Homework 4

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* 1. Shape

     Description automatically generated with medium confidence
  2. A picture containing chart

     Description automatically generated
  3. Gisette train and test misclassification errors

|  |  |  |  |
| --- | --- | --- | --- |
| Lambdas | Train Error | Test Error | Number of Features |
| 0.19 | 0.1213 | 0.123 | 10 |
| 0.133 | 0.0713 | 0.078 | 30 |
| 0.0877 | 0.0318 | 0.035 | 101 |
| 0.0529 | 0.0122 | 0.016 | 300 |
| 0.03854 | 0.0078 | 0.013 | 502 |

* 1. A picture containing shape

     Description automatically generated
  2. Chart, line chart

     Description automatically generated
  3. Dexter train and test misclassification errors

|  |  |  |  |
| --- | --- | --- | --- |
| Lambdas | Train Error | Test Error | Number of Features |
| 0.1427 | 0.1200 | 0.1700 | 11 |
| 0.098 | 0.0500 | 0.1067 | 30 |
| 0.0711 | 0.0167 | 0.0833 | 100 |
| 0.05227 | 0.0000 | 0.0600 | 299 |
| 0.0466 | 0.0000 | 0.0733 | 500 |

* 1. Chart

     Description automatically generated

A picture containing text, envelope, businesscard, screenshot

Description automatically generated

* 1. Madelon train and test misclassification errors

|  |  |  |  |
| --- | --- | --- | --- |
| Lambdas | Train Error | Test Error | Number of Features |
| 0.0298 | 0.386 | 0.3950 | 8 |
| 0.02435 | 0.357 | 0.4283 | 30 |
| 0.0173 | 0.328 | 0.4350 | 100 |
| 0.00737 | 0.2715 | 0.4283 | 302 |
| 4.00E-05 | 0.2585 | 0.4267 | 500 |