# **Team Memebers (TeamID: 14)**

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| --- | --- |
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# **Bayes Classifer Models (Results)**

|  |  |
| --- | --- |
| Split (train:test) | Accuracy |
| 350:50 | **67.6%** |
| 300:100 | **68%** |
| 250:150 | **66.5%** |
| 200:200 | **70%** |
| 150:250 | **66%** |

# **k-nn Models (Results)**

|  |  |  |
| --- | --- | --- |
| K | Accuracy | |
| **Euclidean Distance** | **Cosine Similarity** |
| 1 | 59.6 | 60 |
| 3 | 57.8 | 60 |
| 5 | 56 | 60 |
| 11 | 55.4 | 60 |
| 27 | 55 | 40 |
| 39 | 55 | 60 |

# **MLP Models (Results)**

Mention all your models (trials) you did in the following table format.

**(At least 3 trials)**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **# Epochs** | **Input layer** | | **Hidden layers** | | **Output layer** | |
| 130 | # Neurons | 20 | # Hidden layers | 1 | # Neurons | 1 |
|  |  | | Hidden layer (1) | |  | |
|  |  | | # Neurons | 4 |  |  |
|  |  | | Hidden layer (2) | |  |  |
|  |  | | # Neurons |  |  |  |
|  |  | | .  .  .  . | |  |  |
|  |  | | Hidden layer (N) | |  |  |
|  |  | | # Neurons |  |  |  |
| **Learningrate** | 0.1 | | **Stopping Criteria** |  | **Accuracy** | 70.2% |

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **# Epochs** | **Input layer** | | **Hidden layers** | | **Output layer** | |
| 230 | # Neurons | 20 | # Hidden layers | 1 | # Neurons | 1 |
|  |  | | Hidden layer (1) | |  | |
|  |  | | # Neurons | 10 |  |  |
|  |  | | Hidden layer (2) | |  |  |
|  |  | | # Neurons |  |  |  |
|  |  | | .  .  .  . | |  |  |
|  |  | | Hidden layer (N) | |  |  |
|  |  | | # Neurons |  |  |  |
| **Learningrate** | 0.01 | | **Stopping Criteria** |  | **Accuracy** | 59.6% |

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **# Epochs** | **Input layer** | | **Hidden layers** | | **Output layer** | |
| 350 | # Neurons | 20 | # Hidden layers | 2 | # Neurons | 1 |
|  |  | | Hidden layer (1) | |  | |
|  |  | | # Neurons | 3 |  |  |
|  |  | | Hidden layer (2) | |  |  |
|  |  | | # Neurons | 4 |  |  |
|  |  | | .  .  .  . | |  |  |
|  |  | | Hidden layer (N) | |  |  |
|  |  | | # Neurons |  |  |  |
| **Learningrate** | 0.01 | | **Stopping Criteria** |  | **Accuracy** | 63.4% |

and so on for all tried models.

# **Conclusion**

This section should contain your conclusion about your work. So, mention why your best model has an accuracy that is greater than all other tried models? What are differences between your best model and all other tried models?)

*The neural networks model is the best model , because it is complex and a non-linear model which uses various hyper parameters to tune the accuracy accordingly. On the other hand , it failed to produce a high accuracy (70%).*

*Bayesian Model as well as the KNN tries to increase the accuracy but it will reach a level where the accuracy will not increase because they are simple models thus will work on simple data and simple problems.*

*Accuracy produced is also variable to the ratio of splitting of data , specifically in Neural Networks as the data gets shuffled on each run.*