Hepatic Fibrosis Degree Prediction
Web Application Guide

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1. Data and Results

In the following table, you can observe the variables required to make predictions in the web application.

The results of the predictions with a 99% precision could be four: **F1** (Portal fibrosis without septa), **F2** (Portal fibrosis with some septa), **F3** (Numerous septa without cirrhosis) and **F4** (Cirrhosis). Along with the Prediction results, the results can also be displayed graphically, comparing them with the data used to train the predictive model.

Table 2: Prediction Results

Results	Description
F1	Portal fibrosis without septa
F2	Portal fibrosis with some septa
F3	Numerous septa without cirrhosis
F4	Cirrhosis

Please note that these results are not a final diagnosis but a support tool for specialists.

2. Types of prediction

Different types of predictions and ways to upload the data are offered. However, in all cases all variables must be provided and presented in the correct format to make the prediction.

Table 1: Variables for Predictions

Variable	Description	Type	Range.Levels
ID	Identification code of the patient	All types	-
Age	Age of the patient (years)	Numeric	[1,130]
Gender	Gender of the patient	Categorical	Female/Male
WBC	White Blood Cells (units/ L)	Numeric	Bigger than 0
RBC	Red Blood Cells (units/ L)	Numeric	Bigger than 0
Plat	Platelet (units/ L)	Numeric	Bigger than 0
AST.1	Aspartate Aminotransferase inicial (units/L)	Numeric	Bigger than 0
ALT.1	Alamine Aminotransferase initial (units/L)	Numeric	Bigger than 0
RNA.Base	Ribonucleic Acid Base (U)	Numeric	Bigger than 0

Table 3: Types of Predictions

Prediction	Description	Upload.data
Unique	Prediction of a single patient	CSV/Form
Multiple	Prediction of more than one patient	CSV file

3. Predictive model

To make the predictions, we use a classification model* created with sequential neural network algorithm and trained with the HCV-Egy-Data (Hepatitis C Virus (HCV) for Egyptian patients) data set was obtained from the UCI machine learning repository. The performance of the model obtained during its training was:

Table 4: Results

Accuracy	Error.rate	kappa	Sensibility	Specificity	Precision	Recall	F1.score
0.995	0.005	0.994	0.995	0.998	0.995	0.995	0.995

- You could obtain more information about how the model was created and the data used to train it in the paper of Vaca Tello, A (2023) called "Desarrollo de aplicación web para diagnóstico no invasivo de fibrosis hepática utilizando técnicas de aprendizaje automático".