REPORT ON THE 11TH CSA WORLD COMPUTER-SHOGI CHAMPIONSHIP

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1. INTRODUCTION

This year, the CSA tournament was held for the 11th time. After being hosted by the Sheraton Hotel for years, the tournament had moved to a different location this time. The Kazusa Academic Park in Kisarazu is a very impressive complex of a top class hotel (Okura) and a big conference center located just outside Tokyo.

The CSA tournament finally broke the magic number of 50 participants this year. This time there were 55 programs trying their luck. Also, the CSA tournament finally had the confidence to call itself the World Computer Shogi Championships. Of course, everyone already knew that the tournament had this status, as it is the only computer shogi tournament, but for the first time this year it was also billed as such. As for the "World" part: this year there were exactly the same non-Japanese participants as last year: Jeff Rollason's Shotest from England, Pauli Misikangas' Shocky from Finland, KCC Shogi from North Korea and my program Spear from The Netherlands (even though I have lived in Japan for a long time). This year, KCC Shogi was the center of attention. There was a camera crew of Japan's top news program from the Asahi television station following both KCC Shogi and IS Shogi (the winner last year), hoping for a Japanese-Korean showdown in the finals. The North Koreans had come to the tournament with a big delegation. In previous years, there were only two Japanese operators, but this time the main programmers and some company officials had also made the trip to Kisarazu. Of course, they needed to clear the preliminary stage first to get a shot a the championship, something KCC Shogi failed to do last year.

The tournament system had changed only slightly compared to last year's tournament. There were still three stages: eight programs would qualify from the first preliminary tournament to the second preliminary tournament. This second preliminary tournament would have 24 programs. Last year five programs from this second preliminary tournament qualified for the finals, with three programs seeded from the year before. This year the finals would be a tournament of 10 programs, so 7 programs would qualify for the finals from the second preliminary tournament. Also, the time limits for each game were 25 minutes (minimum 1 second per move) for all tournament stages.

2. THE FIRST PRELIMINARY STAGE

Last year, Spear easily qualified for the second round with six wins and only one loss. Still, I felt that it might be a little tougher this time. First, there would be no less than 36 entries, of which only 8 programs would qualify. Furthermore, there were two strong programs that re-entered the tournament after one or more years absence. Yano Shogi was a former finalist and a program that was written completely in assembler code. It seemed that the time off had been used to rewrite the program in C. The second re-entry that was expected to do well was Amano Shogi. This program had never qualified for the finals, but had played in the second preliminary tournament for years.

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No	Program Name	1	2	3	4	5	6	7	Pt	SOS	SB
*1	Yano Shogi 4	16+	36+	5+	20+	4+	3=	6+	6.5	27.5	22.0
*2	Amano Shogi	10+	29+	20+	4-	3+	5+	9+	6.0	29.5	24.5
*3	Hyper Shogi 7	22+	8+	11+	15+	2-	1=	4+	5.5	34.0	21.5
*4	SPEAR	30+	14+	15+	2+	1-	9+	3-	5.0	32.5	20.5
*5	Ojiro	18+	28+	1-	13+	26+	2-	14+	5.0	29.5	17.0
*6	Suzu no ne	12+	24+	23+	9-	13+	20+	1-	5.0	28.0	17.0
*7	Usapyon	24+	12-	14-	22+	28+	27+	17+	5.0	23.0	15.0
*8	TACOS	34+	3-	13-	30+	23+	22+	12+	5.0	23.0	13.5
9	S1.6	19+	11=	27+	6+	21+	4-	2-	4.5	30.0	14.5
10	Isobe Shogi	2-	15-	31+	25=	30+	24+	13+	4.5	24.0	11.0
11	Fuku Shogi	25+	9=	3-	21-	19+	35+	20+	4.5	23.5	10.5
12	Shoko	6-	7+	17+	14-	16+	15+	8-	4.0	31.0	17.0
13	Oni Shogi	28+	18+	8+	5-	6-	16+	10-	4.0	29.5	15.0
14	Sekushii Aichan	32+	4-	7+	12+	15-	21+	5-	4.0	28.0	14.0
15	Amano Sofu	29+	10+	4-	3-	14+	12-	25+	4.0	28.0	13.5
16	Yamada Shogi	1-	27+	18+	26+	12-	13-	23+	4.0	27.5	13.0
17	Au Au Shogi	23-	21+	12-	19+	33+	26+	7-	4.0	23.0	11.0
18	Sunada Shogi	5-	13-	16-	34+	32+	33+	21+	4.0	21.0	8.0
19	Aoi B	9-	25=	36+	17-	11-	30+	27+	3.5	21.0	5.0
20	Maruden Shogi	31+	35+	2-	1-	22+	6-	11-	3.0	28.0	6.0
21	Maruyama Shogi	26+	17-	35+	11+	9-	14-	18-	3.0	25.0	8.5
22	Shuto Shogi	3-	34+	25+	7-	20-	8-	29+	3.0	25.0	6.5
23	100.exe	17+	26-	6-	35+	8-	28+	16-	3.0	24.0	7.0
24	Piece Captor	7-	6-	32+	29+	27-	10-	31+	3.0	21.5	4.5
25	C-mode	11-	19=	22-	10=	31+	29+	15-	3.0	23.5	4.0
26	Nagayoshi Shogi	21-	23+	33+	16-	5-	17-	28+	3.0	22.5	6.5
27	Yokoyama Shogi	36+	16-	9-	33+	24+	7-	19-	3.0	21.5	4.5
28	Tsubakihara Shogi	13-	5-	34+	32+	7-	23-	26-	2.0	23.5	3.5
29	Narikin Shogi	15-	2-	30+	24-	35+	25-	22-	2.0	22.0	3.0
30	Shogi Moba	4-	32+	29-	8-	10-	19-	36+	2.0	22.0	2.0
31	U10	20-	33-	10-	36+	25-	34+	24-	2.0	16.5	1.5
32	Meijin Konta	14-	30-	24-	28-	18-	36+	35+	2.0	16.0	1.0
33	JavaTaikyoku	35-	31+	26-	27-	17-	18-	34=	1.5	18.5	2.0
34	Toshizo Shogi	8-	22-	28-	18-	36+	31-	33=	1.5	17.5	0.0
35	Suzuki Shogi	33+	20-	21-	23-	29-	11-	32-	1.0	19.0	1.5
36	TECC 1	27-	1-	19-	31-	34-	32-	30-	0.0	20.5	0.0

Table 1: Results of the First Qualification Round.
* Yano Shogi 4, Amano Shogi, Hyper Shogi 7, SPEAR, Ojiro, Suzu no ne, Usapyon and TACOS qualify for the second qualification round.

This would be a stable program and that is probably the most important thing in the cellar of the CSA tournament.

The first preliminary tournament went more or less as expected. The winner of this stage was Yano Shogi, which only drew against Hyper Shogi (repetition of moves) and won all its other games. Second place was for Amano Shogi, only losing against Spear, but because of a lucky draw it didn't have to play Yano Shogi. Third place was for Hyper Shogi, a program that just dropped out of second preliminary tournamant last year. My program Spear ended in fifth place. This was the optimal result as my games against Yano Shogi and Hyper Shogi showed that there is still a lot to do on my program. Actually, I got more than I deserved, as Spear was completely lost in the second round game against Sekushii Aichan. Fifth place was for Ojiro, a program that also qualified last year. The remaining three programs to go through were all entries that cleared the first qualification stage for the first time. Suzu no ne got sixth place, Usapyon got in seventh and the final program to go through was TACOS, the program of the students of Iida Hiroyuki's group at Shizuoka university. Especially Usapyon had a very favorable draw with only two programs that ended in the top ten (it lost both of these games). The pairings in the CSA tournament are a point of discussion every year and this year the programmers of S1.6 were the unlucky ones. A draw in the second round against

Fuku Shogi decided their fate and in the last round they had to play Amano Shogi instead one of their rivals for qualification. In the end they had a huge SOS score, but just fell half a point short to qualify.

This first preliminary round was much tougher than I expected. There are a lot of programs here that can play a reasonable game of shogi and only 8 of them qualify for the next stage. The average improvement in playing strength can be judged by looking at the results of Isobe Shogi (4.5 points), Yamada Shogi (4 points), Maruden Shogi (3 points) and Maruyama Shogi (3 points). These programs all played in the second qualification round last year, but didn't come close to qualification this year.

3. THE SECOND PRELIMINARY STAGE

The second qualification round promised to be very interesting. Seven programs would qualify, but there were quite a large number of candidates. Favorite were of course Kanazawa Shogi and Kakinoki Shogi, but for the other places in the final a heated battle was expected. KFEnd, Shotest and Shocky played in the final last year, but KCC Shogi and Gekizashi were expected to do really well. Furthermore, Eisei Meijin, Sogin and Tancho are always very close to qualifying for the finals and might make it this time. Finally, Yano Shogi, Amano Shogi and Hyper Shogi had played well the day before and would now be really tested.

The first round had almost no surprises, but the tournament really came alive in the second and the third round. Kanazawa Shogi and Kakinoki Shogi lost two games in a row! KCC Shogi showed it was the big favorite to win the title by first beating Kakinoki Shogi in round two and then Kanazawa Shogi in round three. Kanazawa Shogi had serious hardware problems, as the new processor they were using heated up too much, which indirectly caused the program to lose in the second round against Tancho. From that moment on, Kanazawa Shogi played with a big electric fan pointing straight into the PC they were using. This was just enough to play a game without overheating, but it must have been torture to sit and wait for the hardware to hold out or break down. Kakinoki Shogi lost its third round game to Gekizashi and a sensational line-up for the final seemed to be in the making with KCC Shogi, Gekizashi, Sogin, Eisei Meijin and Shocky all starting with three wins. This group was followed by Hyper Shogi, Shotest, Yano Shogi and Suzu no ne with two wins and one loss.

In round 4 KCC Shogi lost surprisingly against Hyper Shogi, but most other games went as expected. Gekizashi beat Shocky and Eisei Meijin lost against Sogin, cutting the group of leaders to two programs. Biggest surprise of the round was the loss of Tancho against Usapyon. Tancho had only one and a half points from four games here and this seemed completely hopeless.

Round 5 and 6 brought bad news for Gekizashi and the two non-Japanese favorites Shotest and Shocky. All three programs lost two games in a row and suddenly the tournament was getting very tight as there were no more undefeated programs. KCC Shogi, Hyper Shogi and Sogin led with 5 wins and one loss, followed by Gekizashi, Kakinoki Shogi, Kanazawa Shogi, Yano Shogi, Ryu no Tamago and Eisei Meijin. Further down the table, Spear had recovered from a terrible 1-3 start (including a loss against KFEnd caused by the same bug that almost lost the game against Aichan earlier). Two wins in row had brought all European programs on the same score, as Shocky and Shotest also had 3 wins and 3 losses.

In round 7, KCC Shogi became the first program to secure a place in the final with a win over Sogin. Hyper Shogi lost against Gekizashi, leaving both programs with 5 wins and 2 losses. Kanazawa Shogi and Kakinoki Shogi completed their recovery by winning their fourth game in a row, sharing second place behind KCC Shogi. Bad news for Shotest and Shocky, losing their third and fourth game in a row respectively. It looked like KCC Shogi would be the only non-Japanese program in the final. Actually, at this point Spear was the European program with the best qualification chance, as it had won its third game in a row and now had 4 wins from 7 games.

KCC Shogi also won in round 8, but it was more interesting to see what was happening behind them. Hyper Shogi beat Sogin to qualify for the final. A great achievement by the program that seemed to be struggling at times on the first day. Gekizashi also ended all doubts with a great victory over Kanazawa Shogi. Kakinoki Shogi also qualified with a win over Ryu no Tamago. Four places

No	Program Name	1	2	3	4	5	6	7	8	9	Pt	SOS	SB
*1	KCC Shogi	13+	4+	5+	2-	14+	8+	7+	11+	3+	8.0	49.0	42.0
*2	Hyper Shogi 7	6+	10+	8-	1+	16+	14+	3-	7+	4+	7.0	48.5	37.5
*3	Gekizashi	21+	12+	4+	14+	11-	7-	2+	5+	1-	6.0	49.0	31.0
*4	Kakinoki Shogi	18+	1-	3-	9+	24+	15+	11+	10+	2-	6.0	45.5	24.5
*5	Kanazawa Shogi	10+	6-	1-	24+	15+	11+	14+	3-	9+	6.0	44.0	24.5
*6	Tancho under Reiki	2-	5+	23=	17-	8+	22+	15-	9+	7+	5.5	40.0	23.0
*7	Sogin	16+	8+	12+	11+	9-	3+	1-	2-	6-	5.0	50.5	25.0
8	Shotest	19+	7-	2+	16+	6-	1-	9-	17+	15+	5.0	45.5	22.0
9	Yano Shogi	14-	17+	19+	4-	7+	12+	8+	6-	5-	5.0	43.5	22.0
10	Ryu no Tamago	5-	2-	13+	19+	17+	16+	12-	4-	20+	5.0	43.0	19.0
11	Eisei Meijin	20+	23+	24+	7-	3+	5-	4-	1-	17+	5.0	41.5	16.5
12	KFEnd	15+	3-	7-	13+	20+	9-	10+	14-	18+	5.0	41.0	21.0
13	SPEAR	1-	18+	10-	12-	22+	19+	16+	15-	14+	5.0	39.0	17.0
14	Shocky	9+	22+	17+	3-	1-	2-	5-	12+	13-	4.0	48.0	16.0
15	Takada Shogi	12-	21+	16-	23+	5-	4-	6+	13+	8-	4.0	41.5	15.5
16	Suzu no ne	7-	19+	15+	8-	2-	10-	13-	20+	21+	4.0	40.0	13.0
17	Usapyon	22+	9-	14-	6+	10-	24+	21+	8-	11-	4.0	36.0	12.0
18	Sekita Shogi	4-	13-	21-	20+	19-	23+	24+	22+	12-	4.0	30.5	8.5
19	Nazoteki Denki	8-	16-	9-	10-	18+	13-	22-	23+	24+	3.0	33.5	7.5
20	Amano Shogi	11-	24-	22+	18-	12-	21+	23+	16-	10-	3.0	31.5	7.0
21	Ojiro	3-	15-	18+	22-	23+	20-	17-	24+	16-	3.0	30.5	7.5
22	Sakura	17-	14-	20-	21+	13-	6-	19+	18-	23-	2.0	33.5	6.0
23	Sakashita Shogi	24=	11-	6=	15-	21-	18-	20-	19-	22+	2.0	31.0	2.0
24	TACOS	23=	20+	11-	5-	4-	17-	18-	21-	19-	1.5	36.0	3.0

Table 2: Results of the Second Qualification Round.
* KCC Shogi, Hyper Shogi 7, Gekizashi, Kakinoki Shogi, Kanazawa Shogi, Tancho under Reiki and Sogin qualify for the finals.

in the final decided, three places left. With six wins qualification was certain, but it was possible that one or two programs with 5 wins would qualify as well. There were still five programs with a qualification chance: Kanazawa Shogi (5 points), Sogin (5 points), Yano Shogi (5 points), Tancho (amazing recovery and 4 and half points) and Shotest (4 points). Spear was no longer among them with a loss against Takada Shogi. With the number of weak opponents, even 5 points would not be enough for Spear to qualify. Still, the final round was vital for me as well, as a win would secure a seeded place in the second qualification round next year.

The final round paired Kanazawa Shogi against Yano Shogi, Sogin against Tancho and Shotest against Takada Shogi. Kanazawa Shogi beat Yano Shogi and the game Shotest-Takada Shogi was also over quickly with a win by Shotest. A lot of complicated calculations followed with the conclusion that Sogin would qualify whatever the result of the final game. If Sogin would win, Shotest would be the lucky program to qualify with five wins. If Tancho would win, Tancho would qualify. This game was a very long battle and for a long time it looked like Sogin was winning. However, Tancho managed to turn the tables and qualify for the finals, which was almost unthinkable after its abysmal start. Tancho has been very close to the finals for years without quite making it, so it was good to see the efforts of Todoroki-san finally being rewarded.

4. THE FINALS

For the finals, the tournament hall had been turned into a perfect place to follow the games. Every round two huge projectors displayed two games on big screens and also two games were commented by the shogi professionals Katsumata and Sanada. Especially Katsumata is very interested in computer shogi and is a guest at the CSA tournament every year. Katsumata is a real entertainer with his great knowledge and hilarious comments on the games.

The finals this year promised to be a showdown between IS Shogi, KCC Shogi and maybe YSS. Also,

Gekizashi's performance would be watched closely. The first two rounds went almost completely as expected, with IS Shogi and KCC Shogi winning both their games. Kanazawa Shogi also started well. The win over YSS in the second round either indicated that they had managed to solve some of the problems overnight or that YSS was not as strong as expected. Gekizashi found the going a lot tougher in the finals with two losses to start the day. However, losing against IS Shogi and KCC Shogi can't really be called upsets.

In round 3 Gekizashi showed what it can do by beating Kanazawa Shogi for the second day in a row and followed this in round 4 with a win over Kakinoki Shogi. After four rounds the tournament seemed to turn into a two horse race between IS Shogi and KCC Shogi, just as the television crew from Asahi television had hoped. These two programs were followed by Kanazawa Shogi and YSS, but from the way these two played so far it seemed unlikely that they would catch up.

However, round 5 changed that. KCC Shogi got an overwhelming position against Kanazawa Shogi and at some point I was certain that the game would be over in a couple of moves. This didn't happen. Kanazawa Shogi managed to hang in there, confusing KCC Shogi just enough to get some attack of its own going. KCC Shogi had many chances to win, but continued to play the wrong attacking plans and after an epic battle Kanazawa Shogi won the game. In the same round YSS lost against Gekizashi, who was suddenly making strong claims on the coveted third place that would mean automatic qualification for next year's finals.

Round 6 more or less ended all hopes for Kanazawa Shogi to get another CSA crown as IS Shogi beat Kanazawa Shogi to make it six wins in a row. YSS lost against KCC Shogi, so now it was really between IS Shogi and KCC Shogi for the championship with IS Shogi having the advantage of being undefeated. This advantage was almost lost in round 7 as IS Shogi came very close to losing against Kawabata Shogi. So far, Kawabata Shogi hadn't made any impression at all with its two wins coming against Sogin and Tancho. However, the game against IS Shogi was different. At some point there was even a forced win for Kawabata Shogi, but the program didn't find it. IS Shogi desperately defended and when Kawabata Shogi got into time trouble, things slowly started to turn around. In the end IS Shogi won the game, but Kawabata Shogi showed in this game that the program is stronger than the number of wins indicated.

Round 8 saw the long awaited battle between the boys from Tokyo University and the North Koreans. If IS Shogi would win this game, it would win the championship for the second year in a row. However, if KCC Shogi would win, it could win the title with a victory over Kawabata Shogi in the final round. It was a very high level game. After some initial fighting, IS Shogi got the advantage, but KCC Shogi did everything to stay in the game. IS Shogi couldn't find the best winning plan and KCC Shogi's counter attack, which had seemed very slow, suddenly started to look very dangerous. In the end IS Shogi just managed to give its attack winning strength and decide the game with one move difference. So, the old world computer shogi champion is also the new world champion and the computer shogi world has to wait at least another year for its first non-Japanese tournament winner.

The final round had no surprises as all top programs won. IS Shogi therefore won the title with a perfect score, but it was a little surprising to see Kanazawa Shogi in second place. The win against KCC Shogi turned out to be a vital one, as Kanazawa Shogi just managed to squeeze passed the Koreans on SB points. Fourth place was for Gekizashi, followed by YSS and Kakinoki Shogi. After these programs there was a two point gap to Kawabata Shogi, Hyper Shogi and Sogin with Tancho ending in last place.

5. CONCLUSIONS

I think the programs made an important step forward compared to last year. This was best illustrated by the performance of Kawabata Shogi and Shotest. Both Kawabata and Jeff had almost no time to work on their programs in the past year and both programs did much worse than last year. I followed almost all games of IS Shogi in the finals and I was impressed with the way this program plays. It still has some weaknesses in the opening and middle game, but especially in the endgame it is almost unbeatable. Tanase, a reasonable player himself, told me that he has already given up on trying to understand the program's play in the endgame as he found that the program sees much more than

No	Program Name	1	2	3	4	5	6	7	8	9	Pt	SB
1	IS Shogi	9+	4+	6+	10+	8+	2+	7+	3+	5+	9	36
2	Kanazawa Shogi	8+	5+	4-	7+	3+	1-	10+	9+	6+	7	23
3	KCC Shogi	4+	6+	10+	9+	2-	5+	8+	1-	7+	7	22
4	Gekizashi	3-	1-	2+	6+	5+	7+	9+	10-	8+	6	22
5	YSS 11	10+	2-	9+	8+	4-	3-	6+	7+	1-	5	11
6	Kakinoki Shogi	7+	3-	1-	4-	9+	10+	5-	8+	2-	4	7
7	Kawabata Shogi	6-	9+	8-	2-	10+	4-	1-	5-	3-	2	3
8	Hyper Shogi 7	2-	10+	7+	5-	1-	9-	3-	6-	4-	2	3
9	Sogin	1-	7-	5-	3-	6-	8+	4-	2-	10+	2	3
10	Tancho under Reiki	5-	8-	3-	1-	7-	6-	2-	4+	9-	1	6

Table 3: Results of the Finals.

he does.

Another observation is that computer shogi is becoming more and more a team effort. Improving different parts of a shogi program seems to be too complicated to do by one person. The first four programs in this tournament all were developed by a team. Most impressive is of course the manpower that was put into KCC Shogi, but it seems that winning the CSA tournament on your own is almost impossible. Maybe it is time to think about combining the skills of the programmers from Europe (Jeff, Pauli and me) and create EURO Shogi. This might be the only way to break through the Asian supremacy.

6. THE PROGRAMS

IS Shogi : Winning the CSA tournament without losing a single game is impressive, especially with the high level of competition these days. Last year I thought the program still showed some weaknesses, but this year IS Shogi was one level stronger than all the other programs.

Kanazawa Shogi : To me Kanazawa's runner-up finish was a big surprise. Kanazawa Shogi seemed to be struggling all tournament, either with malfunctioning hardware or with bad shogi positions. The team was either lucky or had worked very hard in the night before the finals to fix most of the problems. Kanazawa Shogi's results show that it is not necessarily a bad thing to play the qualification tournament, as there is still time to fix bugs.

KCC Shogi : This was the program in the center of attention all tournament. Not only the TV crew following it around and the large entourage made this the program to watch. It was vastly improved over last year's version and it could only be stopped by IS Shogi. It seems that KCC is prepared to put a lot of money in this project, as they even hired people from the Niigata shogi club to build an opening book with more than a million positions. KCC Shogi is already favorite to win next year's tournament.

Gekizashi : This program is searching extremely deep and accurate. If weaknesses in the opening can be improved, this program is a dark horse for the title. Problem will be how much time the team can spent on shogi programming. Gekizashi is developed by students from Tokyo university, Japan's most prestigious university. This means that at some point they will have to choose between shogi programming and a "normal" career. Graduates from Tokyo university get all the good jobs in Japan, so this will not be an easy decision.

YSS : This year's performance was a little disappointing. YSS beat all programs that ended below him in the table, but didn't get a single win against one of the favorites. Maybe Yamashita's efforts on the Go program Aya take too much time. I think it might be a good idea to form a team to get back among the favorites to win another CSA title.

Kakinoki Shogi : Every year, Kakinoki Shogi qualifies for the finals without too much effort. This is of course a great result, but after that it never gets into a position to actually win a title. Maybe Kakinoki and Yamashita should team up.

Kawabata Shogi : Last year Kawabata Shogi crowned a great performance with third place, but after that Kawabata had almost no time to work on the program. In the end he played with more or less the same version as last year and this resulted in only two wins.

Hyper Shogi : For me this program was the surprise of the tournament. Especially, its performance on the second day was outstanding and it needs just a little bit more to compete with the big guys.

Sogin : Sogin looked very good in its first six games, winning five of them. However, after that it only won two more games of its remaining twelve. A stable program, but in its current form it doesn't look like it will go any further than being on the border line of qualification for the finals every year.

Tancho : Was a little lucky to get into the finals and seemed to be the weakest program of the ten finalists. Still, it managed to avoid losing all games with a fine win over Gekizashi.