Tutku Kılıçaslan

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ENGR 421

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HW #4

1. I imported the data given hw04.zip file. I divided data into two groups as training and test and get y values of test data into another matrix to use it later. I also implement parameters such as bin width, origin parameter and maximum value.
2. I created a data interval that I will use later to proceed with very small pace between the defined borders.
3. I created lower and upper bounds for the windows with the width of 0.37 given in the homework description.
4. I constructed a g(x) function for Regressogram by applying the function (8.24) in the book and using the training data. I used this function to estimate y values of each window.
5. I had the plot drawn for g(x).
6. I calculated the RMSE for the Regressogram and printed it.
7. I also constructed a g(x) function for Running Mean Smoother by applying the function (8.25) in the book and using training data. While applying this function, I did some calculations on the given function in the book. I realized that the Kernel function should turn to 1 if x is half more or less of the bin width than the data interval. I used this function to estimate the y value of each classes where the given x values belong.
8. I had the plot drawn for g(x) for Running Mean Smooter
9. I calculated the RMSE for the Running Mean Smoother and printed it.
10. I lastly constructed a g(x) function for Kernel Smooter by applying the function (8.26) in the book and using training data. While applying this function I used Gausian Kernel. I used this function to estimate the y value of each classes where the given x values belong.
11. I had the plot drawn for g(x) for Kernel Smoother
12. I calculated the RMSE for the Kernel Smoother and printed it.