

Literature Survey

Title: Using Genetic Algorithms to evolve a Neural Network based Draughts Player

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Background

Description: Draughts AI players are currently designed to play at a fixed ability. While it has produced very competitive and intelligent players, they require tweaks in order to improve its performance. By combining Neural Networks and Genetic Algorithms, this issue could possibly be solved by creating a player that can grow in ability over time.

Environment

Themes

- Machine Learning
- Artificial Neural Networks
- Evolutionary Models
- Genetic Algorithms
- Draughts (Checkers)

Definition of Terms

Genetic Algorithm - An evolutionary method that solves optimisation problems. This is based on Darwin's theorem of perpetually evolving populations of solutions.

Neural Network - A computational model based on the operations of "inter-connected processing elements, which process information by their dynamic state response to external inputs." [1]

Draughts -

For the sake of clarity these rules will be enforced: - Take Piece. - Forced Promotion

Pages 2–4 Important issues of identified themes from results of reading.

Proposed Direction of the Project (Page 5)

Conclusion (Page 6)

References

[1] “Neural Network Primer: Part I” by Maureen Caudill, AI Expert, Feb. 1989