

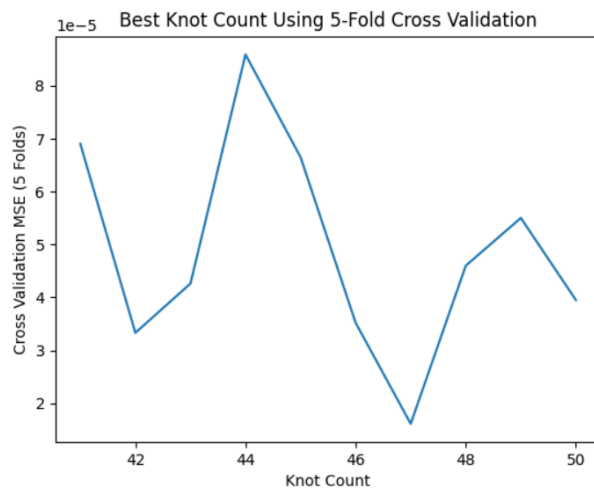
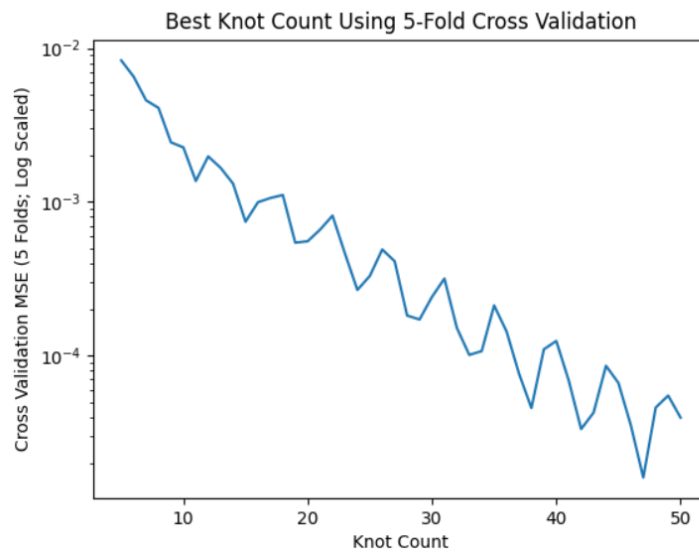
Topics High Dimensional Data Analytics

Mid-term Exam

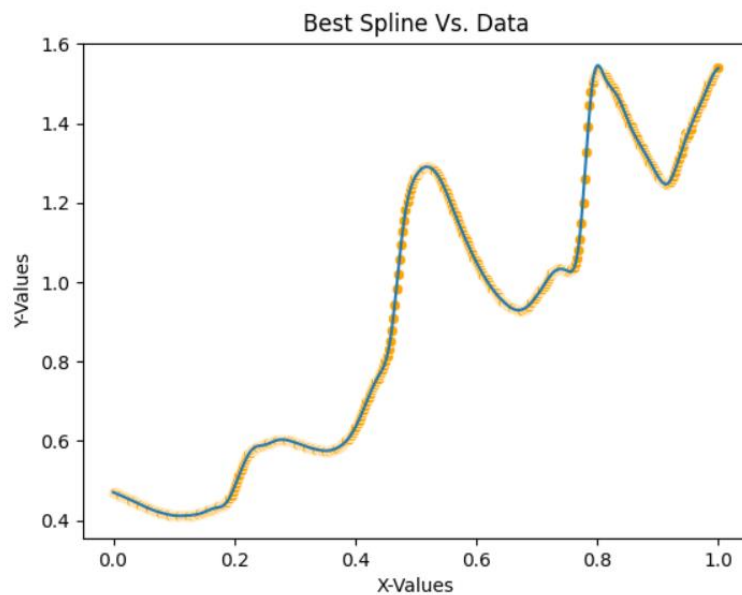
Question 1

Ian Dover

Part 1.



The best knot count is: 47.



Part 2.

```
The accuracy of the model is: 0.7205882352941176
```

```
The confusion matrix for the model is:
```

```
[[ 7  0  5  0]
 [ 0 20  1  0]
 [ 0  0 64  0]
 [ 2  0 30  7]]
```

```
The explained variance of the data after each added component:
[0.69646719 0.98185817 0.99330505 0.99707422 0.99847009]
```

```
The accuracy of the model with fPCA is: 0.6764705882352942
```

```
The confusion matrix for the model with fPCA is:
```

```
[[ 7  0  5  0]
 [ 0 20  1  0]
 [ 1  6 55  2]
 [ 2  2 25 10]]
```