## **Complex functions in the real world**

Are such complex functions seen in most real world examples?

1. Consider predicting whether the Annual Income of person

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Age | hour/week | Education year | ……  More features | Income |
| 90 | 40 | 9 | 0 |
| 54 | 40 | 4 | 0 |
| 74 | 20 | 16 | 1 |
| 45 | 35 | 16 | 1 |

1. Plotting the data would give us a plot like so

|  |  |
| --- | --- |
| **Non Separated** | **Coloured for +ve and -ve** |
|  |  |

1. or
2. Consider predicting whether the person need to be diagnosed with a liver ailment or not

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Age | Albumin | T\_Bilirubin | ……  More features | Diagnosis |
| 65 | 3.3 | 0.7 | 0 |
| 62 | 3.2 | 10.9 | 0 |
| 20 | 4 | 1.1 | 1 |
| 84 | 3.2 | 0.7 | 1 |

1. Plotting the data gives us

|  |  |
| --- | --- |
| **Non Separated** | **Coloured for +ve and -ve** |
|  |  |

1. or
2. Here are a few more examples of complex decision boundaries

|  |  |
| --- | --- |
| **Non Separated** | **Separated** |
|  |  |
|  |  |

## 