

1. Introduction

This year, in the Competition Section, we will conduct a type of a territory game to fight over which team can take more squares on a field divided up into grids.

2. Overview of the developed program

2.1 Introduction of System

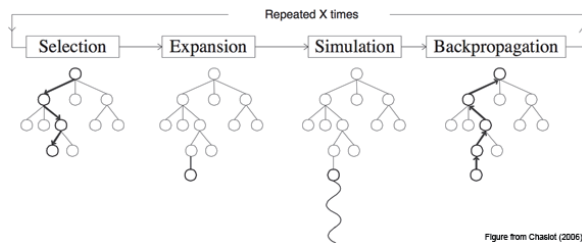
We had developed a set of tools to help us to determine which strategy we are going to use. Like the “Score Map Tool”, it can be used to display the score in different color. If the score of the square is tend to +16, the color of background will tend to light green, and vice versa.

2.2 Overview of the algorithm

We had added artificial intelligence (AI) to help us for making

optimal decisions.

Monte Carlo Tree Search (MCTS) combines the generality of random simulation with the precision of tree search.



Selection - Starting at root node R , recursively select optimal child nodes (explained below) until a leaf node L is reached.

Expansion - If L is a not a terminal node (i.e. it does not end the game) then create one or more child nodes and select one C .

Simulation - Run a simulated playout until a result is achieved.

Backpropagation - Update the current move sequence with the simulation result.