Assignment No. 6 Rubric

EECS 658

Introduction to Machine Learning

Due: 11:59 PM, Thursday, November 14, 2024

**Student: Cody Duong**

**Student ID: 3050266**

**Point Breakdown**

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| ***Graded Value*** | ***Points Possible*** | ***Criteria*** |
|  | 1 | Name of the zip file: FirstnameLastname\_Assignment6 (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\_Assignment6 |
|  | 1 | Copy of Rubric 6.docx with your name and ID filled out |
|  | 1 | Python source code. |
|  | 1 | Screen print showing the successful execution of your Python source code. |
|  | 1 | Labels are printed between the outputs so it is clear what is being displayed. |
|  | 2 | Part 1: Reconstruction error vs. k is plotted correctly |
|  | 2 | Part 1: elbow\_k determined correctly |
|  | 2 | Part 1: Confusion matrix & accuracy correct for predict() with k = elbow\_k |
|  | 2 | Part 1: Confusion matrix & accuracy correct for predict() with k = 3 |
|  | 2 | Total for each of the two confusion matrices for Part 1 is 150. |
|  | 3 | Part 1: Question 1 answered correctly |
|  | 2 | Part 2: AIC vs. k is plotted correctly |
|  | 2 | Part 2: aic\_elbow\_k determined correctly |
|  | 2 | Part 2: BIC vs. k is plotted correctly |
|  | 2 | Part 2: bic\_elbow\_k determined correctly |
|  | 2 | Part 2: Confusion matrix & accuracy correct for predict() with k = aic\_elbow\_k |
|  | 2 | Part 2: Confusion matrix & accuracy correct for predict() with k = bic\_elbow\_k |
|  | 2 | Total for each of the two confusion matrices for Part 2 is 150. |
|  | 3 | Correct answer to Part 2, Question 2a. |
|  | 3 | Correct answer to Part 2, Question 2b. |
|  | 8 | Part 3: U-Matrix for grid sizes: 3x3, 7x7, 15x15, 25x25 |
|  | 8 | Part 3: Quantization error for grid sizes: 3x3, 7x7, 15x15, 25x25 |
|  | 8 | Part 3: Graph of quantization error vs grid sizes for grid sizes: 3x3, 7x7, 15x15, 25x25. |
|  | 4 | Correct answer to Part 3, Question 3a. |
|  | 4 | Correct answer to Part 3, Question 3b. |
|  | 4 | Correct answer to Part 3, Question 3c. |
|  | 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**