Manual: Regression Model Explainer

1. Create a Model

- Press Button “Create Model” on the main screen

  or

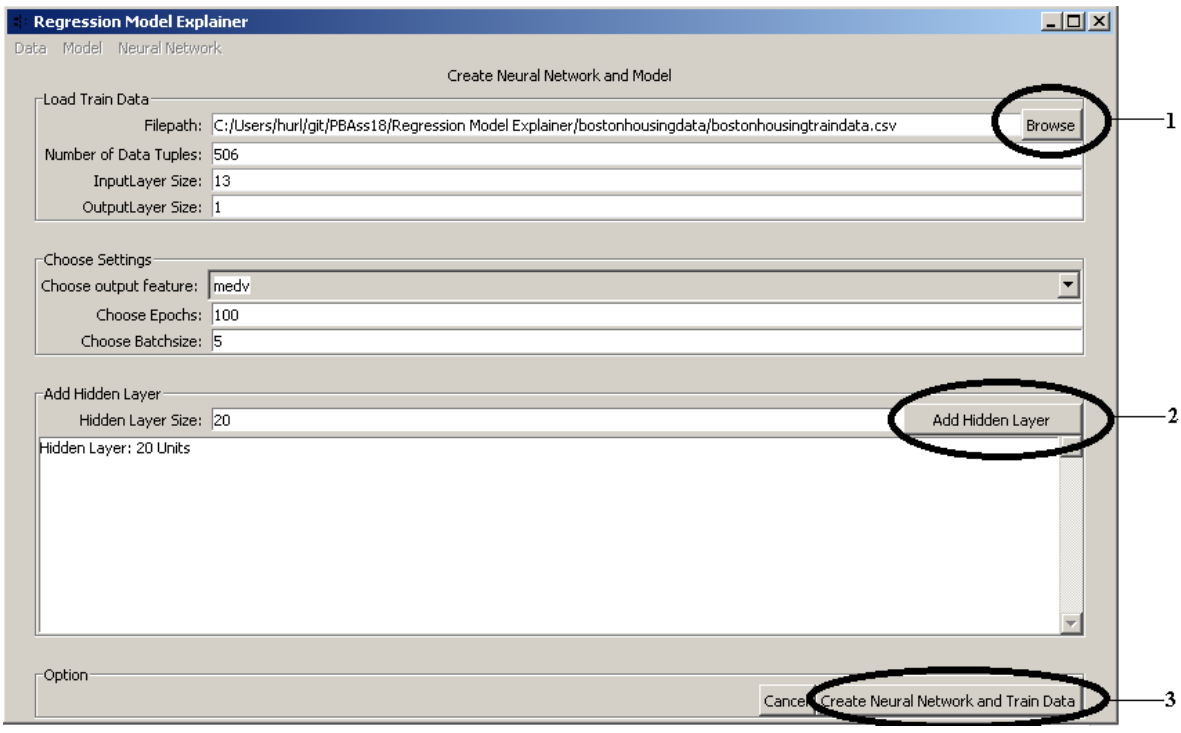
  Go to: Neural Network->Create/Train Neural Network

Set Model specification and train:

- Press Browse (1) and set a train data set

  (e.g. Regression Model Explainer\bostonhousingdata\bostonhousingtraindata.csv)

- Choose output feature in dropdown box (e.g. medv)
- Choose Epochs (e.g. 100)
- Choose Batchsize (e.g. 5)
- Add Hidden Layer: input positive number in the field (e.g. 20) and press Button Add Hidden Layer (2)
- Press Create Neural Network and Train Data Button (3)
- After this the model gets trained this can take some minutes depending on the data and specification, then the train information gets shown with pressing ok you get back to the main screen.



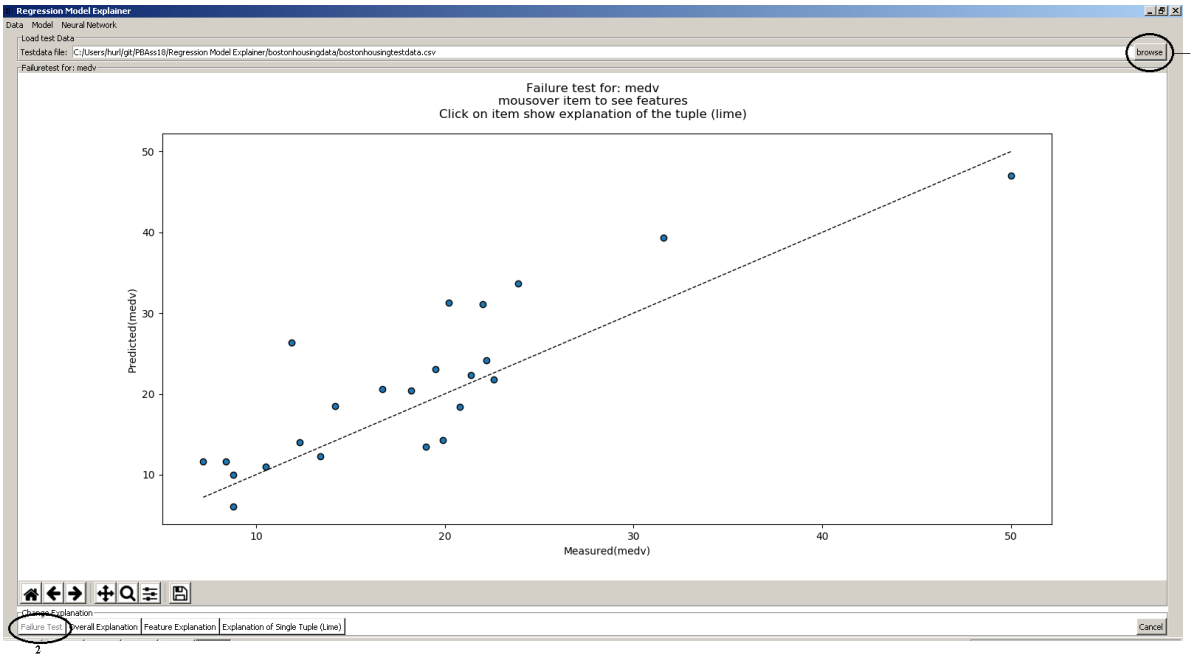
2. Explain the Model

If a model is trained:

- Press Button “Explain Model” on the main screen
  Or
  Go to: Model ->Explanation

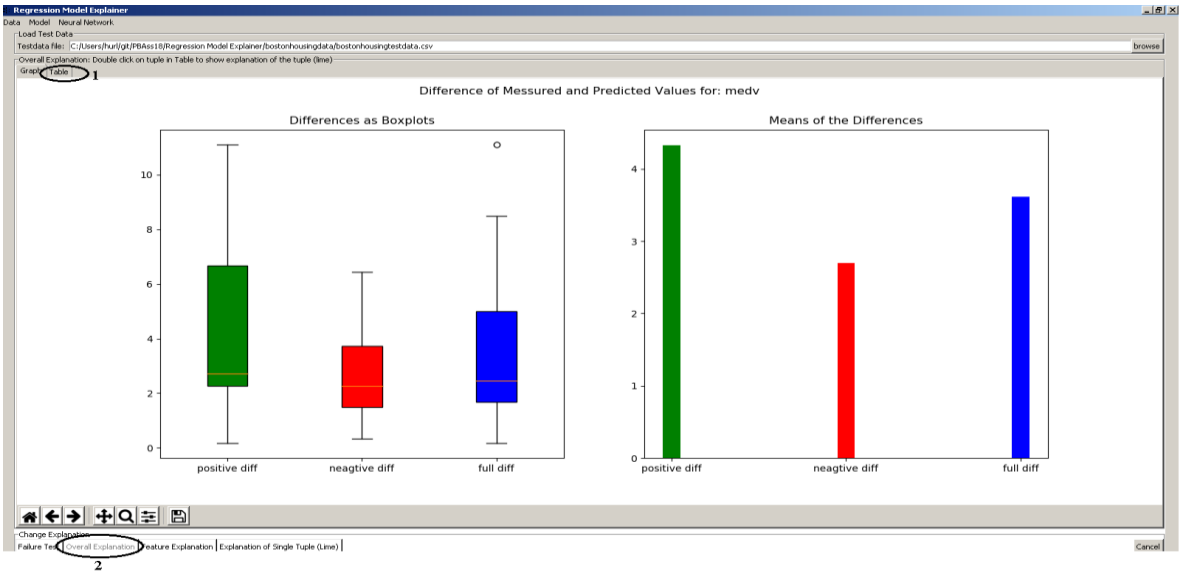
Failure Test:

- The Failure Test Button should be chosen (2)
- Press Browse Button (1) and load test data
- (e.g. Regression Model Explainer\bostonhousingdata\bostonhousingtestdata.csv)
  Test Data must fit to the model
  You only must choose the data once by switching between the explanations but you can change them every time
- On mouseover over an item the input features of the item get shown
- By clicking on an item, the screen changes to “Explanation of Single Tuple (Lime)” and it shows the explanation of this item



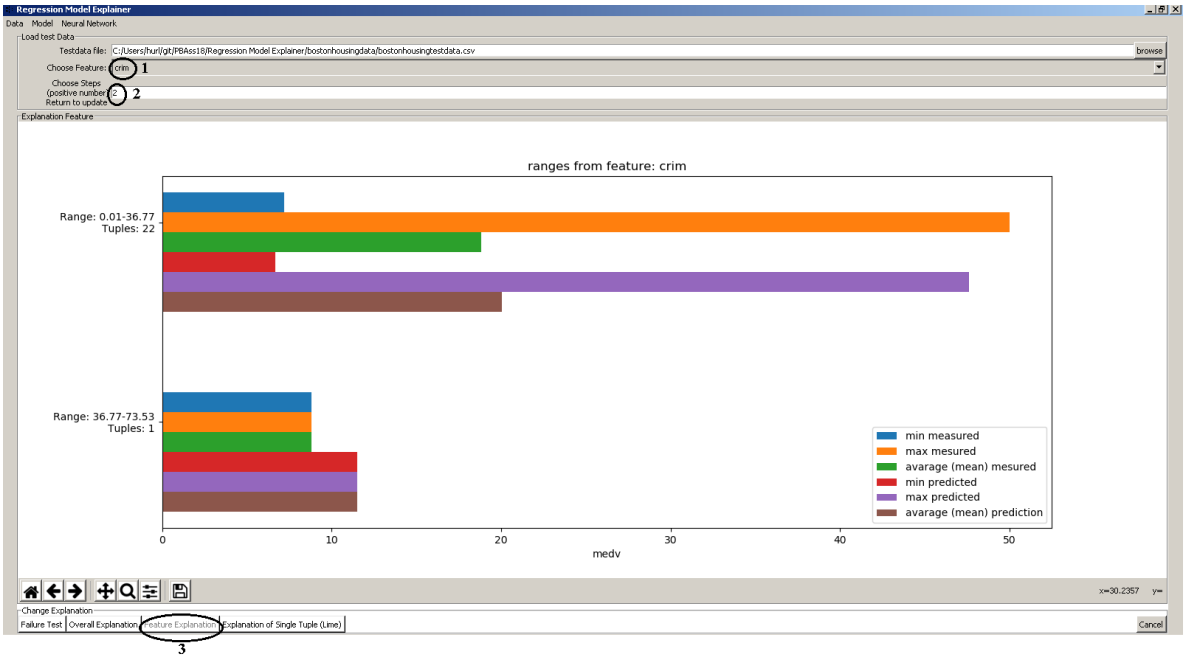
Overall Explanation:

- The Overall Explanation Button should be chosen (2)
- You can switch between graph and table (1)
- In the table by double clicking on a row it changes to “Explanation of Single Tuple (Lime)” and shows the explanation of the tuple



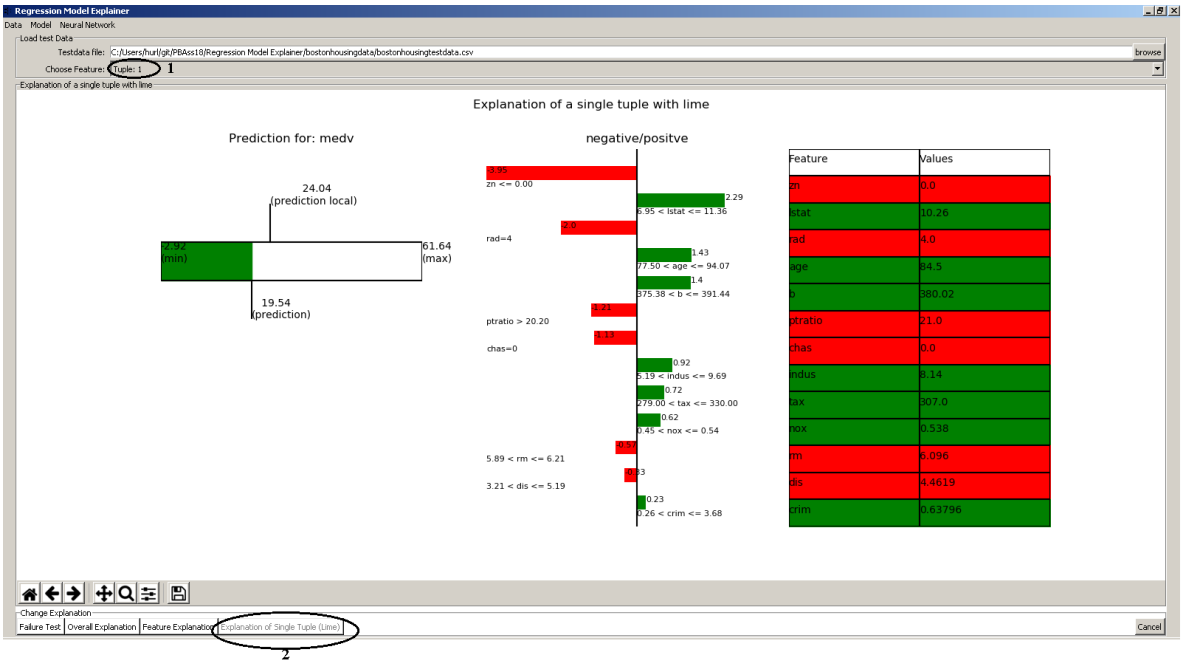
Feature Explanation:

- The Feature Explanation Button (3) should be chosen
- The output feature can be changed at the Choose Feature dropdown box (1)
- The number of splits can be chosen with choose steps (2), fill in a positive number and press enter to update



Explanation of Single Tuple (Lime):

- The Explanation of Single Tuple (Lime) Button should be chosen (2)
- The tuple can be changed at choose feature dropdown box (1)



3. Neural Network Tests

Existing model got reset with the following tests!

Performance Test:

- Go to: Neural Network ->Neural Network Performance test
- Choose test data and fill fields and add hidden layer like in “Set Model specification and train” under “Create a Model” topic.
- Press Start Performance Test button
- The performance test takes a few moments, after this press the show Result Button to show the performance test graph

Evaluate Neural Network with KerasRegressor(10-fold cross validation):

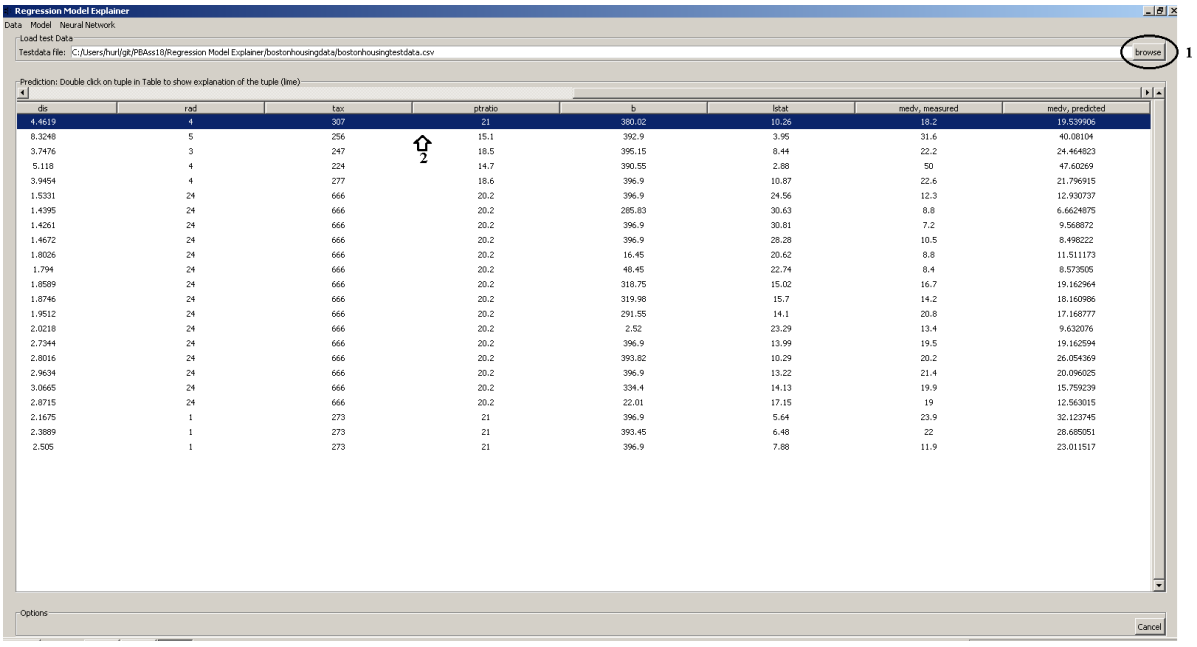
- Go to: Neural Network -> Evaluate Neural Network with KerasRegressor(10-fold cross validation)
- Choose test data and fill fields and add hidden layer like in “Set Model specification and train” under “Create a Model” topic.
- Press Evaluate Neural Network button
- The test takes a few moments (trains 10 times with the data) and show the means of the MSE and the RMSE of this test.

4. Predictions:

A model must be created or loaded!

Predict data set:

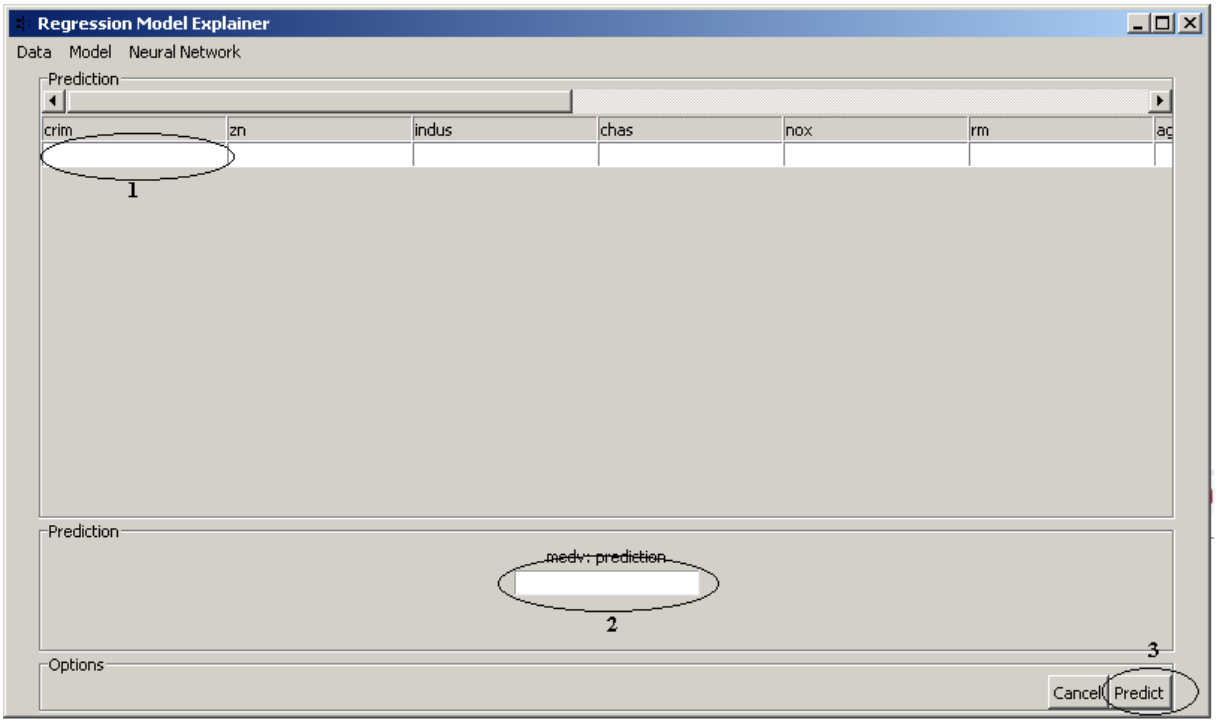
- Go to: Neural Network -> Predict TestData
- Press browse (1) to set test data
  (e.g. Regression Model Explainer\bostonhousingdata\bostonhousingtestdata.csv)
- Double click on a row (2) to change the view to “Explanation of Single Tuple (Lime)” and shows the explanation of the row



Predict single tuple:

- Go to: Neural Network -> Predict
- Input values in the fields (1)
- Press Predict Button (3)

- Prediction is shown in (2)



5. Load/Save/Show Model Information:

Load Model:

- If no model is loaded press the button “Load Model” on the main screen
  Or
  Go to: Data->Load Model
- Choose a Model file and load it
- After this the model information gets shown
- Overwrites the existing model

Save Model:

- Model must be created or loaded
- Go to: Data ->Save Model
- Choose a path and name and press ok
- After this the model information gets shown

Show Model Information:

- Model must be created or loaded
- Choose “Show Model Information” on the main screen
  Or
  Go to: Model -> Show Model Information
- Model Information gets shown