Survey of game AI competitions

MSc Interactive Entertainment Technology

cs7032: AI & Agents
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1 Goals

To learn about a Game AI competition (preferably one that is co-located with an AI or games conference). Give a short presentation describing the competition. The final course project will involve creating an entry for a competition to be chosen among the ones presented in class. The presentations can be done by groups of 3 students.

2 What to do

1. Start by exploring some game-AI conference websites, such as the The IEEE Conference on Computational Intelligence and Games\(^1\), The IEEE World Congress on Computational Intelligence\(^2\), or the AI and Interactive Digital Entertainment Conference\(^3\), to see which competitions they host, how often they are held, requirements for participation etc. There are also web sites that compile lists of such competitions.

2. Choose a game competition to present, and email me your choice and the composition of your group. Groups should present different game competitions, so choices will be recorded more or less on a 1st-come-1st-served basis.

3. Below is a list of possible games you might like to take a look at. Bear in mind that the deadlines for most competitions have already passed, so your survey will basically look at past competitions (including the papers written by participants on the techniques they used). The expectation is that the competition will run again in 2014. The list below is by no means exhaustive, and is probably a bit out of date, so please feel free to search for Game AI competitions (here’s a sample search\(^4\)).

\(^1\)https://duckduckgo.com/?q=IEEE+Conference+on+Computational+Intelligence+and+Games
\(^2\)http://ieee-wcci2014.org/
\(^3\)http://aiide.org
\(^4\)https://duckduckgo.com/?q=Game+AI+competitions
• AI Birds.org: an Angry Birds AI Competition\(^5\) held at the International Joint Conference on AI (IJCAI).

• Simulated Car Racing Championship\(^6\): a competition based on the open racing car simulator (TORCS).

• MarioAI Competition\(^7\): A tribute to the famous game, consisting of different tracks: game play, level generation and Turing test. Each track could count as a separate competition, so different groups could present different tracks.

• The The 2K BotPrize\(^8\): a competition based on UT2004 and the agent development toolkit POGAMUT.

• The Ms Pac-Man vs Ghost Team Competition\(^9\): another tribute, in Java. There are two tracks which can be described separately.

• The StarCraft RTS AI Competition\(^10\): based on the popular real time strategy game.

• ...

2.1 Presentation

You will give a short (< 5 minute) presentation describing your chosen competition next Tuesday. Your presentation could include, for instance, a brief demo of the game showing a sample agent (most AI game platforms include a “baseline” sample agent) playing the game.

Since the main Course Project’s topic will be based on one of these game competitions, your presentation should also include details on:

1. Which platforms (Linux, Windows, MacOS, etc) the game software runs on,

2. Which programming languages are supported for agent development,

3. Whether there are additional software requirements or constraints, licensing issues (e.g. is all the software required open-source or are there proprietary software that need to be installed?) third-party libraries etc,

4. How difficult it is to get the game server and development environment set up and ready for agent development,

\(^5\)http://aibirds.org/
\(^6\)http://scr.geccocompetitions.com/
\(^7\)http://www.marioai.org
\(^8\)http://www.botprize.org/
\(^9\)http://www.pacman-vs-ghosts.net/
\(^10\)http://webdocs.cs.ualberta.ca/~cdavid/starcraftaicomp/
5. Your assessment of how interesting the game/competition is in terms of allowing us to explore AI techniques,

6. Whether there will be a competition next year (so we can perhaps enter it!)

Many of the game competitions above have been described in journal and conference papers (e.g. [KT12], [GLP05], [STY+11], [LLT+10], [RL11]). There are also a number of papers describing various AI approaches employed by participants in past competitions (e.g. these\footnote{http://aibirds.org/symposium-on-ai-in-angry-birds/accepted-papers.html}). Feel free to explore.

References


