

NEWS, INFORMATION, TOURNAMENTS, AND REPORTS

TAAI 2012 COMPUTER GAME TOURNAMENTS

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TAAI 2012 Computer Game Tournaments was held in National Cheng Kung University, Tainan, Taiwan, from November 16th to November 17st, 2012, as a related event of the 2012 Conference on Technologies and Applications of Artificial Intelligence (TAAI2012). In this event, there were ten game tournaments including Chinese Chess, Dark Chess, Connect6, Go 9×9, Go 13×13, Go 19×19, KillAllGo, NoGo, Mahjong and MiniShogi. A total of 48 teams from Japan, USA and Taiwan participated in the tournaments. The participants and the results are shown in Table 1.

Game	Rank	Program Name	Author(s)	Affiliation(s)
Chinese Chess	1	SHIGA	Ming-Cheng Cheng, Shi-Jim Yen	National Cheng Kung University (NCKU) and National Dong Hwa University (NDHU), Taiwan
	2	CHIMO	Wen-Jie Tseng, I-Chen Wu, Shun-Chin Hsu	National Chiao Tung University (NCTU), Taiwan
	3	BRAINCHES	Bo-Nian Chen	Institute of Information Science (IIS), Academia Sinica, Taiwan
Dark Chess	1	DIABLO	Cheng-Wei Chou, Shi-Jim Yen	NDHU, Taiwan
	2	FLIPPER	Bo-Nian Chen, Tsan-Sheng Hsu	IIS, Academia Sinica, Taiwan
	3	TUXEDO CAT	Terry Lao, Chih-Hung Chen	National Taiwan Normal University (NTNU), Taiwan
		DARKNESS	Kai-Siang Jhan	NTNU, Taiwan
Connect6	1	DB6	Ping-Hung Lin, Hsin-Ti Tsai, Hao-Hua Kang, Chieh-Min Chang, Yi-Shan Lin, I-Chen Wu, Ting-Han Wei	NCTU, Taiwan
	2	MOBILE6	Chi Hung Chung, Chia-Yun Hu, I-Chen Wu, Wen-Jie Tseng, Ting-Han Wei, Chieh-Min Chang	NCTU, Taiwan
	3	KAVALAN	Jung-Kuei Yang, Shi-Jim Yen	Lan Yang Institute of Technology (LYIT) and NDHU, Taiwan
Go 9×9	1	ZEN	Yoji Ojima, Hideki Kato	Team DEEP ZEN, Japan
	2	COLDMILK	Cheng-Wei Chou, Shi-Jim Yen, Jr-Chang Chen	NDHU and Chung Yuan Christian University (CYCU), Taiwan
	3	AYA	Hiroshi Yamashita	Phoenix Software, Japan
Go 13×13	1	ZEN	Yoji Ojima and Hideki Kato	Team DEEP ZEN, Japan
	2	MANYFACESOFGO	David Fotland	USA
	3	AYA	Hiroshi Yamashita	Phoenix Software, Japan
Go 19×19	1	ZEN	Yoji Ojima and Hideki Kato	Team DEEP ZEN, Japan
	2	MANYFACESOFGO	David Fotland	USA
	3	AYA	Hiroshi Yamashita	Phoenix Software, Japan

Table 1: The participants and the final standings of all game tournaments.

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NoGo	1	HAPPYNOGO	Bo-Syuan She	NCTU, Taiwan
	2	COLDMILK	Cheng-Wei Chou, Shi-Jim Yen, Jr-Chang Chen	NDHU and CYCU, Taiwan
	3	TESTBED	Ting-Fu Liao	NCTU, Taiwan
KillAllGo	1	COLDMILK	Cheng-Wei Chou, Shi-Jim Yen, Jr-Chang Chen	NDHU and CYCU, Taiwan
		HAPPYKILLALLGO	Chun-Yi Chen, Tsun-Tao Tso, Ting-Fu Liao, Bing-En Yang, I-Chen Wu	NCTU, Taiwan
Mahjong	1	LONGCAT	Cheng Hung Lin, I-Chen Wu	NCTU, Taiwan
	2	THOUSANDWIND	Shin-Yang Chen	NTNU, Taiwan
	3	GRANDSLAM	Cheng-Wei Chou and Shi-Jim Yen	NDHU, Taiwan
MiniShogi	1	CLAIR128	Takuya Obata	University of Electro-Communications, Japan
	2	EVG2012	Shun-Chin, Hsu	Chang Jung Christian University (CJCU), Taiwan.
	3	KANI	Chun-Chien Chen	CJCU, Taiwan
		St2012	Tony & Spring	CJCU, Taiwan
		JEEVES	Yun-Ching Liu	IIS, Academia Sinica, Taiwan

Table 1 (continued): The participants and the final standings of all game tournaments.

In Table 1, we see that the teams from Taiwan, were rather successful: four gold medals were won by the team from National Chiao Tung University (NCTU), three gold medals by the National Dong Hwa University (NDHU), and one gold medal by the National Cheng Kung University (NCKU). Among the rest, ZEN from Japan won three gold medals in the Go tournaments (including Go 9×9, Go 13×13, Go19×19), which has been reported separately (Lin and Yen, 2013). This report comments the remaining seven game tournaments.

The Chinese Chess tournament was won by SHIGA, Taiwan. SHIGA only lost one game to CHIMO in this tournament. SHIGA was designed to support a multiprocessor computer and executed on a 4.5GHz 8-core machine. It was able to search more than 20 plies by type-B search. The deeper search depth, background thinking and the well-sound opening book turned out to be the key factors of the victory. The runner-up was CHIMO, which achieved the bronze and silver medals in 15th and 16th Computer Olympiad, respectively. The third place was for BRAINCHESS, which also achieved the bronze medal in TCGA2012.

Dark Chess, also called Chinese Dark Chess, is a popular game played by many Chinese and Taiwanese persons (Chen, Shen, and Hsu, 2010). Six teams participated in the Dark Chess tournament. We congratulate DIABLO on winning the gold medal. DIABLO is the successor of MODARK, which was the winner of the Dark Chess tournament in the 15th Computer Olympiad, 2010. The tournament in 2012 used the competition platform which was developed by IIS, Sinica, Taiwan. This platform could save a great deal of operation times and avoid operating errors. In the tournament, DIABLO used Monte Carlo Tree Search (MCTS), and won most games against other teams which all used alpha-beta search and normal evaluation functions. The results showed a great progress on Dark Chess in general and demonstrated that MCTS is also promising for Dark Chess.

Connect6 is a kind of six-in-a-row game that was invented by Wu (Wu *et al.*, 2005) and has become one of the games on Computer Olympiad since 2005. In the Connect6 tournament, three teams participated and DB6 won the gold medal. MOBILE6 and KAVALAN landed at the second and third places, respectively. DB6 won all six games against MOBILE6 and KAVALAN in this tournament. DB6 was actually a variation from NCTU6, which was the champion in the 11th and 13th Computer Olympiad. DB6 improved over NCTU6 by using the technique TD(0), a kind of temporal difference learning method. The second place was for MOBILE6, a newcomer at TAAI. MOBILE6 was designed for mobile devices with limited resources, and was performed on Apple iPad in this tournament. KAVALAN won the bronze medal, the same rank as it had in TCGA2012.

Mahjong is a game that originated in China, commonly played by four players. It is an imperfect information game, and each player's tile is unknown to other players. Similar to Dark Chess, Mahjong is a game of skill, strategy, and calculation that is involved in a certain degree of chance. In the Mahjong tournament, four teams participated. LONGCAT won the gold medal, which was also the champion of the

Mahjong tournament in TCGA2012. THOUSANDWIND and GRANDSLAM received the silver and bronze medals, respectively.

KillAllGo is a variant of Go. In KillAllGo, the handicap is 2. The goal by Black is to *kill* all of the opponent's stones, while the goal by White is to live with at least one group. In 2012, two teams, COLDMILK and HAPPYKILLALLGO, participated. They played many rounds, and the result was still a tie. In the end, the chair decided to grant both of them gold medals.

NoGo is another variant of Go. The rules are the same as for Go except for the following. The first player who either suicides or kills a group loses the game. The board size may be 19×19, 13×13 or 9×9, which was used this year. Four teams participated in the NoGo tournament. The gold medal was for HAPPYNOGO, a newcomer. THOUSANDWIND and TESTBED received the silver and bronze medals, respectively.

MiniShogi, also known as 55Shogi, is a simplified version of Shogi. The board size is 5×5, and the rules are similar to Shogi. Six teams from Japan and Taiwan participated in the 2012 tournament. CLAIR128 obtained the gold medal by winning every game. The second place was for EVG2012, which achieved the bronze medal in TCGA2012. The three teams, KANI, ST2012, and JEEVES, achieved the same scores and received the bronze medals.



I-Chen Wu(DB6), Jung-Kuei Yang (KAVALAN), Chieh-Min Chang (DB6), and Chi-Hung Chung (MOBILE6).



Shun-Chin Hsu (EVG), Ting-Fu Liao (TESTBED), Bo-Syuan She (HAPPYNOGO), and Cheng-Wei Chou (COLDMILK).

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