

Artificial intelligence algorithms in psych profile classification and prediction

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Abstract

The definition of a psychological portrait of a person is one of the most difficult and important issues, the solution of which will improve the success of personnel management. There is a dependence of the psychological portrait and the success of a person in life. The presence of certain qualities affect the relationship with other people and the attitude to the world as a whole. There are many components of the psychological portrait such as temperament, character, intellect, etc. However, these components limit the number of possible types of personality. The purpose of this work is to use the algorithms of artificial neural network for classifying people and predicting certain aspects of human life.

Keywords: psychological portrait of a person, ART1, artificial neural networks

1 Introduction

There are many personality testing systems based on standard psychological components. These tests only show which group a person belongs to. For example, extraversion-introversion test. This knowledge is not so useful in predicting for example salary. Because there is no direct dependence between extraversion-introversion and salary.

In this work, there are several objectives.

1. Use artificial intelligence algorithm for classification persons into groups.
2. Use artificial intelligence algorithm for predicting certain values such as salary of person.
3. Develop system for collecting and analyzing data

2 Solution

This approach is based on questions. Person answers for questions. Each person's profile can consist any additional information. It can be salary, age, working place etc. This additional information is needed for predicting. All answers of different person is storing and analyzing using algorithms that described below.

2.1 ART1

For solving first problem ART1 [1] algorithm was chosen. This algorithm fits well, since we do not know the number and attributes of classes for which we need to divide profiles. Every person's profile is future vector (P_i). ART1 algorithm help to divide group off people to several groups by similarity.

2.2 FEEDFORWARD NEURAL NETWORK

In order to achieve second objective artificial intelligence with supervised learning can be used.

Artificial neural network [2] is one approach. The input will be user's profile vectors and the output of additional

user data, for example salary. After learning we can predict additional values by profile vectors.

3 Experimental data

To get experimental data testing system was developed. The system consists of mobile application and server. Users answer on question using application and server collects, stores and analyzes data.

Backend is written on .Net Core framework using C# 6.

Mobile application is written for iOS platform using Swift language.

4 Result

The results of training the neural network are presented in the table 1.

TABLE 1 Neural Network

Layers count	Network structure	Correct classification rate (CCR)	
		Learning	Training
1	10-10-1	90,9874	40,1233
2	10-10-10-1	92,0758	42,4657

The set of data has no enough entries to get better results. This problem will be solved in future by getting more information.

5 Conclusion

In this work, algorithms of artificial intelligence were used to classify and analyze a person's psychological portrait. This approach has several problems to solve. The main problem is drafting questions that is not tightly connected with each other. The second is to get enough amount of data to increase accuracy of algorithms. These problems will be solved in the future work.

References

[1] Jones M T 2006 *Artificial Intelligence Application Programming* Dreamtech Press

[2] Mitchell T M 1997 *Machine learning* Burr Ridge, IL: McGraw Hill 45(37) 870-7