International Research Journal of Engineering and Technology (IRJET) e-ISSN: 2395-0056
Volume: 08 Issue: 03 | Mar 2021 www.irjet.net p-ISSN: 2395-0072

Trail the Land Price using Deep Multilayer Perceptron

Sandhiya.A[1], Saundariya.M[2], Sonaa.R[3], Dr.P.Mohan Kumar[4]

[1,2,3]*Final Year Student, Dept. of Computer Science and Engineering, Jeppiaar SRR Engineering College, Chennai.*
[4]*Head of the Department, Dept. of Computer Science and Engineering, Jeppiaar SRR Engineering College, Chennai.*

Abstract - *Machine learning methods have been recently growing in financial trading applications. There are many different things we should consider before we dive right in and put our money into a specific investment. Doing an analysis of the potential investment's value can help us to figure out whether it's a good choice or not. This process is named valuation and it helps investors determine an asset's current and projected worth. Conducting an analysis of the value of an investment means we'll need to know some of the metrics of the company as well as information about the company's management. This goes for companies in any quite industry including land. In this project, we looks at Price-to-Earnings ratio (P/E) and how they are measured in the real estate industry. Land value is the value of piece of property including both the value of the land itself as well as any improvement that have been made to it. This is different from site's value that is value of the land with no leases, mortgages or anything present that may otherwise change the site's value. Land value get rises when demand for land exceeds the supply of any particular piece of land..*

***Key Words*: Investment, Good choice, Price-to-Earning ratio(P/E), Land value, Site value, Real estate**

1. INTRODUCTION

The main aim of our project is to analyzing and valuation of asset's current and projected worth. Here machine learning techniques automatically determine the patterns that lead to predictable market movement. This is applicable to any quite industry including land. Price trailing of land depends on ding surrounding, environment, future prediction by using location based functionalities and last growth of land details. An economy of scope means that the production of one good reduces the value of manufacturing another related good. Economies of scope occur when producing a wider sort of goods or services in tandem is more cost effective for a firm than producing less of a spread, or producing each good independently. In such a case, the long-run average and incremental cost of a corporation, organization, or economy decreases thanks to the assembly of complementary goods and services. The latter refers to a discount in incremental cost by producing additional units.Eg: Economics of scale, helped drive corporate growth in the 20th century through assembly line production.

Machine learning is an application of Artificial Intelligence (AI) that provides the ability to learn automatically by the system and improve the experience by training themselves. It focuses on the computer programs development that can train and access the data by itself. The primary aim of ML is to make the computer to learn automatically without human intervention act accordingly. It often uses an iterative approach to learn from data automatically. Some of the methods of Machine Learning algorithm are categorized as supervised learning, unsupervised learning, semi-supervised learning, reinforcement learning.

Python runs on different platforms like Windows, Mac, Linux, Raspberry Pi, etc. It has an easy syntax almost like English language. Python's syntax that permits developers to write programs with fewer lines compared with other programming languages. Python uses an interpreter system where the code are often executed as soon. This means that prototyping can be very quick. It are often treated in a procedural way, an object-oriented way or a functional way. Python was designed for user-friendly, readability, understandability and has some similarities with English language. It makes use of new lines to end a command whereas other programming languages which regularly uses semicolons or parentheses. It relies on indentation, using whitespace, to define scope just like the scope of loops, functions and classes. Other programming languages mostly use curly-brackets.

2. RELATED WORKS

A .Tsantekidis, N. Passalis, A. S. Toufa, K. S. Zarkias, S. Chairistanidis, A. Tefas [1]. Machine learning methods have recently seen a growing number of applications in financial trading. Being able to automatically extract patterns from past price data and consistently apply them in the future has been the focus of many quantitative trading applications. However, developing machine learning-based methods for financial trading is not straightforward, requiring carefully designed targets/rewards, hyperparameter fine-tuning, and so on. Furthermore, most of the existing methods are unable to effectively exploit the information available across various financial instruments. In this article, we propose a deep reinforcement learning-based approach, which ensures that consistent rewards are provided to the trading agent, mitigating the noisy nature of profit-and-loss rewards that

are usually used. To this end, we employ a novel price trailing-based reward shaping approach, significantly improving the performance of the agent in terms of profit, Sharpe ratio, and maximum drawdown. Furthermore, we carefully designed a data preprocessing method that allows for training the agent on different FOREX currency pairs, providing a way for developing market-wide RL agents and allowing, at the same time, to exploit more powerful recurrent deep learning models without the risk of overfitting. The ability of the proposed methods to improve various performance metrics is demonstrated using a challenging large-scale data set, containing 28 instruments, provided by Speedlab AG.

M. Ballings, D. Van den Poel, N. Hespeels, and R. Gryp [2]. Stock price direction prediction is an important issue in the financial world. Even small improvements in predictive performance can be very profitable. The purpose of this paper is to benchmark ensemble methods (Random Forest, AdaBoost and Kernel Factory) against single classifier models (Neural Networks, Logistic Regression, Support Vector Machines and K-Nearest Neighbor). We gathered data from 5767 publicly listed European companies and used the area under the receiver operating characteristic curve (AUC) as a performance measure. Our predictions are one year ahead. The results indicate that Random Forest is the top algorithm followed by Support Vector Machines, Kernel Factory, AdaBoost, Neural Networks, K-Nearest Neighbors and Logistic Regression. This study contributes to literature in that it is, to the best of our knowledge, the first to make such an extensive benchmark. The results clearly suggest that novel studies in the domain of stock price direction prediction should include ensembles in their sets of algorithms. Our extensive literature review evidently indicates that this is currently not the case.

H. Van Hasselt, A. Guez, and D. Silver [3]. The popular Q-learning algorithm is known to overestimate action values under certain conditions. It was not previously known whether, in practice, such overestimations are common, whether they harm performance, and whether they can generally be prevented. In this paper, we answer all these questions affirmatively. In particular, we first show that the recent DQN algorithm, which combines Q-learning with a deep neural network, suffers from substantial overestimations in some games in the Atari 2600 domain. We then show that the idea behind the Double Q-learning algorithm, which was introduced in a tabular setting, can be generalized to work with large-scale function approximation. We propose a specific adaptation to the DQN algorithm and show that the resulting algorithm not only reduces the observed overestimations, as hypothesized, but that this also leads to much better performance on several games.

K. Greff, R. K. Srivastava, J. Koutnik, B. R. Steunebrink, and J. Schmid- huber [4]. Several variants of the long short-term memory (LSTM) architecture for recurrent neural networks have been proposed since its inception in 1995. In recent years, these networks have become the state-of-the-art models for a variety of machine learning problems. This has led to a renewed interest in understanding the role and utility of various computational components of typical LSTM variants. In this paper, we present the first large-scale analysis of eight LSTM variants on three representative tasks: speech recognition, handwriting recognition, and polyphonic music modeling. The hyperparameters of all LSTM variants for each task were optimized separately using random search, and their importance was assessed using the powerful functional ANalysis Of VAriance framework. In total, we summarize the results of 5400 experimental runs (≈15 years of CPU time), which makes our study the largest of its kind on LSTM networks. Our results show that none of the variants can improve upon the standard LSTM architecture significantly, and demonstrate the forget gate and the output activation function to be its most critical components. We further observe that the studied hyperparameters are virtually independent and derive guidelines for their efficient adjustment.

R. C. Cavalcante, R. C. Brasileiro, V. L. F. Souza, J. P. Nobrega, and A. L. I. Oliveira [4]. Financial markets play an important role on the economical and social organization of modern society. In these kinds of markets, information is an invaluable asset. However, with the modernization of the financial transactions and the information systems, the large amount of information available for a trader can make prohibitive the analysis of a financial asset. In the last decades, many researchers have attempted to develop computational intelligent methods and algorithms to support the decision-making in different financial market segments. In the literature, there is a huge number of scientific papers that investigate the use of computational intelligence techniques to solve financial market problems. However, only few studies have focused on review the literature of this topic. Most of the existing review articles have a limited scope, either by focusing on a specific financial market application or by focusing on a family of machine learning algorithms. This paper presents a review of the application of several computational intelligent methods in several financial applications. This paper gives an overview of the most important primary studies published from 2009 to 2015, which cover techniques for preprocessing and clustering of financial data, for forecasting future market movements, for mining financial text information, among others. The main contributions of this paper are: (i) a comprehensive review of the literature of this field, (ii) the definition of a systematic procedure for guiding the task of building an intelligent trading system and (iii) a discussion about the main challenges and open problems in this scientific field.

3. PROPOSED SYSTEM

In proposed system we enhance the project by getting land details from the registration office. Whether we can upload the image of the land document for accurate verification. Seller can upload the Aadhaar card or PAN card or some kind details to reduce the fraud activities. Once we upload the land location and details first it will check automatically whether the land/property is in correct location or not. After analysing, the owner details, land details are processed automatically by using Deep Multilayer Perceptron and predicts the price of land.

3.1 Advantages of Proposed System

1. We can search land in any location with accurate details.
2. It can be reduce fraud activities.
3. There will be less prank activities.
4. Land details can be highly precision.
5. Only approved and assured land can be posted by seller.

4. SYSTEM ARCHITECTURE

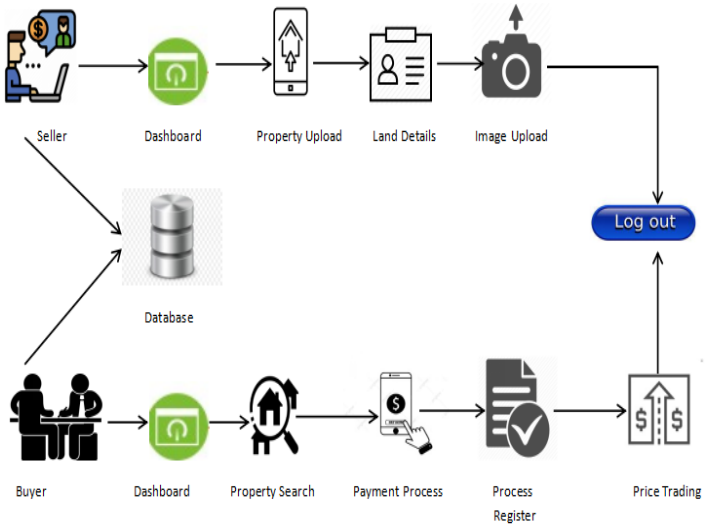

Fig -1: System Architecture

5. REQUIREMENTS SPECIFICATION

5.1 Hardware Requirements

Processor : Intel Pentium Processor at 2.6GHz
Ram Size : 4 GB
Hard Disk : Minimum 20 GB

5.2 Software Requirements

Operating System : Windows 10 64-Bit
Frontend : Core Python, HTML, CSS, JS
Backend : MYSQL
Web Application : Django

6. MODULES AND DESCRIPTION

6.1 Buyer

This module provide the buyer details. If the buyer is new to the application then they want to register after they can access this application easily. The buyer can register the details with proper validation and all the fields will be required for the registration process. The buyer can see the property details with the exact location, loan details for the property, and check the feasibility area surrounding the location. Then the buyer will register for the respective land and it will get confirmation from the seller for the buyer request. Once the registration process has completed they can do the payment through the application and it will get fully secured.

6.2 Seller

This module provide the seller details. If the seller is new to the application then they want to register after they can access this application easily. The seller can register the details with proper validation and all the fields will be required for the registration process. The seller can add the land details with the complete specification of land, location, and proof for the land owner has to upload for their verification. It is mandatory to provide owner information details.

6.3 Property Search

This module provides information about the property search of the land details for the buyers. This information will be maintained by the seller and it will be secured for all the buyers. The seller will add the details dynamically and the data will be viewed by the buyers at the same time. It has to make the user convenient to easy and less work for searching the land details. Here we use Deep Multilayer Perceptron(DMP)algorithm. A DMP consists of 3 layers of node: an input layer ,a hidden layer and an output layer.

6.4 Price Trading

This module provides information about price trailing. It will depend upon the surroundings, environment, and land property details. The future prediction will be localized by the location-based surroundings and function of the land areas. At last, the prediction amount will be get finalize and the growth of land details will be predicted by the seller. The buyer can search the property of land details according to their specification and the valuable prize for the land depends upon the location, surroundings, etc. In this module we make use of P/E ratio. They are used by buyers and sellers to determine the relative value of a property in an apples-to-apples comparison.

7. RESULTS

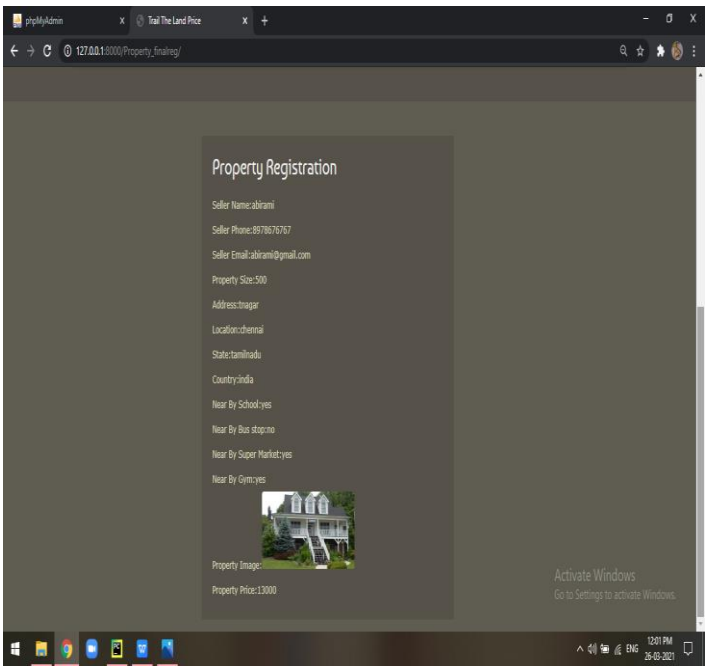

Fig -2: Property Registration

Seller uploads the property details with the ID proofs and family details. Buyer searches for property based on location, price and popularity and makes payment for the selected property and finally the property is registered for the buyer successfully.

8. CONCLUSION

Due to the recent climate changes and their consequences such as flash floods and droughts, there's a requirement for Land Use Land Cover mapping to watch environmental changes which have effects on ecology, policy management, health. It should be noticed that recent droughts caused by climate change and on the opposite hand increase in population has increased the speed of urbanization. Using machine learning we can easily analyse the land. In future we can develop new feature and techniques by using neural networks. It has high accurancy compare to machine learning.

REFERENCES

[1] A. Tsantekidis, N. Passalis, A. S. Toufa, K. S. Zarkias, S. Chairistanidis, A. Tefas, "Price Trailing for Financial Trading Using Deep Reinforcement Learning", IEEE Transactions on Neural Networks and Learning Systems, Early Access, pp. 1-10, June 2020.

[2] M. Ballings, D. Van den Poel, N. Hespeels, and R. Gryp, "Evaluating multiple classifiers for stock price direction prediction," Expert Syst. Appl., vol. 42, no. 20, pp. 7046–7056, Nov. 2015.

[3] H. Van Hasselt, A. Guez, and D. Silver, "Deep reinforcement learning with double q-learning," in Proc. AAAI, vol. 2. Phoenix, AZ, USA, 2016, p. 5.

[4] K. Greff, R. K. Srivastava, J. Koutnik, B. R. Steunebrink, and J. Schmid- huber, "LSTM: A search space odyssey," IEEE Trans. Neural Netw. Learn. Syst., vol. 28, no. 10, pp. 2222–2232, Oct. 2017.

[5] R. C. Cavalcante, R. C. Brasileiro, V. L. F. Souza, J. P. Nobrega, and A. L. I. Oliveira, "Computational intelligence and financial markets: A survey and future directions," Expert Syst. Appl., vol. 55, pp. 194–211, Aug. 2016.

[6] J. E. Moody and M. Saffell, "Reinforcement learning for trading," in Proc. Adv. Neural Inf. Process. Syst., 1999, pp. 917–923.

[7] R. S. Sutton and A. G. Barto, Reinforcement Learning: An Introduction.Cambridge, U.K.: Cambridge Univ. Press, 2011.