Neural Net Assignment Solutions (Due Nov 29)

The following are the code file that solve the assignment:

[NeuralNetAssignmentSolution.r](https://canvas.emory.edu/courses/76369/files/4963929?wrap=1)

[SpamNNWide.py](https://canvas.emory.edu/courses/76369/files/4963931?wrap=1)

[SpamNNWide.py](https://canvas.emory.edu/courses/76369/files/4963931?wrap=1)

The output from the Stepwise Logistic Regression is in the following page:

[Neural Net Assignment Stepwise Output](https://canvas.emory.edu/courses/76369/pages/neural-net-assignment-stepwise-output)

The requested plots are in the following pdf file:

[NeuralNetAssignmentPlots.pdf](https://canvas.emory.edu/courses/76369/files/4964150?wrap=1)[Preview the document](https://canvas.emory.edu/courses/76369/files/4964150?wrap=1)

The answers to the Google Forms questions are in the table below. Note that the results of the neural net fits are random because of the random starting weights that are generated. The table below contains my results. When I grade the assignment, I will determine reasonable ranges of answers from the answers submitted.

|  |  |  |
| --- | --- | --- |
| **Question** |  | **Answer** |
| Q1.1 |  | 42 |
| Q1.2 |  | (a) freq.table (b) freq.you (c) freq.650 (d) freq.pm |
| Q1.3 |  | 0.98 |
| Q2.1 |  | 7 |
| Q2.2 |  | 1 |
| Q2.3 |  | 0.989 |
| Q3.1 |  | 1181 |
| Q3.2 |  | 1181 |
| Q3.3 |  | 969 |
| Q3.4 |  | 0.953 |
| Q3.5 |  | 0.99 |
| Q4.1 |  | 317 |
| Q4.2 |  | 432 |
| Q4.3 |  | 0.955 |
| Q4.4 |  | 0.986 |
| Q5.1 |  | (c) The wide, shallow neural net |
| Q5.2 |  | The wide shallow neural net had the best AUC on the validation data of all of the models. |
| Q5.3 |  | 0.976 |
| Q5.4 |  | (c)  test data |
| Q5.5 |  | (d) It is uncontaminated by training or model selection bias. |