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Project plan

A study of Poker bots and the existent models' behaviour

1. Aims and objectives

1.1 Aims

To get an overview on the Poker AI techniques and strategies that are being used at the moment, to find out what the top researchers in this field have achieved and to understand why Poker is a game that is so difficult to master by a computer (what is the main issue when trying to develop better Poker models). Among these, a more detailed attention will be given to Poker bots that play against real human, rather then against other bots.

1.2 Objectives

1.2.1 Review the state-of-art techniques both from a mathematical and a progamatical perspective

1.2.2 Produce a simple piece of code that will play "dumm" Poker

1.2.3 Develop the initial piece of code with as many features as possible – as playing Poker can be regarded as an efficiency problem, the more features a model has, the better it is

1.2.4 Evaluate the results of the produced Poker model and compare it to previously-defined metrics

1.2.5 Produce a state-of-art review alongside with the details of my experiment and the results achieved

1.2.6 Idealistical – Model the poker bot in a similar way a person thinks at the Poker table, rather then creating a statistical model. Review if/how this would be possible and what are the reasons for the lack of material in the field regarding this approach.

2. Expected outcomes/deliverables

2.1   A literature survey that summarises previous work in the area of Poker playing bots and a chronological summary of the progress in the field

2.2   An algorithm that implements one of the existent models in the field for playing Poker, or another variant of Poker (ex: Heads-up game, Pre-flop game)

- or –

An algorithm that implements a newly designed algorithm with a different approach to solve the problem of playing Poker efficiently

2.3   A fully documented and functional piece of software that implements the above-specified algorithm, including a properly designed plan and its specifications.

2.4   A strategy and the metrics used to specify the results of the piece of code implemented and a report on the results obtained

3. Work Plan

- Project start to end-October (4 weeks): Choice of problem to solve
- Mid-October to mid-November (4 weeks): Literature search and review
- End-November to mid-January (8 weeks): Model implementation
- Mid-January to mid-February (4 weeks): Model testing and evaluation
- Mid-February to end-March (6 weeks): Final Report