A Novel Agricultural Engineering Trend Prediction based on Neural Network Prediction Model with the Rough Set Theory

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Abstract. This paper proposes the novel agricultural engineering trend prediction based on neural network prediction model with the rough set theory. The relationship between multiple decision makers may be independent of each other, and therefore need to use approximate more than two yuan to the target, this paper proposes the concept of multi-granulation rough set, in multi granularity in rough set, with two and two above the indiscernibility relation of the concept of approximation and analyzes the multi-granulation rough set and the relationship between classical rough set. Agricultural engineering is the relationship between agricultural research organisms and engineering means of core interaction, resulting in formation and basic theory of agricultural engineering, for the rational development and utilization of agricultural resources improve the environment factors of the agricultural production process and promote the service of agricultural modernization. This paper provides the new idea of dealing with the issue that will promote the further development of the corresponding research.

Keywords: Rough Set (rs), Trend Prediction, Agricultural Engineering, Neural Network Prediction.

1 Introduction

Agricultural relative agriculture in terms of tangible assets, intangible assets is the condensation of general creative intelligence work achievement. Generally speaking, the agricultural intangible assets is agricultural enterprises and agricultural contracts manage door, agricultural collective economic organizations, such as various types of agricultural economic subject of the agricultural patent technology and the proprietary technology, computer software, trademarks, goodwill, land use basic rights, leases, commercial secrets, the floorboard of the contract rights and other intangible property. As a basic fixed asset formation process of the project, its profitability is an essential feature of the project. In order to ensure the profitability of the project, the project risk transfer strategy is the core inevitable decision of the project operator. Engineering insurance is a means of financial transfer of project risk. Engineering insurance is to operate the project for the purpose of the risk insurance. The insurer of the project insurance is the operator of the project insurance. It collects the risk of the project and collects the premium together. It establishes the risk fund as when the insured suffers the risk loss, the insurer will provide compensation.
Agricultural engineering is the relationship between agricultural research organisms and engineering means of core interaction, resulting in formation and basic theory of agricultural engineering, for the rational development and utilization of agricultural resources improve the environment factors of the agricultural production process and promote the service of agricultural modernization. It is an interdisciplinary subject between modern agriculture and modern biological engineering, belong to science and technology which can be analyzed from the listed aspects.

- During the period of the project contract, the contractor carries out insurance in stages and all kinds of risks are connected together to form a complete process of that project construction. This is because the project construction period is long, as the insurance acceptance structure in accordance with the specific circumstances of each stage to consider the design of a variety of engineering insurance other insurance methods, on the one hand is conducive to decentralized risk.
- Because the value of ordinary property insurance is determined at the time of insurance while the maximum damage value is the same. The engineering insurance due to the characteristics of the project, the project is the formation process of fixed assets, fixed assets is also increased with the progress of the project the maximum possible damage value is increased with the progress of the project as shown in the follows.

![Agricultural Engineering Principles](image)

Fig. 1. The Agricultural Engineering Principles

2 The Neural Network Prediction Model with Rough Set Theory

The advantages of neural networks in terms of expressiveness are at the expense of their resolvability. It is difficult to develop a set of probabilistic statistics-based model identification techniques, as such as the linear model, because of the difficulty of the analysis. In recent years, research on the development of neural network is very fast, there are some more suitable for modeling the neural network, the network has the
ability to approximate any nonlinear function and the neural network of that parallel distributed processing, fast speed is suitable for real-time non-linear modeling. The neural network modeling method is also very simple as it has no special requirements on the controlled system model and only a set of input and output data to extract information. Identification of nonlinear autoregressive order autoregressive model is equivalent to determine smallest p of make g function, the smallest p corresponding to the most simple and complete nonlinear autoregressive order number.

\[ b_{x,y} = a_x^t \left( k + \alpha \sum_{j=\min(1, t-n/2)}^{\min(N-1, t+n/2)} (a_{x,j})^2 \right)^{\frac{1}{d}} \]

(1)

The relationship between multiple decision makers may be independent of each other, and therefore need to use approximate more than two yuan to the target, this paper proposes the concept of multi-granulation rough set, in multi granularity in rough set, with two and two above the indiscernibility relation of the concept of approximation and analyzes the multi-granulation rough set and the relationship between classical rough set. In this paper, a variable precision rough set is constructed in multi-granularity environment, and the concept of variable precision multi-granularity rough sets is proposed. Variable precision multi-granularity rough set combines the advantages of variable precision rough set and multi-granularity rough set, not only can adapt to the classification with certain uncertainty, enhance the ability to deal with inconsistent data, but also from the multi-granularity perspective. Variable precision rough set is a generalized representation of variable precision rough sets and multi-granularity rough sets.

Fig. 2. The Neural Network Prediction
3 The Forecasting Model Building and Demonstration

This method is a process of learning from human learning behavior. It adopts a learning strategy of "learning by repetition", which has the memory system and the experience correction mechanism. It makes use of the deviation of the past output and the expected output to correct the undesirable control signal, and produces the current control function, which improves the tracking performance of the system. It is an offline learning process, independent of the precise mathematical model of dynamic system. In order to solve the problem of unequal time-interval, the commonly used methods in practice include: (1) interpolating the missing data in the original data to meet the requirements of equidistance, and then establishing the prediction model. Because of the artificial estimation of the original data, the credibility of the model is greatly reduced, and the precision of the model is not based on the objective raw data, and the accuracy of the prediction data is not guaranteed, and the side effects are obvious. This method overcomes the obvious artificial data traces of the first method. However, when generating a new data column, it is assumed that the new data columns are generated by default. Therefore, the theoretical basis is not sufficient, the model construction is far-fetched, and it is inconsistent with the final non-linear curve model. This form of accumulation is not possible, and to find other ways to generate the interval of data such as column, can only through the artificial processing. After processing the data, because it is artificial, according to a priori estimates draw, so after this process, the model will look more accord with, can meet the demand of a certain application. However, this practice with larger contingency, hard to avoid is going to do some original data processing, linear defects.
4 Conclusion

This paper proposes the novel agricultural engineering trend prediction based on neural network prediction model with the rough set theory. The relationship between multiple decision makers may be independent of each other, and therefore need to use approximate more than two yuan to the target, this paper proposes the concept of multi-granulation rough set, in multi granularity in rough set, with two and two above the indiscernibility relation of the concept of approximation and analyzes the multi-granulation rough set and the relationship between classical rough set. Engineering insurance is a means of financial transfer of project risk. Engineering insurance is to operate the project for the purpose of the risk insurance. The insurer of the project insurance is the operator of the project insurance. It collects the risk of the project and collects the premium together. It establishes the risk fund as when the insured suffers the risk loss, the insurer will provide compensation. The proposed model can deal with the challenges well with less complexity.

References


