REPORT ON THE 11TH CSA 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 at the other side of Tokyo Bay. However, most impressive is probably that it is built in the middle of nowhere. Getting there is not too difficult, as there is a bus from Tokyo station that goes directly to the tournament venue, but for the last ten minutes this bus only goes through narrow streets into the hills. It seems the Kazusa Academic Park was built when the Japanese economy was still booming (about 5 years ago) and now it has problems drawing people because of its remote location and high overhead. I am sure the CSA got a good deal and all participants benefited with very reasonable prices for the hotel rooms. Still, I will personally miss the Sheraton with its bustling atmosphere of families with young children wearing Mickey Mouse ears on their way to and from nearby Tokyo Disneyland.

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 from this second preliminary tournament five programs 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.

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2. BEFORE THE TOURNAMENT

In the weeks before the tournament I was getting quite confident about the new version of my program Spear. It had again be completely rewritten, and it had benefited greatly from some joint work with Jeff Rollason. In his program Shotest, he uses an interesting method to guide the program through the early stages of the game. Opening books are not very effective in shogi and playing the opening and early middle game has become the main weakness of the strong shogi programs. I used Jeff's idea in my program, expanding it and tuning it for about two months. This helped my program to survive the opening in test games against the strong programs. Spear was still losing the majority of its games against commercial programs, but most of the losses were close games and the wins were sometimes very impressive. My biggest confidence boost came on the evening before the tournament, when Spear beat the tournament version of Shotest after a long struggle. This was the first time (after numerous losses), but I felt my program was ready. My aim would be qualification for the second round and a majority of wins in the second qualification stage to make sure that Spear wouldn't have to start from the bottom of the tournament again next year.

3. THE FIRST PRELIMINARY STAGE

Last year, Spear easily qualified for the second round with six wins and only one loss. However, I knew this was a little more than the program deserved, so I actually felt quite nervous before the start of the first qualification tournament. 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. This would be a stable program and that is probably the most important thing in the cellar of the CSA tournament.

My second fear was that I had tuned my program too much to play strong programs. The commercially available programs all play reasonable shogi, and it is easy to get lured into a false feeling of security after playing good openings against these programs all the time. The programs in this qualification round would have almost no opening book and often start the game in a very strange way. I had no idea how my program would deal with that.

My fears became reality in the first two rounds of the tournament. First Spear messed up the opening against Shogi Moba, but this program was too weak to follow this up and despite some anxious moments, Spear won quite quickly in the end. Worse was what happened in the second round. Sekushii Aichan is the program of the students of the lab of professor Kotani and this program has participated in this tournament before. Again Spear got into an opening build-up it didn't recognize and it played a completely wrong opening strategy. Unlike the first round opponent, Aichan followed this with a strong attack and when a terrible bug in my program cost Spear a major piece and time, Aichan had a completely won position. I could hardly bare to look as for several moves as there was a simple and very quick win. Simple for humans, but not for computers as it turned out. Aichan let Spear escape and under time pressure didn't see a simple mating threat (the game had already turned around by then), which abruptly ended the game in Spear's favor.

There went my carefully built-up confidence, but I had two wins to hide my embarrassment. It seemed that the shogi Gods thought that I had suffered enough after this, as the next two rounds brought good wins against the Amano family. I first beat the program of the son (Amano Sofu) and then the program of the father (Amano Shogi). I'm afraid I am not welcome for dinner at the home of the Amano's anymore. These wins put me at the top of the table with Yano Shogi and Hyper Shogi and meant that I needed only one win from the remaining three games to qualify for the next round. This win would not come in the fifth round, as I lost against Yano Shogi. Interestingly, Spear found a bug in Yano Shogi: it would not avoid repetition of moves (which is a draw in computer shogi). Unfortunately, Spear was programmed to avoid this if possible, as a draw would almost never

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.

be a desirable result in this qualification round. I had forgotten to reset the parameter to avoid draws before the game against Yano Shogi. When both programs didn't know how to continue and started moving around pieces aimlessly, Spear finally got over an evaluation threshold and opened the game at a very bad time. Yano Shogi was quick to take advantage and steamrolled over Spear's position after that.

Still one more game to win and my next opponent also didn't look easy. S1.6 is the program of the students of the lab of professor Noshita and one of the veteran program in the CSA tournament (it even played in the finals a couple of years back). Furthermore, I had lost against this program last year because of a programming bug. Surprisingly, this game went very smoothly. I was quite lucky that a strange opening this time worked in Spear's favor. My program is not programmed to play quick attacks, but in this game it was more or less forced in one as its bad castle could not be improved (this is the main priority in the opening). The attack went perfectly and Spear got an overwhelming position. S1.6 struggled for a long time after that, but never got a chance to get back in the game. This win was a great relief, as this meant qualification for the second round despite all the problems that my program had, especially in the second round against Sekushii Aichan.

My last round game was against Hyper Shogi. This is a strong program that only just dropped out of the second group last year. Also, I had lost quite badly against this program last year. Still, Wakabayashi (the programmer of Hyper Shogi) was unhappy with the pairing for the last round. It had lost a game against Amano Shogi and drawn the game against Yano Shogi, so losing against Spear would actually mean that Hyper Shogi wouldn't qualify despite its perfect start! This game was probably the most interesting one that Spear played in the first qualification tournament. Hyper Shogi built a strong anaguma, but Spear managed to win some material in the middle game. However, it didn't see how to continue from there and slowly Hyper Shogi got the upper hand with some nice pressure in the center. Spear had to retreat further and further and in the end the only question was if Hyper Shogi would be able to win within the time limit. In the end it managed to do so with a couple of minutes to spare, so I didn't have to think about whether it would be best to resign a lost position just before time would run out.

So both Spear and Hyper Shogi qualified for the second day. The first preliminary tournament was won by Yano Shogi, which only drew against Hyper Shogi and won all its other games. Second place was for Amano Shogi, which only lost against Spear, but because of a lucky draw didn't have to play Yano Shogi. After Hyper Shogi and Spear, 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.

4. 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 was of course Kanazawa Shogi and Kakinoki Shogi was also expected to qualify, 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 second day started with me being the center of attention. Well, that's is not entirely correct, as the camera was actually pointed at my opponent. I had to play the mighty KCC Shogi in the first round and everyone seemed very interested to know how the program would do. I guess the programmers must have been happy and maybe a little relieved, as KCC Shogi completely crushed Spear. The opening was pretty even, but after that Spear was slowly but surely driven back until it had almost no space to move. A complete victory for the Koreans.

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 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

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.

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 from a hopeless position. 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. As for Spear, it had to play the final game against Shocky. This game looked like it would have slow build-up and I took the opportunity to go to the bathroom (playing by serial cable has its advantages). When I came back I couldn't believe my eyes. Spear was a bishop up without any compensation for Shocky! It turned out that just after I left, Shocky started an attack which lost a silver beyond Shocky's search horizon. To try and save this silver, Shocky sacrificed even more material. After all this (which I had missed completely), the game quieted down. Shocky struggled to get back in the game, but Spear is now strong enough to win against any opponent from such an overwhelming position, so the result was never in doubt. This made it 2-1 in the Spear-Shocky CSA rivalry as Pauli and I now played each other three years in a row. More importantly, I don't have to go through the qualification hell of the first day next year!

5. THE FINALS

At the start of the finals, the tournament hall was surprisingly empty and the operators left to watch the programs looked like they had just lost all games. When I asked where everyone had gone, it was explained to me that there was a famous Japanese actress in the hotel (Nakayama Miho for those in the know). They were using the coffee corner in hotel lobby for shooting some scenes for a television drama. Like most programmers, shogi programmers spent almost all of their free time on their programs (as far as I know of the top ten programmers, only Kanazawa is married), so this was a golden opportunity. The television crew must have thought that the hotel was perfect without too

many guests to be in their way, but they hadn't counted on a flock of shogi programmers trying to catch a glimpse of beauty not often found in lines of C code. Still, security was pretty tight as Jeff managed to get only one picture from the back of Nakayama before he was summoned away from the set.

Oh yes, there was some computer shogi going on that day as well. 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. They 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 computer programs only rarely get smarter during the game and suddenly find something they didn't find before. KCC Shogi 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.

With this game the tournament was not over yet. Gekizashi showed that it still has some instability with a shocking defeat against Tancho. This would actually be Tancho's only win in the finals and also mean that Gekizashi didn't get third place, dropping back to the qualification rounds next year.

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.

The final round had no surprises as all top programs won. IS Shogi therefore won the title with a perfect score, but its final round win against YSS will be the start of some discussion on the rules for computer shogi. After about 50 moves, both programs didn't find a way to continue the game and started moving around pieces aimlessly. In shogi, there is a rule for a draw after repetition of positions (four times the same position ends the game), but there is no 50 move rule as in chess. Both IS Shogi and YSS had code for avoiding the repetition of positions, but found enough moves to do nothing for a long time but making sure to avoid a draw. This situation lasted for about 150 moves and the game became very painful to watch and an embarrassment for the programmers. Finally, IS Shogi's abilities for thinking in the time of the opponent gave it a huge time advantage and when YSS had almost no time left, the game finally was opened. Of course, IS Shogi had no problem beating a time crippled opponent after that. In the end YSS was mated at about the same time it ran out of time. It seems that computer shogi also needs a 50 move rule to avoid these types of games.

After the final round, 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 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.

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. That things can still go wrong for Tanase, Kishimoto and Goto showed the game against Kawabata Shogi, which could and should have been lost.

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. More important than that, it played very impressive shogi. It was vastly improved over last year's version and it could only be stopped by IS Shogi. It seems that KCC Shogi 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 is the program that scared IS Shogi's Tanase most. The program is searching extremely deep and accurate. If problems in the opening can be solved for next year, 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 need 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 choice. For the time being they have the support of their professor Chikayama, who is quite famous in Japan. He doesn't seem to know much about shogi, but it is rumoured that with his outstanding programming skills, he managed to make Gekizashi more than twice as fast with only a couple of days work.

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. Personally, I want to see Yamashita do well, but shogi programming seems to become more and more a team effort and his Go program Aya also takes a lot of time. Maybe Yamashita needs 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 Kawabata Shogi was a great illustration of the improvement in strength in computer shogi in one year. Last year it 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 program as last year and this resulted in only two wins.

Hyper Shogi For me this program was the surprise of the tournament. When it played Spear on the first day, it didn't give the impression of being overwhelmingly strong, but that was misleading. 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.

Shotest Jeff had changed his job last year and had almost no time to work on Shotest. The results this year reflected that. However, next year promises to be different. He changed back to his previous job at Oxford Softworks and is back on shogi fulltime. He is full of new ideas and I am sure that he will be back in contention next year.

Shocky Pauli was not very talkative about the things that went wrong with Shocky this year. It seems like there was no single cause for losing four games in a row, only that his opposition was very strong. It is not in Pauli's character to just give up, so I am sure he will come back strongly next year.

Spear I am very happy with my result this year. I got exactly what I wanted and for a little while, there was even a chance to get more. This would not have been right, as my program still showed some serious bugs during the tournament. I hope I will have time to work on my program to improve it for next year's tournament. Unfortunately, I am now in the same position as Jeff last time, as I have just started a new job, so I have no idea how much time I will be able to spend on improving Spear this year.

7. CONCLUSIONS

For playing the tournament, the Kazusa Academic Park was an ideal location. The tournament hall was huge and there was no problem fitting in all participants. Furthermore, the huge projectors on the final day were a great service to the spectators, who no longer needed to jockey for position

around the small computer screens during the important games. Also, the hotel was great and priced very reasonably. Still, the Kazusa Academic Park has its problems because of its isolated location. First, it is not so easy to get there. From Tokyo station it is a private bus line and it is unclear where to get tickets (as there is only one bus an hour it is better to reserve seats). Furthermore, the train is not a good alternative. For example, both Narita international airport and Kazusa Academic Park are located in Chiba prefecture, but going to Tokyo station from Narita airport and taking the bus from there is actually quicker than going by train directly. The second problem is that it is almost impossible to get away. The restaurants are reasonable, but quite expensive and the hotel bar closes at 23:00 (and it's not even an English pub). As there are almost no buses to take you to the civilized world and back, it is almost impossible to do anything else but work on your shogi program in the evenings.

As for the playing level, 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 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.

8. GAMES FROM THE FINAL

Black: Kanazawa Shogi
White: KCC Shogi
11th CSA Tournament
Round 5
March 12th 2001
1.P7g-7f 2.P8c-8d 3.S7i-7h 4.P3c-3d 5.P6g-6f 6.S7a-6b 7.S7h-7g 8.P5c-5d
9.P5g-5f 10.S3a-4b 11.G6i-7h 12.G4a-3b 13.S3i-4h 14.K5a-4a 15.K5i-6i
16.G6a-5b 17.G4i-5h 18.S4b-3c 19.B8h-7i 20.B2b-3a 21.G5h-6g 22.P4c-4d
23.B7i-6h 24.P7c-7d 25.K6i-7i 26.G5b-4c 27.S4h-5g 28.S6b-7c 29.P2g-2f
30.P7d-7e 31.P7fx7e 32.B3ax7e 33.K7i-8h 34.P8d-8e 335.S5g-4 36.K4a-3a
37.P5f-5e 38.P5dx5e 39.R2h-5h 40.B7e-6d 41.S4fx5e 42.R8b-5b 43.P*5d
44.B6d-4b 45.P3g-3f 46.P*7e 47.N2i-3g 48.S7c-6d 49.S5ex6d 50.B4bx6d
51.S*5c 52.G4cx5c 53.P5dx5c+ 54.R5b-8b 55.N3g-2e 56.S*6i 57.N2ex3c+
58.N2ax3c 59.R5h-1h 60.N*5e 61.G6g-5g 62.P*5f 63.G5g-5h 64.S6ix5h+
65.R1hx5h 66.S*6i 67.B6h-4f 68.S6ix5h= 69.S*4c 70.N5e-6g+ 71.S*4b
72.G3bx4b 73.S4cx4b+ 74.R8bx4b 75.+P5cx4b 76.B6dx4b 77.R*7a 78.K3a-3b
79.G*7i 80.+N6gx7h 81.G7ix7h 82.S*6i 83.G*6h 84.S6ix7h+ 85.G6hx7h
86.G*6g 87.P*7i 88.G6gx7h 89.P7ix7h 90.G*6g 91.G*7i 92.R*5a 93.R7ax5a+
94.B4bx5a 95.R*8b 96.G*4b 97.R8bx8a+ 98.G*4a 99.N*5d 100.G4b-5b
101.B4fx9a+ 102.P5f-5g+ 103.P9g-9f 104.S*6h 105.S7gx6h 106.+P5gx6h
107.S*4b 108.G6gx7h 109.K8h-9g 110.G4ax4b 111.S*2a 112.K3b-3a
113.N5dx4b+ 114.K3ax4b 115.G*3b 116.K4b-4c 117.N*5e 118.K4c-5d
119.+R8ax5a 120.G5bx5a 121.G7ix7h 122.S5hx4g+ 123.B*5f 124.S*7f
125.N5ex6c+ 126.S*8f 127.P8gx8f 128.R*5g 129.S*6g 130.R5gx5f+ 131.+B9a-6d
132.K5d-4e 133.S6gx5f 134.K4ex5f 135.R*5c 136.K5f-4e 137.G*4f 138.+S4gx4f

139.R5c-5e+140.K4ex3f 141.+R5ex4f 142.K3f-2g 143.+R4f-3g Resigns

Black: IS Shogi
White: Kanazawa Shogi
11th CSA Tournament
Round 6
March 12th 2001
1.P7g-7f 2.P3c-3d 3.P6g-6f 4.K5a-4b 5.G4i-5h 6.K4b-3b 7.S3i-4h 8.S7a-6b
9.G6i-7h 10.P8c-8d 11.K5i-6i 12.P9c-9d 13.S7i-6h 14.G6a-5b 15.P3g-3f
16.B2b-3c 17.P2g-2f 18.P5c-5d 19.P4g-4f 20.K3b-2b 21.S4h-4g 22.G4a-3b
23.N2i-3g 24.B3c-4b 25.G5h-6g 26.S6b-5c 27.P1g-1f 28.L9a-9c 29.P1f-1e
30.P6c-6d 31.P6f-6e 32.B4b-3c 33.B8hx3c+ 34.N2ax3c 335.P6ex6 36.S5cx6d
37.G6g-7g 38.G5b-5c 39.P*6e 40.S6dx6e 41.B*7a 42.R8b-5b 43.B7ax5c+
44.R5bx5c 45.G*6d 46.R5c-5a 47.G6dx6e 48.B*9b 49.S4g-5f 50.B9bx6e
51.S5fx6e 52.B*4g 53.K6i-7i 54.B4gx6e+ 55.P3f-3e 56.+B6e-4g 57.P3ex3d
58.G*6i 59.K7i-8h 60.+B4gx3g 61.R2h-1h 62.N*8e 63.P3dx3c+ 64.G3bx3c
65.N*2e 66.G3c-3b 67.G7g-6g 68.P2c-2d 69.P1e-1d 70.P1cx1d 71.S*1c
72.L1ax1c 73.N2ex1c+ 74.K2b-3c 75.L*3i 76.P*3f 77.L3ix3g 78.P3fx3g+
79.P*3d 80.K3cx3d 81.B*1b 82.K3d-3c 83.+N1cx1d 84.L*6b 85.+N1dx2d
86.K3c-4b 87.P*6f 88.+P3g-4g 89.B1b-4e+ 90.P*1g 91.R1hx1g 92.+P4g-5h
93.P*3c 94.G3b-2b 95.S6h-7i 96.S*4d 97.+B4e-3d 98.P*6e 99.P6fx6e
100.P*3b 101.B*2e 102.S*5b 103.P3cx3b+ 104.S3ax3b 105.B2ex5h 106.G6ix7i
107.G7hx7i 108.P*3c 109.+B3d-2e 110.S*5e 111.P7f-7e 112.P*6f 113.G6g-7f
114.S5ex4f 115.P8g-8f 116.P*1f 117.R1g-2g 118.N8ex9g+ 119.K8hx9g
120.P*2c 121.+N2d-1d122.P9d-9e 123.K9g-8h 124.P9e-9f 125.P*9h 126.S4d-4e
127.P*3e 128.S4f-5e 129.G7i-6h 130.S5e-4d 131.R2g-4g 132.P5d-5e 133.N*3f
134.S4ex3f 135.+B2ex3f 136.N*5c 137.G6h-7h 138.N5cx6e 139.G7fx6f
140.P8d-8e 141.B5hx8e 142.P*8d 143.B8e-7f 144.P1f-1g+ 145.G6f-6g
146.+P1g-2h 147.P*6f 148.+P2hx1i 149.P6fx6e 150.S5b-5c 151.P*4e
152.S4dx4e 153.R4gx4e 154.P7c-7d 155.S*6f 156.L*4d 157.R4ex5e 158.P*5d
159.R5e-5f 160.P7dx7e 161.S6fx7e 162.P*1c 163.+N1d-1e 164.N8a-7c 165.S*7d
166.N7cx6e 167.P*6c 168.P*7g 169.G7h-7i 170.L6bx6c 171.S7dx6c+ 172.P*6d
173.N*7d 174.P8d-8e 175.P8fx8e 176.L4d-4h+ 177.N7d-6b+ 178.S5cx6b
179.+S6cx6b 180.R5a-5c 181.S7ex6d 182.S3b-4a 183.S6dx5c+ 184.K4b-3b
185.R*1a 186.P9f-9g+ 187.P9hx9g 188.L9cx9g+ 189.L9ix9g 190.G2b-2a
191.+S5cx4c 192.K3b-2b 193.R1ax1c+ 194.K2bx1c 195.L*1d 196.K1c-2b
197.G*1b 198.G2ax1b 199.L1dx1b+ 200.K2bx1b 201.P*1c 202.K1bx1c 203.L*1d
204.K1c-2b 205.G*1b 206.K2b-3a 207.S*2b Resigns

Black: IS Shogi
White: KCC Shogi
11th CSA Tournament
Round 8
March 12th 2001
1.P7g-7f 2.P8c-8d 3.S7i-6h 4.P3c-3d 5.S6h-7g 6.S7a-6b 7.S3i-4h 8.S3a-4b
9.G6i-7h 10.G4a-3b 11.P2g-2f 12.P5c-5d 13.P2f-2e 14.S4b-3c 15.K5i-6i
16.B2b-3a 17.G4i-5h 18.K5a-4a 19.P4g-4f 20.G6a-5b 21.S4h-4g 22.P4c-4d
23.P6g-6f 24.B3a-4b 25.B8h-7i 26.P7c-7d 27.B7i-6h 28.N8a-7c 29.K6i-7i
30.K4a-3a 31.B6h-5i 32.P8d-8e 33.P3g-3f 34.G5b-4c 35.B5i-2f 36.K3a-2b
37.N2i-3g 38.B4b-6d 39.K7i-8h 40.P5d-5e 41.G5h-6g 42.P9c-9d 43.L1i-1h
44.P9d-9e 45.R2h-2i 46.R8b-8a 47.R2i-5i 48.R8a-5a 49.N3g-4e 50.S3c-4b
51.R5i-1i 52.G4c-5d 53.P6f-6e 54.N7cx6e 55.S7g-6f 56.B6d-7c 57.S6fx6e
58.G5dx6e 59.N8i-7g 60.G6e-6d 61.B2fx4d 62.N2a-3c 63.B4d-2f 64.N3cx4e
65.P4fx4e 66.P7d-7e 67.P*6e 68.G6d-7d 69.N*5d 70.R5ax5d 71.N*4f
72.R5d-5b 73.N4fx3d 74.K2b-2a 75.N3dx4b+ 76.R5bx4b 77.S*5c 78.S6bx5c

79.B2fx5c+ 80.P5e-5f 81.S*3c 82.S*3a 83.+B5cx4b 84.S3ax4b 85.S3cx4b+
86.G3bx4b 87.R*7b 88.S*3a 89.P2e-2d 90.P7ex7f 91.P2dx2c+ 92.P7fx7g+
93.G7hx7g 94.S*6b 95.S*3c 96.G4bx3c 97.+P2cx3c 98.P*3b 99.P*2b
100.S3ax2b 101.R1i-2i 102.P3bx3c 103.G*2c 104.P*2h 105.R7bx7c+
106.S2bx2c 107.+R7cx6b 108.S*3b 109.R2ix2h 110.P*2d 111.+R6b-7a 112.G*4a
113.+R7ax7d 114.N*5e 115.S4gx5f 116.N5ex6g= 117.S5fx6g 118.N*5e
119.S6g-7h 120.B*3i 121.B*1i 122.B3ix5g+ 123.S*6f 124.+B5g-5f 125.N*3e
126.G*6g 127.P*2b 128.K2ax2b 129.N3ex2c+ 130.S3bx2c 131.S*4d 132.N*6d
133.+R7d-7b 134.P*4b 135.S6fx5e 136.G6gx7h 137.G7gx7h 138.N*7f
139.K8h-7g 140.N*5b 141.N*1e 142.S2c-3d 143.R2hx2d 144.S*2c 145.R2dx2c+
146.S3dx2c 147.N1ex2c+ 148.K2bx2c 149.G*2d 150.K2cx2d 151.S4d-3e
152.K2d-2e 153.S*2f 154.K2ex3f 155.G*3g 156.K3fx4e 157.S*4f 158.+B5fx4f
159.G3gx4f Resigns