**DMCT ASSIGNMENT**

Submitted by -

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Submitted to -

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Assignment 4:

Use the zoo dataset to design a neural network based classification system to predict the species of an animal. You should use a K-fold validation strategy to judge the overall accuracy of your system. Does the accuracy of the system change when you vary the number of folds to use.

Submission :

I’ve been able to make a neural network based classification system to predict the species of an animal with an accuracy score of **97.14%** using a **K=5** fold validation strategy to judge the overall accuracy of my system.

Yes, the accuracy of the system varies when we change the number of folds. It increases till K=5 and then decreases and stabilizes around 95.00-96.00% even if we increase the epochs parameter . The accuracy varies as such with K (No. of folds):

|  |  |
| --- | --- |
| No. of folds (K) | Accuracy (%) |
| 2 | 96.02 |
| 3 | 97.03 |
| 4 | 97.04 |
| 5 | 97.14 |
| 6 | 96.08 |
| 7 | 94.22 |
| 8 | 95.11 |
| 9 | 95.12 |
| 10 | 96.00 |
| 12 | 95.02 |
| 15 | 95.01 |
| 20 | 95.00 |

I’ve used ‘type’ attribute as label, Z-transformation method to normalize the data, a deep learning model with epochs=1000.

I’ve used accuracy and classification error as my performance metrics.

**Screenshots of design space and outputs:** 