Weka App Description and Requirements

Antonio Lara Gutiérrez

`antoniolara2000@uma.es`
Universidad de Málaga.

1.   Description

The result app of this development will be used by students in order to learn more about using Weka API in Java language. This app will be developed using Java along with Java Swing (graphic view) and Weka (computation part).

The student should have different options to introduce a function with a variable, or a list of prefixed functions to try, along with other input variables such as noise level, noise type (gaussian or uniform), hidden layer size, number of training/validation samples...

The app will then compute all the inputs, and invoke Weka API in order to start MLP (MultiLayer Perceptron) regression training using a previously generated training set, and showing the student the result of the different steps done by the MLP and the computed regression.

2.   Requirements

Note: FR means 'Functional Requirement' and NFR means 'Non-Functional Requirement

- FR-1: The result app will have a main page in which main information and results should be clearly and easily visualized.
- FR-2: The result app will have a dialog box to introduce all secoundary input options.
- FR-3: The student should introduce a function with a variable x or select a prefixed function showed in a combo box.
- FR-4: The student should be able to select different parameters to modify computed result of the introduced function. These parameters are: noise leve, noise type, hidden layer size, number of training/validading samples, type of computation (complete or step by step), number of steps and learning type.
- FR-5: The student, once all input data is introduced, should click a button and the computation should start.
- FR-6: The app should be able to check if there is anny error in the inputs, showing a message with the information to correct.

- FR-7: The result app should compute a training and validation set once the student has introduced all inputs.
- FR-8: The result app should show in the main page a result of the approximation made by the MLP and the introduced function by the student (step by step or final computation).
- FR-9: If step by step computation is selected, the result app will show information about the mean square error in training and validating set.
- NFR-1: The result app shoul be compiled in an autoxecuteable JAR program, in order to avoid future dependencies errors.