Pasargard 2005 Coach Description

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Abstract.   This paper describes our first efforts of developing a new team for RoboCup   Simulation Coach. The main interest behind the Pasargad's effort is to provide structures for both online and offline coach aspects. To pin down precisely - as stated by the organizer of tournament - in offline coach participants are provided with the .rcg log-file of patterns and no-pattern .rcg log-file of base strategy and coaches should be looking for the qualitative difference between the pattern log file and the corresponding no-pattern log file to recognize the pattern correctly. and in online coach ,the coaches should detect the play patterns of the fixed-opponent in each game and report them.
To accomplish this Pasargard team decided to embark on development of learning algorithms via using "intellectual intelligence" approach. To evaluate the usefulness of this technique we performed an extensive evaluation on variant log-files and our analysis proves the usefulness of this tactic very well .finally we will describe our future research directories.

1. Introduction

As discerned above coach team may be considered as a function with the two cited inputs and recognized patterns as its outputs. This output pattern can be in an intermediate language format . Optimum format -Clang rules - can be sent to coachable team to facilitate detection process. The optimized structure is the one to detect playing pattern of opponent in any time. To be incisive enough in our detecting patterns , we plan to apply "neural network" in our design among many other architecture using controls like "genetic algorithms" and "hormonal system" (All biological based) for controlling agents .This approach is to be delicately implemented in our strategy .the following section embarks on more detailed view of this model.

2. Methodology

In short artificial intelligent is a subset of neural network .To surmount well ,we provide a trained network using some MLP (Multi Layer Perceptron) and coach them via "Back Propagation" algorithm and also some error functions. It aims at template

matching through this learning patterns in competition circumstance with the least fault percentage. This network training is done through supervised learning in offline mode.

It intends in detecting gradient descent and reaching the minimum point of energy i.e. the least network fault rate .The network is supplied with patterns and responses, then it seek the minimum points in energy landscape.

Outstanding merit of this model is due to its excellent reaction in facing unknown states.

3. Outlook

The trade-off between bias learning and error driven learning is an important matter in neural network. In such problems where there is no time for long time learning, a technique like emotional learning using neural network makes good answers, also many models are suggested for emotional learning. But none of them is perfect. Moreover we are going to have more sophisticated analytical log capable of pattern recognition through qualitative differences of log-file and base strategy. Optimized opponent modeling , and faster recognition of patterns in opponents via amended code is in our mind for future.

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