



The Importance of a Piece Difference Feature to Blondie24

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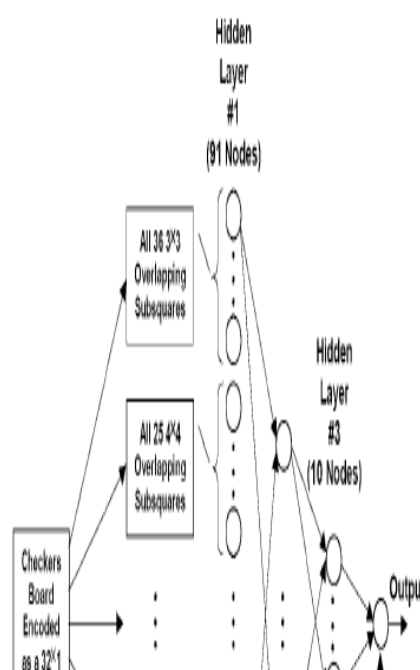
Abstract— In recent years, significant research attention has been paid to evolving self-learning checkers players. Fogel's Blondie24 has been very successful in this field and has inspired other researchers to further develop this area. In this paper we address the question of whether piece difference is an important factor in the Blondie24 architecture. Although this issue has been addressed before, this work provides a different experimental setup to previous work, but arrives at the same conclusion. Our experiments show that piece difference has a significant effect on learning abilities.

the evolutionary program utilises feedforward artificial neural networks to evaluate alternative positions in the game. The core feature in the design of Blondie24 is to make the program learn, through self play, how to play checkers.

This is direct contradiction of the alternative which is to preload it with all the information about how to make good moves and avoid bad ones. The architecture of Blondie24 is shown in Figure 1. The piece difference feature is directly connected to the output node.

I. INTRODUCTION

Interest in designing automated computer game playing programs dates back to at least the 1950's [1,2]. Interest today has not diminished and the introduction of Deep Blue in 1997 (after a series of modifications to a previous version of Deep Blue in 1996) represents one of the landmark successes in which a computer program defeated Garry Kasparov, arguably the best chess player ever [3,4]. Many important aspects of interest to artificial intelligence are encompassed by game playing such as knowledge representation, search and machine learning. A knowledge-based approach is often used



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