Computational Intelligence in Games

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Abstract. Summarize the paper in a paragraph of two. It should contain at least 70 and at most 150 words. You should motivate the research done, give some details about the experiments run and briefly mention the most important findings.

1 Introduction

Give an introduction to the problem tackled. Why is it important? Outline the rest of the document.

2 Literature Review

Perform a literature review: What has been done before in this field? What is the main technique/s used in the paper, and what has it/they been used for in the literature before? Give references to the most relevant work published. Example: [1].

3 Background

Explain in detail the techniques used through this project, citing other papers if needed. Feel free to include diagrams, pictures, pseudocode, and also to organize the section using subsections.

3.1 Heuristic Based Search

game unknown. which heuristic? [2]

3.1.1 One Step Look Ahead

3.1.2 Greedy

3.1.3 AStar

3.2 Reinforcment learning

3.2.1 Monte Carlo Tree Search

3.2.2 Temporal difference methods

3.2.3 Q-learning

3.3 Nature inspired

3.3.1 Neural nets

3.3.2 Evolutionary algorithm

3.3.3 pheromones

4 Techniques Implemented

Describe the controllers you created. Explain how they work, in which techniques are they based on (probably from previous section), and include figures and pseudocode as needed.

5 Experimental Study

Detail the experimental setup used to test the different algorithms. Present the results in an understandable manner (graphics, tables, etc.). Draw conclusions about what things worked (and why) and which didn't (and why).

6 Conclusions and Future Work

Explain the main contributions of this work: what are the most important findings. Finally, explain how could this work be extended. What would be the next steps?

References

1. C. Browne, E. J. Powley, D. Whitehouse, S. M. Lucas, P. I. Cowling, P. Rohlfshagen, S. Tavener, D. Perez, S. Samothrakis, and S. Colton, "A survey of monte carlo tree search methods." *IEEE Trans. Comput. Intellig. and AI in Games*, vol. 4, no. 1, pp. 1–43, 2012. [Online]. Available: http://dblp.uni-trier.de/db/journals/tciaig/tciaig4.html#BrownePWLCRTPSC12
2. H. Desurvire, M. Caplan, and J. A. Toth, "Using heuristics to evaluate the playability of games." in *CHI Extended Abstracts*, E. Dykstra-Erickson and M. Tscheligi, Eds. ACM, 2004, pp. 1509–1512. [Online]. Available: http://dblp.uni-trier.de/db/conf/chi/chi2004a.html#DesurvireCT04