### **Data Preprocessing**

**Code:**

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### **Fit and Test Models**

## KNN

**Code:**

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## Logistic Regression

**Code:**

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## SVM

**Code:**

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## Gaussian Naive Bayes

**Code:**

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### **Model Comparison/ Performance Evaluation**

**Code:**

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|  |
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**Output:**

| **KNN** |  |
| --- | --- |
| **Logistic Regression** |  |
| **SVM** |  |
| **Gaussian Naive Bayes** |  |

### 

### **Conclusion**

Present your findings or summary from your work

#provide visualisations

| **Code:** |
| --- |

| **Output:** |
| --- |
| **Discussion:**   * KNN has the lowest MSE and RMSE among all models, indicating better prediction accuracy and smaller prediction errors. However, its R2 score is slightly negative, suggesting a poor fit to the data. The negative SNR indicates the noise is much higher than the signal. * Logistic Regression shows slightly higher MSE and RMSE compared to KNN, with a negative R2 score and negative SNR. It seems to have a similar performance trend to KNN but with slightly worse results. * SVM has the highest MSE, RMSE, and negative R2 score, indicating relatively poor performance. The undefined SNR suggests that the model's predictions and actual values do not match. * Gaussian Naive Bayes has similar MSE and RMSE to Logistic Regression, but its R2 score is better. The positive SNR suggests that the signal is more pronounced compared to the noise.   From this evaluation, it appears that **Gaussian Naive Bayes has the relatively best performance** among the models considered, with the lowest negative R2 score and a positive SNR. However, it's essential to interpret these results with caution and consider the specific context and requirements of your problem before making a final decision about model selection. |