**CSCE 623: Machine Learning**

**Spring 2019**

**HW1 GRADING/FEEDBACK WORKSHEET**

Due Monday, 16 Apr at 2359

Submit via Canvas

**(**This Homework is worth 5 points toward your course grade**)**

**Simple Linear Regression Exercise: Student Name: NEWLIN**

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| Course points earned | 4.9 |

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| Step | Step Evaluation Criteria | Available points | Student performance feedback | Student Score |
| 1a | Load data | 1 | Achieved | 1 |
| 1b | Handle missing data | 1 |  | 1 |
| 2a,b,c | Explore the data: Statistics, histogram, pairings | 4 | Several typos/spelling errors | 3 |
| 3 | Scatterplot hp vs. MPG w/ axis labels. Report Eyeball Estimate of *β*1 | 2 |  | 2 |
| 4 | Make vector of possible *β*1s | 2 |  | 2 |
| 5 | Make cost function for RSS | 4 |  | 4 |
| 6 | Line plot *β*1 vs. Cost w axis labels | 4 |  | 4 |
| 7 | Discussion: shape of plot, how to find best *β*1. Pick best *β*1 and explain if diff from eyeball est. | 3 |  | 3 |
| 8 | Display red linear regression line on scatterplot | 4 |  | 4 |
| 9 | Build computeBetas function for Closed form eq for coeff estimation | 4 |  | 4 |
| 10 | Execute code, for closed form | 2 |  | 2 |
| 11 | compare *β*0 & *β*1 with prev & discuss | 3 |  | 3 |
| 12 | Plot closed form green regression line on scatterplot | 4 |  | 4 |
| 13 | Fit sklearn linear model & report coefficients, MSE & explained variance | 4 |  | 4 |
| 14 | Display sklearn model black line on hp vs. MPG | 4 |  | 4 |
| 15 | Explore residuals  -Compute residuals & scatterplot  -Describe plot trends and improvement plan | 4 |  | 4 |
| Assignment points Earned |  | 50 |  | 49 |