ECS 171 One Page Writeup

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April 10, 2021

Group 16 Goals:

The overall purpose of this project is to create a website that can assist medical professionals in diagnosing whether a patient is at risk for a heart disease. This problem is interesting because it would give doctors a lot of extra information and help when making decisions on how to treat their patients. Further, a few past studies on the matter have shown that in some cases artificial intelligence programs have superior judgement when making these decisions then medical professionals do [2]. While this project focuses only on heart disease, future iterations of this project conducted by us or others will more than likely expand on this idea to encompass a wide variety of possible ailments.

Dataset:

The data for this project originally comes from The UCI Machine Learning Repository and contains data donated from four different sources [1]. In general, the 14 variables we will focus on include general background information on 303 patients, various cardiac health measurements taken from the patients, and the presence or absence of heart disease [1]. From this data, we should be able to predict whether a patient is at risk of heart disease or not. In general, we will clean the data, removing rows with missing values, and split it into a test set and training set. We will download the dataset directly from the kaggle website, which has some more information on this UCI dataset [1].

Deliverables:

We're planning to create a web application for purposes of allowing a user to interact with our created model. The idea is that the web application will act as an interface where a medical professional can enter in prompted information such as patient's age, sex, cholestorol and more, and our website will output a prediction as to whether or not the patient is at risk for heart disease. We also need an outline that describes our data, problem, and solution in more detail than is covered here. This will be worked on concurrently with the development of the webapp and model, but ultimately will be the last part finished so we can add the conclusion derived from the finished webapp and model.

Action Plan:

1. Assign roles and responsibilities – 4/12
2. Clean/format the data (EDA) – 4/16
3. Frontend – 4/23
4. Devise algorithm – 4/23
5. Make an API together and start coding – 4/23
6. Testing/Test Cases – 5/17
7. Final Outline – 5/26
8. Make project public on Github, and a video demo – 5/26

Citations for Data

1. Main dataset: https://www.kaggle.com/ronitf/heart-disease-uci Sandhu, S., Guppy, K., Lee, S.,Froelicher, V. (1989). International
2. Lysaght, T., Lim, H.Y., Xafis, V. et al. AI-Assisted Decision-making in Healthcare. ABR 11, 299–314 (2019). https://doi.org/10.1007/s41649-019-00096-0