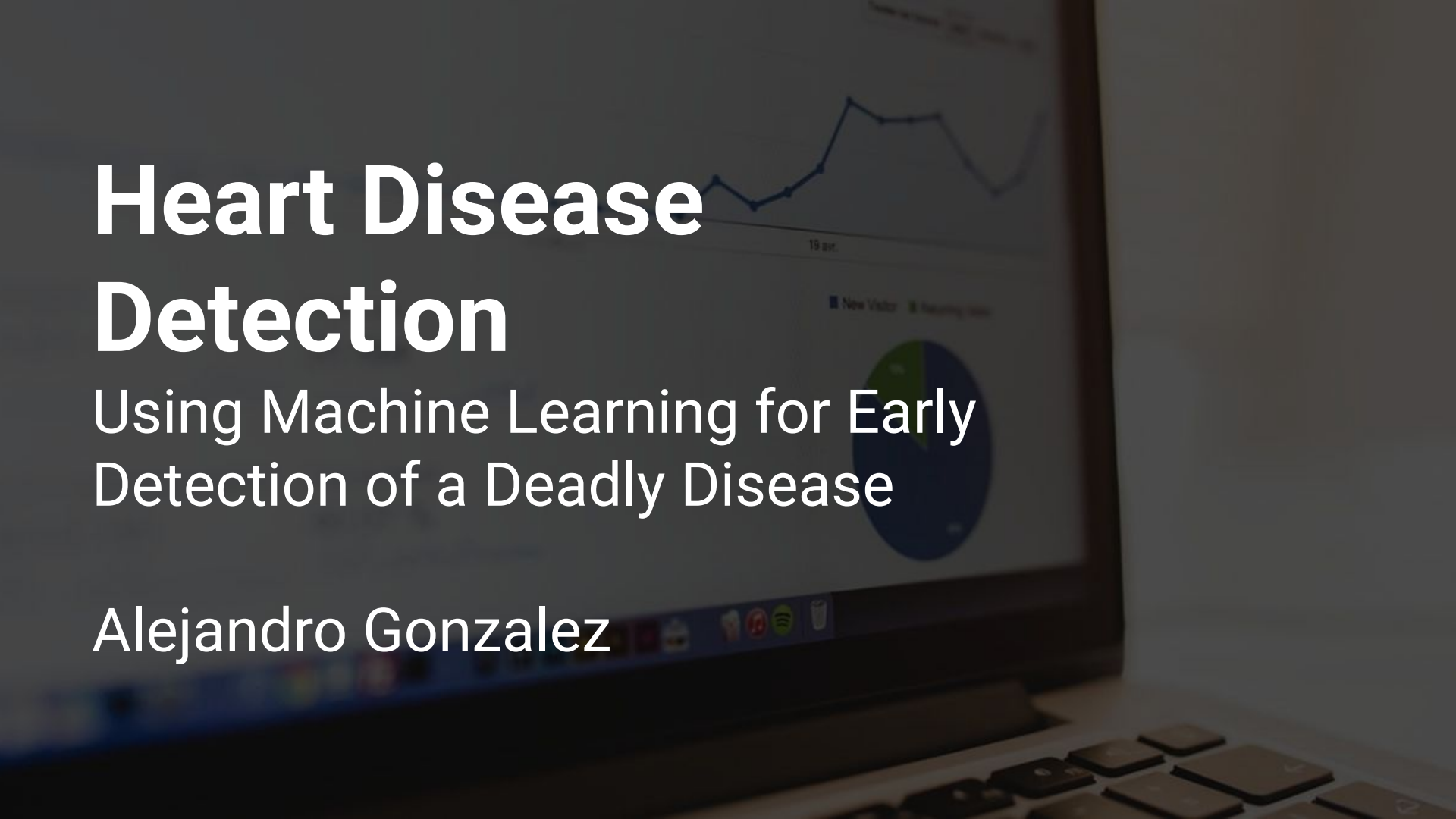
V.A. Medical Center, Long Beach and Cleveland Clinic Foundation: Robert Detrano, M.D., Ph.D.

GitHub Demonstration

Results in Accuracy:

92% in detecting not at risk

86% in detecting heart disease



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