



Python Homework Simple Neural Processing WEEK 10



Data Science
Academy

HOMework

Dataset: heart_disease_dataset.csv

Description: You must train models on the "Cleveland Heart Disease" dataset in order to predict the risk of heart disease in patients. This dataset contains 303 instances and each instance is described by 14 attributes. Each of these attributes are physiological measurements. They are presented in table below:

Attributes	Description
age	The person's age in years
sex	The person's sex (1 = male, 0 = female)
Chest main type	The chest pain experienced (Value 1 : typical angina, Value 2 : atypical angina, Value 3 : non-anginal pain, Value 4 : asymptomatic)
Resting blood pressure	The person's resting blood pressure (mm Hg on admission to the hospital)
cholesterol	The person's cholesterol measurement in mg/dl
Fasting blood sugar	The person's fasting blood sugar (> 120 mg/dl, 1 = true ; 0 = false)
Rest ecg	Resting electrocardiographic measurement (0 = normal, 1 = having ST-T wave abnormality, 2 = showing probable or definite left ventricular hypertrophy by Estes' criteria)
Max heart rate achieved	The person's maximum heart rate achieved
Exercise induced angina	Exercise induced angina (1 = yes ; 0 = no)
St depression	ST depression induced by exercise relative to rest ('ST' relates to positions on the ECG plot)
St slope	the slope of the peak exercise ST segment (Value 1 : upsloping, Value 2 : flat, Value 3 : downsloping)
Num major blood vessels	The number of major vessels (0-3)
thalassemia	A blood disorder called thalassemia (3 = normal ; 6 = fixed defect ; 7 = reversable defect)
target	Diagnosis of a heart disease (0 = no, 1 = yes)



Questions:

1. What are the dimensions of the matrices you will use to represent your model (inputs, parameters, and outputs)? How will you integrate the concept of mini-batch training?
2. How to check whether or not you should keep training your model?

Complete Homework with following steps:

1. As a first step, use MLP with 2 hidden layers containing 6 and 4 units respectively. Do not use pytorch, keras, tensorflow or any other libraries. You should create NN from scratch.
2. Name your final homework Script as "Heart_diseases".
3. Create repository named "heart_diseases_2_hidden" in your Github account and push your homework Script to this repository.
4. Fork other users' repositories, make pull requests (at least one, making three pull requests is desirable).

Note: Your pull requests should either fix problems or add new features.