The 3rd Stratego Computer World Championship

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The 3rd Stratego Computer World Championship

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1. INTRODUCTION

Stratego is a board game with a military setting that was first patented in 1960 by the Milton Bradley Company. The objective is to capture the opponent's flag. Each of the players chooses a custom setup of pieces at the start of the game, without showing the opponent the rank of each piece. During the game, the pieces are revealed as they attack and capture each other. Bluffing and concealing pieces play an important role in this game.

Computer programs for Stratego AI have existed since the mid-eighties. However, due to the high number of possibilities in a game, the development of intelligent programs can still be considered as being in its infancy. The annual Computer Stratego World Championship is a competition of Stratego playing programs, which was first held in 2007. It has established itself as forum for exchange in the Stratego AI problem domain.

The 3rd annual Computer Stratego World Championship was held in November of 2009. The participating computer programs were competing in a round-robin tournament. The tournament committee encourages new participants for the 2010 tournament, and will be happy to assist on technical issues.

2. TOURNAMENT FORMAT

The rules applied to the tournament were the ones defined by the International Stratego Federation (2008). Similar to the previous years, the tournament consisted of 5 games against each opponent, which were played online on the Metaforge server (Metaforge, 2009). As a modification to the previous tournaments, this year the games were centrally managed by a game master who scheduled, launched and monitored the games of all participant pairings. For easier execution of the tournament, the beginning of games was not systematically altered between opponents with the assumption that moving first did not confer an advantage. The games were open to the public, observers were able to follow the schedule and watch games in real-time on the Metaforge web site.

3. PARTICIPANTS

This year 8 programs from 5 countries registered (see Table 1), of which there were 2 new participants (Hayati and Zixerqath). For details, please visit the tournament web site (Championship Homepage, 2009).

Program	Programmer	Country	1st Tournament
Hayati	Omer Weissbrod & Ziv Cohen	Israel	2009
Hobbes	Maarten Schadd	Netherlands	2008
Invincible	Vincent de Boer	Netherlands	2007
Master of the Flag 1	Sven Jug	Germany	2007
Master of the Flag 2	Sven Jug	Germany	2007
Probe	Imer Satz	US	2007
Reveal Your Rank!	Raimonds Rudmanis	Latvia	2007
Zixerqath	Matt Stowe	US	2009

Table 1: List of participants

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4. RESULTS

The title went to Master of the Flag 2 this year, followed by Invincible (2nd place) and Probe (3rd place) (see Table 2). This means that Probe was not able to defend its title. A closer look at the results reveals a gap between the top three programs and the remaining ones. This leads to believe that these top three programs have reached a higher maturity level. This is confirmed by consistent results against the weaker programs. Results from all other pairings appear to be less predictable even though some programs scored noticeably higher than others in the end. More information on the tournament and individual matches can be found online (Championship Homepage, 2009).

Program	Wins	Draws	Losses	MotF 2	Invincible	Probe	RYR!	MotF 1	Zixerqath	Hobbes	Hayati
MotF 2	30	3	2		3-0-2	2-3-0	5-0-0	5-0-0	5-0-0	5-0-0	5-0-0
Invincible	28	0	7	2-0-3		2-0-3	4-0-1	5-0-0	5-0-0	5-0-0	5-0-0
Probe	26	3	6	0-3-2	3-0-2		4-0-1	5-0-0	5-0-0	5-0-0	4-0-1
RYR!	15	0	20	0-0-5	1-0-4	1-0-4		2-0-3	2-0-3	4-0-1	5-0-0
MotF 1	12	4	19	0-0-5	0-0-5	0-0-5	3-0-2		4-0-1	3-1-1	2-3-0
Zixerqath	10	0	25	0-0-5	0-0-5	0-0-5	3-0-2	1-0-4		2-0-3	4-0-1
Hobbes	9	1	25	0-0-5	0-0-5	0-0-5	1-0-4	1-1-3	3-0-2		4-0-1
Hayati	3	3	29	0-0-5	0-0-5	1-0-4	0-0-5	0-3-2	1-0-4	1-0-4	

Table 2: Cross Table

5. CONTROVERSIAL TOPICS

Chasing of pieces (continuous threatening of capturing another piece) has been a topic of discussion since the first year of the championship. Its controversy roots in the fact that a game can often be stalled by one program if it allows one of its revealed pieces to endlessly chase a weaker opponent piece. While it has not been observed that a program has purposely used chasing as a way to avoid a sure loss of a game, it has become evident that clear rules about chasing will be needed in the next tournament.

6. FUTURE OUTLOOK

While the overall strength of programs has progressed, it is unlikely that they can match the human skill within the next few years (Schadd and Satz, 2009). However, it is the hope of the programmers that a common body of knowledge will evolve out of the growing number of tournament participants and that one day humans players will see a serious challenge in competing with a Stratego AI. Computers in general have grown above and beyond in the last two decades, therefore nothing is impossible. The computer championship has been an upbeat event and hopes to continue to attract interest from programmers all around the globe.

ACKNOWLEDGEMENTS

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7. REFERENCES

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