

Role of Artificial Intelligence in Loan Analysis

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Abstract: *The objective of this paper is to take into consideration the process of loan analysis, to probe into the matter and calculate the percentage risk and determine if a loan applicant is eligible enough for granting the loan and to ease the loan process. Banks find the process a bit cumbersome as it is time consuming also and also involves a lot of risk. Artificial neural network helps in percentage risk calculation and thus assists in this process. Back propagation algorithm and feed forward network can determine whether the applicant is suitable for borrowing the loan or not.*

Keywords: *Artificial Intelligence, Prediction, Credit rating System.*

1. INTRODUCTION:

The main aim of banks to make money is by taking capital from people at a particular rate of interest. They, then lend this money to borrowers at a higher rate and thus earn profit. Thus, banks function in a health economy. But many a times, banks face a problem of bad loans which happens when people who borrow money but are not able to repay it at the predefined time. This is when the banks face a tough time. This affects the economy of the world in a negative pace. Bad loans decrease the efficiency of banks in a financial setup and also are not conducive for economy. The economic development of a country directly depends on the state of banks. They are the engines of an economy. Banks face a problem of bad loans as they are not able to generate the loan amount given along with the higher interest rate. This term is known as Credit Risk. Credit Risk is a major concern for the banks and raises a question in front of them to find out a way to get rid of this problem of bad loans.

In the event that a bank has great clients it is bound to build its proficiency and permit the banks to loan all the more yet here can be an opposing instance of banks itself going bankrupts when they confront terrible advances and awful clients. Hazard investigation of credits in money related markets is one of the significant devices that can be connected with neural systems. Counterfeit Neural Networks assume an undeniably vital job in budgetary applications for assignment, for example, design acknowledgment, characterization and different others, for example, time arrangement estimating. Credit Risk is endless supply of elements and can be partitioned into two gatherings one inside the association and the other outside the association. i.) Factors outside the banks are not under the domain of banks and can't be controlled by banks. These components incorporate Political Changes, Earthquakes, and War and so forth ii.) Factors inside the banks are the components which the bank association have their hold upon. These are called Endogenous elements [2]. In this examination we are endeavouring to discover the variables which are endogenous to the banks and are influencing the credit danger of the banks essentially. The primary motivation behind this undertaking is to recognize the scope of variables which play an extremely huge job in credit chance investigation and in this manner subsequent to breaking down the scope of variables we will endeavour to concoct a Credit Rating which can be given to each client of the bank. The favourable position of Credit Rating would be with the end goal that if the client does not have the adequate FICO score, he won't be conceded the advance. In like manner if the client possesses the required FICO assessment he will be allowed the advance. ANN display is utilized in this examination to accomplish the previously mentioned. It comprises of the info layer, concealed layer and the yield layer which will be utilized to actualize the portrayed previously.

2. METHODOLOGY:

The technique that is utilized in this investigation is that of fake knowledge. Computerized reasoning can be characterized as the conferring the knowledge to the machine so as to understand complex issue. For Example, facial acknowledgment, discourse acknowledgment, Natural dialect handling, mechanical autonomy and so on. Counterfeit Insight is the structuring the PC which can execute work hinting people like visual discernment, choice making and so on. The ideal model is be accomplished by counterfeit neural organize. Fake neural system is the neural system structured to work in the way natural sensory system. It is demonstrate after the human cerebrum. It is comprised of profoundly interconnected preparing components called Neurons. The neurons are the central component of the neural system. For any given issue, these neurons cooperate to accomplish the ideal result. A neuron is handling unit. It has numerous yields and have just a single yield. There are fundamentally two method of using the neurons. The main mode

is the preparation mode in which we train the neuron or the neural system. At that point comes the utilizing mode where the trained neuron is utilized for preparing and creating the yield any neural system has three layers. These are input layer, shrouded layer, yield layer. The info layer comprises of the input neurons that demonstration like information unit. Every one of the loads are to be given to the neural system are through info layer. The concealed layer acts like C.P.U. of the PC. This layer is in charge of changing the loads and mapping the info loads with the yield weights. It changes the contributions to something that the yield layer can use. Finally, the yield layer acts like the yield unit that creates the last outcome.

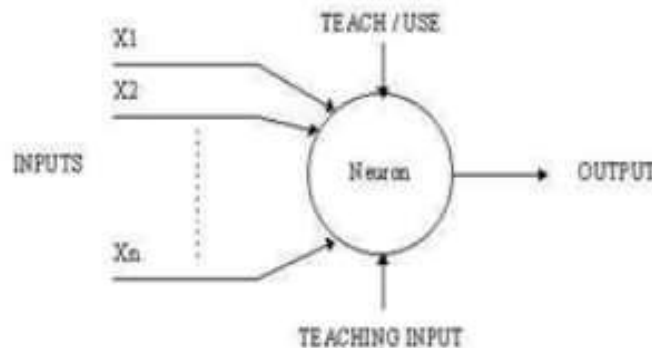


Fig. 1. Neuron Network

3. SYSTEM ARCHITECTURE:

For choosing whether the candidate ought to be affirmed for advance or on the other hand not, there are a few variables for choosing that. These elements are fundamentally information from the monetary history and money related foundation of the candidate. The model comprises of 11 input hubs, 10 shrouded hubs and 11 yield hubs. It comprise of 11-10- 11 topology. These above determined factors will be separated from the given information and will be given to the neural system as the information. At that point the neural system is likewise given the objective yield for the mapping of the info variable to the relating yield variable by changing the loads. The Activation Function is used to facilitate this assignment. An initiation capacity of a hub characterizes the yield of that hub given an info or set of data sources. The 11 factors and their related qualities are as per the following:

VARIABLE	VALUES
Age	1 if it is above 25 else 0
Income	0 if less than 3.25L pa, 1 if between 3.25 to 12L pa, 2 if more than 12L pa
Loan amount	1 if less than 10L, 2 if between 10L to 20L, 3 for more than 30L
Account type	1 for salary account, 2 for savings account
Residency	1 for resident, 0 otherwise
Job experience	0 if less than 2 years, 1 if between 2 and 5 years, 2 for than 5 years
Debt Balance Ratio	1 if dbr is good, 0 otherwise
PAN Card	1 if the applicant has PAN Card, 0 otherwise
Guarantor	1 if the applicant has guarantor, 0 otherwise
Type of Company	1 if the company is endorsed by the bank, 0 otherwise
Nationality	1 if the nationality is Indian, 0 otherwise

Table 1. Loan Calculation

4. CONCLUSION:

As we have seen the credit value of an individual can be determined by utilizing man-made consciousness framework. The neural system can be exceptionally helpful in examining the noteworthiness of the client and can enhance the effectiveness and furthermore can accelerate the time taken in advance affirming process utilizing Credit scoring framework. Advance Analyser utilizing fake neural system can likewise lessen the over the top outstanding task at hand on the credit officer and aides in rapidly breaking down the noteworthiness of the candidate and in making the choice about the advance endorsement i.e. regardless of whether the advance for the candidate is affirmed or not.

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