Crow Intelligence Estimation using Artificial Intelligence

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ABSTRACT

The study about the Human – crow relationship is the purest form of affection and love. In India, crow population is estimated around 19 million. Penetrating into minds of the birds are still challenging and research has to be scaled more for human – crow conversation. Block Technology technique in Artificial intelligence and Machine Learning helps to read the mind of the crow makes improvising by extracting the features of the crows like eye balls movement, mouth movement, face value, left eye movement, right eye movement, mouth expand, mouth shrink. On extracting the pixel value of features as input, we have trained the system using Multilayer Perception, Radial Basis Function and Support Vector Model. The desired output is verified for accuracy by comparing the values with the standard statistical values as defined by the veterinary doctors. The proposed system implements voice Block Chain Technique and sensor technology with radio frequency identification (RFID) to detect the signal variations. The multilayer perception and radial basis function implemented in two different tools like SPSS and Just NN tool. The output of the both algorithm based on statistical measures compared and crypted using block chain technique. The concluded output is again converted into speech to human for better understanding. The proposed system estimates the crow intelligence using neural network techniques.

Keywords (
Human Crow Interaction, Block chain technique , Hash function, Support vector Model(SVM)

Introduction (Times New Roman, bold, 12)

Block Chain technology is the recent hot topic which is widespread in cloud for securing distributed data in cloud computing. The study about the human-bird interaction is very less and its an effort to insight the depth study of human-crow interaction in private secured manner by applying AI to read the feelings of the crow. Crow is the most inimitable bird which has unique quality of better interaction with human when compared to other birds. Percentile growth of crow is decreasing due to drastic increase of hunting and lack of guardianship. Artificial Intelligence is the machine sense from an environment and produce an action of the output. The term is applied in the intellectual approaches such as acting humanly, acting rationally, thinking humanly and thinking rationally. Learning, perception, reasoning and problem solving are the major research components in AI. Acting humanly is one kind of learning concept in AI. The study of human-level intelligence is another field of AI. The study of intelligence is nothing but learning, reasoning, knowledge representation, knowledge awakening and many more of human sense. The human work is done by the computer and it transmit the communication to human. There is no physical sense like human instead computer precepts from the environment. The psychological experiment in reality and combine together with computer model. The experimental investigation is feed into the computer from the human active and it is done through psychological way. Human may think right or wrong in day to day activities but computer rectify their own mistake and learn from the mistake. Thinking rationally is the expert is the expert who knows the laws of logic. Syllogism is a logic provide pattern for the correct conclusion. There are two types of logic. They are formal logic and informal logic. The formal logic is the historical development of logical notation in the program. The informal logic is logical notation in sense of computer that embedded with memory that contains description of thorough reading in a way of human logical thinking. This way is called logicism. The rational agent is something perceives from the middleman and act according to it. The laws of thought is sometime assumed from the rational agent to represent rational knowledge and rational reason. The study of AI approach that design rational hidden casual agent for the act of rationally and give solution for the given problem.

An hidden casual agent is the special feature of crow that perceives from an environment and react for the sense. A rational agent use the performance measure for the criteria how the world is like now and what action should do now An agent learn from the mistake and recognize the problem. Focussing on Human-crow interaction is must in order to avoid hackers of crow and to increase the growth rate of crow. The proposed system helps to know much about crow to help them and feed them in order to increase the growth rate of crow generation and understanding through

machine learning. Hash is core component but every block of bitcoin block chain is made up of three main components....

- o Read the crow features
- o Hash function
- o Block chain validation

Literature Review

Block Chain technique is the recent cloud computing topic implemented in AI. This new approach helps to read the intelligence of crow in AI with privately secured manner. The crow like veggies like cakes, savoury, proffered food. Normally it comes in groups. [1] The author discusses the crow features, its population its and proffered food and qualities [2] The author explains the birds as they offer non professionals, unparalled opportunities to contribute to scientific knowledge.[3]The study referred fraser darling effect to note the density of breeding birds, spread of laying and median date of egg-laying for social stimulation of reproduction.[5] The study proposes the pigeon interaction compared with machine learning neuron using signal processing.[6] The author proposes the intelligent system to study the behavior of birds. In this proposed system the scope extended further to read the mind of crow using intellectual learning.[7] The author clearly explained about the block chain technique applied in biometric analysis and review with various existing study. [8] The study reveals about the block chain technology implemented in agricultural sector for food production. [9] The study reviewed how block chain implemented successfully in economists and technology. [10] The study reveals how climatic changes affect financially in block chain technology. [11] The study reveals the security protocol on public and private stakeholders in blockchain technique. [12] The proposed system gives an insght about block chain technology in wildlife.

Data Collection

Dataset are extracted through life sciences links. Much research are not implemented in human crow interaction, in order to have a depth knowledge about the study, data extracted and six features values are extracted and implemented in JustNN& SPSS tools to compare and check with the accuracy of this study.

Table 1.Dataset samples implemented in JustNN& SPSS Tools

Face value	Mouth Expand	LeftEye	Expandeye	RightEye	Eyeexpansion
150	239	86	64	32	40
66	124	44	32	18	22
161	267	76	68	41	45
163	270	55	69	50	49
149	239	88	68	37	41
67	126	44	37	19	25
159	268	78	69	41	45
162	271	58	69	53	52
151	233	87	64	36	40
68	126	49	35	19	24

164	269	78	68	41	46
165	271	58	67	50	51
151	234	86	64	38	41
68	126	47	32	19	32
163	268	78	68	41	45
165	272	58	65	52	49
156	240	86	64	21	40
69	126	47	36	18	29
169	269	78	69	41	48
166	270	58	69	57	50
154	239	86	65	39	42
73	125	47	36	17	45
168	269	77	68	47	45
169	273	56	64	52	49
153	239	89	71	34	40

Hash Function implemented for Block chain Technique

Blockchain is a system of recording information in a way that makes it difficult or impossible to change, hack, or cheat the system. Hash function is the most important function used in block chain technique. Normally block chain technique is used for business analyses, but this study takes to another dimension where block techniques can also be implemented in human crow interaction.

Features	Face value	Mouth Expand	LeftEye	Expandeye	RightEye	Eyeexpansion
Hash Values	101	201	301	401	501	601

In the above table, hash function implemented separately for each feature from the dataset and the resultant value displayed.

Dataset samples implemented in JustNN

JustNN is a Neural Networks tool which helps to learn,train and test the features for the effective result. The six features from the dataset are extracted and implemented in JustNN tool to compare the performance and efficiency of the study in an effective manner.
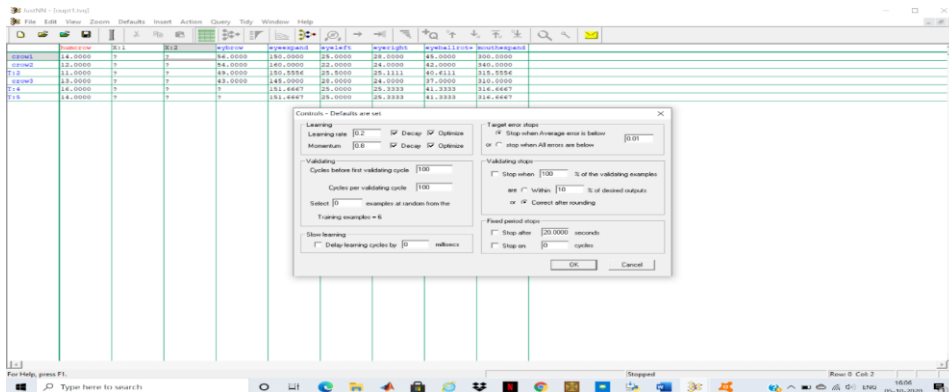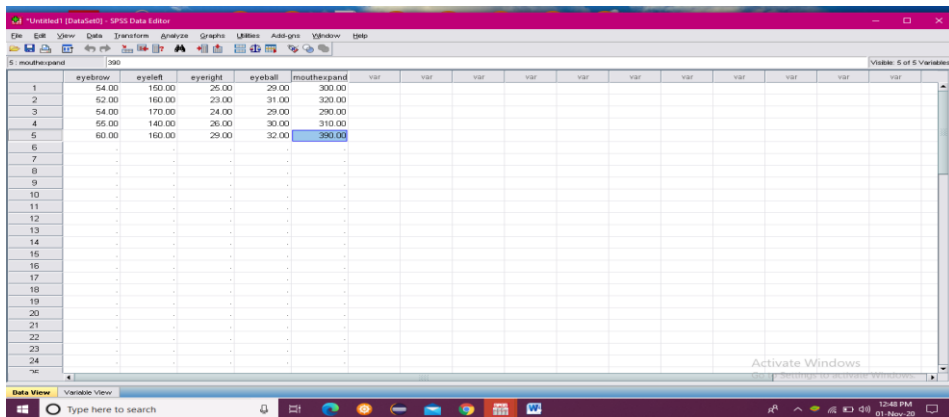
Figure 1. Performance Efficiency in JustNN

Dataset samples implemented in SPSS

SPSS is a statistical tool for social sciences which normally used to analyse data statistically, manipulate data using anova, manova. To check with the efficiency of this study and to analyse the prediction in statistical method the dataset is implemented in this tool.

Results and Discussions

Block chain technology using hash function helps to improve the human crow interaction. The pixel value of the six features of crow images are taken, converted into its hash function and the same implemented in neural networks. Multilayer perception employ a hyper plane to separate data points. SVR is a type of Radial Basis dealing with regression problems. SVM and SVR emerged as alternative machine learning methods to ANNs, with high popularity among hydrologists for flood prediction. SVM is greatly popular in flood modelling; it is a supervised

learning which works based on the statistical learning theory and the structural risk minimization rule. The training algorithm of SVM builds models that assign new non-probabilistic binary linear classifiers, which minimize the empirical classification error and maximize the geometric margin via inverse problem solving. SVM is used to predict a quantity forward in time-based algorithm on training from past data. SVMs are both suitable for linear and nonlinear classification, it is efficient in mapping of inputs into feature spaces. The high computation cost of using Radial Basis and their unrealistic outputs might be demanding, due to their heuristic and semi-black-box nature, the least-square Radial Basis (LS-SVM) highly improved performance with acceptable computational efficiency. The alternative approach of the least-square Radial Basis involves solving a set of linear tasks instead of complex quadratic problems. Nevertheless, there are still a number of drawbacks that exist, especially in the methods of application of seasonal flow prediction using LS-SVM.

Radial Basis Technique
Radial Basis is used here to map the maximum movement of the mouth widening and gestures with that of the variation from the original values as determined by the veteran doctors. This maps the values and an hyper plane can be then be plotted based on the feature extracted values.

Block Chain Technique
Block Chain Technique makes the virtual reality applicable for natural environment. It brings the advanced technology into the real world objects. Block Chain Technique is used with sensor to detect the mindset of the crow. The same converted as signal. Myoware sensor is used here to read the voice signal.
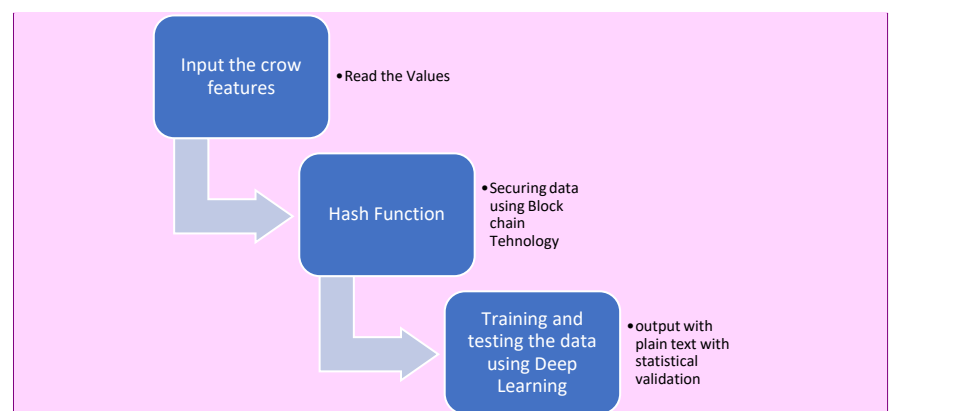
Proposed System Flowchart

Fig.4.1

Machine Learning

Multilayer Perception is the single or multi layer of Artificial Neurons. The input should have one node with weighted bias and output layer. Deep learning models can be developed effectively.

Support Vector Machine

SVM is the best classifier in neural networks for statistical calculation. Better prediction can be done using datasets in SVM.

Table 2. Multi Layer Perception& SVM Predicted Value

| MLP-predicted value1	MLP_predicted value2
150.1236	241.4128
66.40299	123.1027
161.4318	263.9883
163.9415	271.9729
150.1236	241.4128
66.40299	123.1027
161.4318	263.9883
163.9415	271.9729
150.1236	241.4128
66.40299	123.1027
161.4318	263.9883
163.9415	271.9729
150.1236	241.4128
66.40299	123.1027
161.4318	263.9883
163.9415	271.9729
150.1236	241.4128
66.40299	123.1027
161.4318	263.9883
163.9415	271.9729
150.1236	241.4128
66.40299	123.1027
161.4318	263.9883
163.9415	271.9729
150.1236	241.4128

Training, Testing and Validation

By training and testing the features, the basic characteristics of ROC curve generated for validation and prediction. To validate the efficiency of the resultant data the training and the testing data implemented in confusion matrix which accurately predicts the false resultant as false and the true resultant as true.
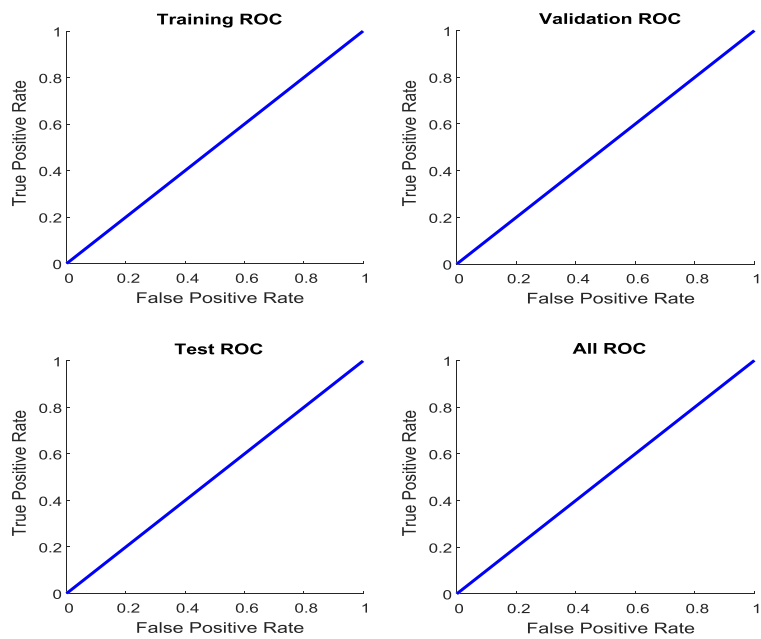
.7

Statistical Predicted Summary of SPSS

Statisical prediction done in spss tool by analysing the dataset in multilayer perceptron model.
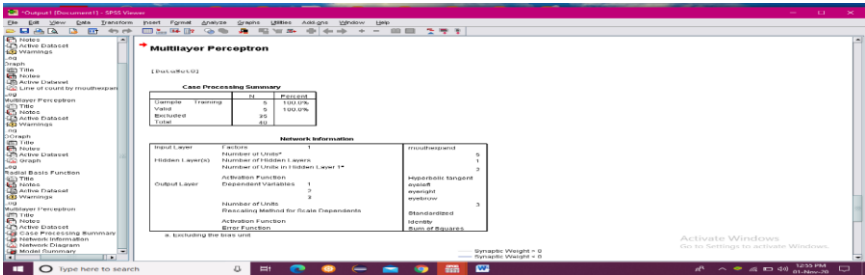
Case Processing Summary	
	Cases

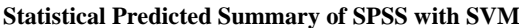|	Included		Excluded		Total	
	N	Percent	N	Percent	N	Percent
faceheight * mouthexpand * mouthshrink	4	100.0%	0	.0%	4	100.0%
facewidth * mouthexpand * mouthshrink	4	100.0%	0	.0%	4	100.0%
eyewidth * mouthexpand * mouthshrink	4	100.0%	0	.0%	4	100.0%
eyeexpand * mouthexpand * mouthshrink	4	100.0%	0	.0%	4	100.0%

Statistical Predicted Summary of JustNN

Statistical prediction implemented using JustNN tool where the training and testing data done and validated. The below diagram shows the learning time of Neural networks, minimum errors, testing time, validation and results.
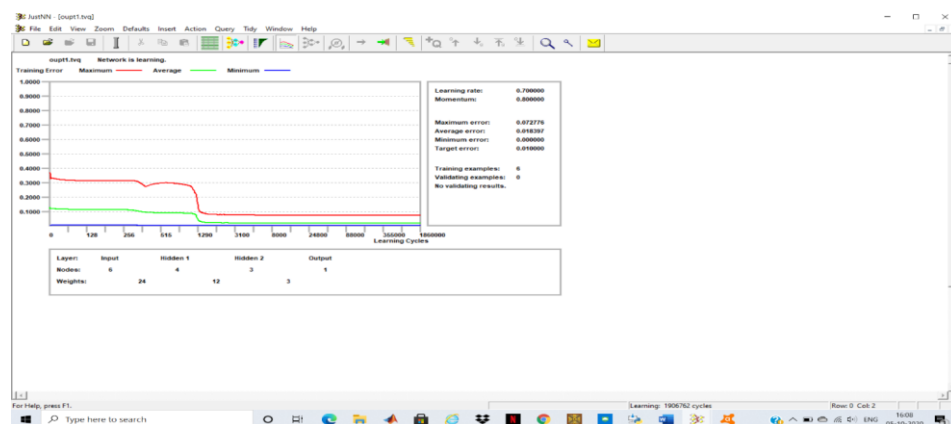
Statistical Predicted Summary of JustNN with variation in testing time and learning time

The diagram represents the changes in the testing time which made change in accuracy.

Statistical Predicted Summary of SPSS with SVM

The diagram explains the effeciery of MLP-SVM in SPSS tool for Deep learning proves better compared to MLP in JustNN tool.

The proposed system predicts the 100% accuracy by training and testing the dataset in Multilayer Perception,Radial basis function and Support Vector model in SPSS tool.

Conclusion and Future Work

Block chain technique implemented to Human-bird interactions is the special initiation of machine learning in Block Chain Technique to read the mind of the birds. The proposed system helps to detect the mind of crow using SVM and MLP with voice recognition sensor. This system helps to understand more about the crow and help to increase the growth of the crow. The new attempt made in this study helps the society of ornithology in a private secured manner. Further, the proposed system can be extended for implementation in other creatures. The proposed

systempredicts the 100% accuracy by training and testing the dataset in Multilayer Perception and Radial Basi and ,SVM in SPSS tool.

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