Assignment No. 5 Rubric

EECS 658

Introduction to Machine Learning

Due: 11:59 PM, Thursday, October 26, 2023

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# Point Breakdown

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| ***Graded Value*** | ***Points Possible*** | ***Criteria*** |
|  | 1 | Name of the zip file: FirstnameLastname\_Assignment5 (with your first and last name) Files in other formats (e.g., .tar will not be graded). |
|  | 1 | Name of the Assignment folder within the zip file: FirstnameLastname\_Assignment5 |
|  | 1 | Copy of Rubric 5.docx with your name and ID filled out |
|  | 1 | Python source code. |
|  | 1 | Screen print showing the successful execution of your Python source code. |
|  | 7 | For Part 1, the Accuracy score matches the Confusion Matrix. |
|  | 7 | For Part 1, the Class Balanced Accuracy score matches the Confusion Matrix. |
|  | 7 | For Part 1, the Balanced Accuracy score matches the Confusion Matrix. |
|  | 7 | For Part 1, the code printed out the balanced accuracy score calculated by the scikit-learn function balanced\_accuracy\_score |
|  | 7 | For the random oversampling method of Part 2, the code used the correct imbalanced-learn toolbox function and printed out a Confusion Matrix and correct Accuracy score. |
|  | 7 | For the SMOTE oversampling method of Part 2, the code used the correct imbalanced-learn toolbox function and printed out a Confusion Matrix and correct Accuracy score. |
|  | 7 | For the ADASYN oversampling method of Part 2, the code used the correct imbalanced-learn toolbox function and printed out a Confusion Matrix and correct Accuracy score. |
|  | 7 | For the random undersampling method of Part 3, the code used the correct imbalanced-learn toolbox function and printed out a Confusion Matrix and correct Accuracy score. |
|  | 7 | For the Cluster undersampling method of Part 3, the code used the correct imbalanced-learn toolbox function and printed out a Confusion Matrix and correct Accuracy score. |
|  | 7 | For the Tomek links undersampling method of Part 3, the code used the correct imbalanced-learn toolbox function and printed out a Confusion Matrix and correct Accuracy score. |
|  | 25 | Software is adequately commented. |
|  | **100 pts** |  |

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| --- | --- | --- |
| **Rubric for Program Comments** | | |
| **Exceeds Expectations**  **(90-100%)** | **Meets Expectations**  **(80-89%)** | **Unsatisfactory**  **(0-79%)** |
| Software is adequately commented with prologue comments, comments summarizing major blocks of code, and comments on every line. | Prologue comments are present but missing some items or some major blocks of code are not commented or there are inadequate comments on each line. | Prologue comments are missing all together or there are no comments on major blocks of code or there are very few comments on each line. |

# Adequate Prologue Comments:

* Name of program contained in the file (e.g., EECS 658 Assignment 1)
* Brief description of the program, e.g.,
  + Check versions of Python & create ML “Hello World!” program
* Inputs (e.g., none, for a function, it would be the parameters passed to it)
* Output, e.g.,
  + Prints out the versions of Python, scipy, numpy, pandas, and sklearn
  + Prints out “Hello World!”
  + Prints out the overall accuracy of the classifier.
  + Prints out the confusion matrix.
  + Prints out the P, R, and F1 score for each of the 3 varieties of iris.
* All collaborators
* Other sources for the code ChatGPT, stackOverflow, etc.
* Author’s full name
* Creation date: The date you first create the file, i.e., the date you write this comment

# Adequate comments summarizing major blocks of code and comments on every line:

# Provide comments that explain what each line of code is doing.

# You may comment each line of code (e.g., using //) and/or provide a multi-line comment (e.g., using /\* and \*/) that explains what a group of lines does.

# Multi-line comments should be detailed enough that it is clear what each line of code is doing.

# Each block of code must indicate whether you authored the code, you obtained it from one of the sources listed in the prolog, or one of your collaborators authored the code, or if it was a combination of all of these.

# Collaboration and other sources for code:

# When you collaborate with other students or use other sources for the code (e.g., ChatGPT, stackOverflow):

# Your comments must be significantly different from your collaborators.

# More scrutiny will be applied to grading your comments in particular explaining the code “in your own words”, not the source’s comments (e.g., ChatGPT’s comments).

# Failure to identify collaborators or other sources of code will not only result in a 0 on the assignment but will be considered an act of Academic Misconduct.

# Students who violate conduct policies will be subject to severe penalties, up through and including dismissal from the School of Engineering.

# Grader Comments