REPORT ON THE 12TH CSA WORLD COMPUTER-SHOGI CHAMPIONSHIP

Kazusa Academic Park, Kisarazu, Japan
May 3-5, 2002

Reijer Grimbergen*

Department of Information Science, Saga University, Japan

1. INTRODUCTION

For the second time the CSA Computer Shogi World Championships were held at the Kazusa Academic Park in Kisarazu, close to Tokyo. A perfect, but completely isolated location: without a car there is not much else to do but to tune your program. This has the advantage that there are some good chances of celebrity spotting, as especially the high class Okura hotel is a very good location for shooting scenes of television series or taking photographs without being bothered too much by the few guests. Last year we had one of the most famous Japanese actresses at the hotel during the CSA tournament, but this year we had to settle for some unknown (but quite beautiful) models who were doing a photo shoot.

And yes, there was computer shogi as well. The tournament had been moved to coincide with Golden Week, which is one of the few long holidays in Japan. Unfortunately this did not result in more participants as the number of entries was more or less the same: 51 this year compared to 55 last year. I have no detailed results about the number of visitors, but I had the impression that this also hadn't changed much from last year. At least the venue was a little more lively, with more families spending their weekend at the hotel and some workshops and other events going on at the different rooms of the complex.

As for the tournament favourites, this was all about the usual suspects IS shogi (would they win it for the third straight time?), KCC (would the massive effort of the North Koreans result in the first foreign winner of the CSA tournament?) and Kanazawa Shogi (how many fans would they need to cool their machine?). Dark horses were the Gekisashi team, who rocketed into fame last year, showing the way for a new type of programming in shogi. Would this be the real deal, or just a false alarm? Jeff Rollason's Shotest program is also strong, but Jeff had been even too busy to tune the things that we had worked on together, so it seemed like a place in the final was the maximum that could be expected. A completely unknown factor was the new North Korean entry Daizin. Even though it seemed to have no direct connection with the KCC program, it was operated by the same Japanese as KCC used to be until the North Koreans came to the tournament themselves. Would Daizin be the program that reaches the finals from the bottom of the tournament? (Something that happens almost every year.) It would be a little more difficult than last year, as there would be only 8 programs in the finals compared to the 10 last year. From a player's point of view, 10 programs would be better (more chances to reach the final, more chances that a single loss wouldn't be all-deciding), but it seemed the organisation decided to avoid having a long day for the spectators.

2. THE FIRST PRELIMINARY STAGE

Unlike the previous tournament, I didn't have to play in this round so this was a very relaxing day (even though I spend quite a lot of time fixing bugs). Watching the tournament unfold made me even more happy that I didn't need to qualify from this round. It used to be that there were not

*email: grimbergen@fu.is.saga-u.ac.jp

No	Program Name	1	2	3	4	5	6	7	Pt	SOS	SB	MD
*1	Daizin	23+	27+	19+	3+	11+	5+	2+	7.0	28.5	28.5	20.5
*2	Oojiro	25+	19+	14+	4+	20+	6+	1-	6.0	29.0	22.0	15.0
*3	Shoo	27+	23+	13+	1-	15+	20+	6+	6.0	27.0	20.0	13.0
*4	Aoi C	9+	8+	5-	2-	21+	23+	18+	5.0	29.5	18.5	11.0
*5	Sakura	30+	17+	4+	20+	6-	1-	7+	5.0	29.5	17.5	11.5
*6	Nara Shogi	26+	31+	8+	11+	5+	2-	3-	5.0	29.0	17.0	11.0
*7	Toshizo Shogi	8-	9+	26+	28+	12+	11+	5-	5.0	26.5	16.5	10.0
*8	Isobe Shogi	7+	4-	6-	15+	28+	25+	12+	5.0	26.5	16.5	9.5
9	Demon Shogi	4-	7-	30+	27+	26+	19+	10=	4.5	22.5	8.0	4.0
10	Oni Shogi	20-	28+	31+	12-	25+	21+	9=	4.5	19.5	8.0	4.0
11	TACOS	21+	14+	28+	6-	1-	7-	15+	4.0	29.5	12.5	6.5
12	Maruyama Shogi	13-	24+	27+	10+	7-	17+	8-	4.0	26.5	12.5	6.0
13	Riskus Shogi	12+	16-	3-	26+	19-	14+	20+	4.0	25.5	13.0	7.0
14	Ujiie Shogi	29+	11-	2-	21+	22+	13-	19+	4.0	25.0	11.0	6.0
15	Ootsuki Shogi	17=	30+	16+	8-	3-	22+	11-	3.5	26.0	7.5	3.0
16	Suzuki Shogi	24=	13+	15-	22-	17+	18-	26+	3.5	22.0	9.5	3.5
17	Yamada Shogi	15=	5-	24+	30+	16-	12-	23+	3.5	22.0	6.0	2.5
18	MKS	19-	25-	23=	32+	24+	16+	4-	3.5	18.5	6.0	2.5
19	Sexy-AI-chan	18+	2-	1-	25+	13+	9-	14-	3.0	31.0	9.5	3.5
20	Oki	10+	32+	22+	5-	2-	3-	13-	3.0	28.5	7.5	3.0
21	NariKin Shogi	11-	29+	32+	14-	4-	10-	25+	3.0	21.5	4.0	2.0
22	S1.7	31+	26-	20-	16+	14-	15-	27+	3.0	19.0	6.5	2.0
23	Shuto Shogi	1-	3-	18=	24+	30+	4-	17-	2.5	28.5	3.5	0.0
24	Fuku Shogi	16=	12-	17-	23-	18-	28+	29+	2.5	21.0	4.0	0.0
25	Nagayoshi Shogi	2-	18+	29+	19-	10-	8-	21-	2.0	27.0	5.5	0.0
26	Sunada Shogi	6-	22+	7-	13-	9-	29+	16-	2.0	27.0	5.0	0.0
27	Deep Purple	3-	1-	12-	9-	31+	30+	22-	2.0	26.5	2.0	0.0
28	Kitahei	32+	10-	11-	7-	8-	24-	31+	2.0	22.0	1.0	0.0
29	ken Shogi	14-	21-	25-	31+	32+	26-	24-	2.0	14.5	1.0	0.0
30	Tsubakihara Shogi	5-	15-	9-	17-	23-	27-	32+	1.0	21.0	0.0	0.0
31	JavaTaikyoku	22-	6-	10-	29-	27-	32+	28-	1.0	18.5	0.0	0.0
32	SIL Shogi	28-	20-	21-	18-	29-	31-	30-	0.0	15.5	0.0	0.0

Table 1: Results of the First Qualification Round.
* Daizin, Oojiro, Shoo, Aoi C, Sakura, Nara Shogi, Toshizo Shogi and Isobe Shogi qualify for the second qualification round.

so many strong programs in this round and that there was quite a good chance of qualifying with a stable program. However, this no longer seems to be the case. As more information about the proper way to build a shogi program is coming available and the number of participants who enter the tournament every year is increasing, there are almost no easy games anymore. A couple of minor problems in a program and bad luck with the pairing can make the difference between qualifying and not qualifying. This is for example what happened to TACOS, the program of the university of Shizuoka. They had a rocket start with three wins from their first three games, but then lost three in a row against some of the stronger programs, coming up short despite a serious improvement in their program over last year.

The North Korean program Daizin thrashed the opposition in this round with seven straight wins. This suddenly became a program to watch even though the general impression was that is was strong, but not as strong as KCC. Second place was for Oojiro, a program that has been playing in the CSA tournament for years, doesn't make many mistakes and doesn't suffer much from running on rather slow hardware (700 MHz notebook). Among the other programs that qualified there were some who showed great improvement over last year. Shoo improved from 12th place to 3rd, Aoi C improved from 19th place to 4th, and Toshizo Shogi improved from 34th to 7th place (!). Other qualifying programs were Sakura (dropped out of the second group last year), Nara Shogi (a first year entry!) and Isobe Shogi (just missed qualification last year, but was much improved this year). In the end, of the programs that dropped out of the second group last year, only Oojiro and Sakura managed to qualify again and only Isobe Shogi had previous experience playing in the second qualification group!

No	Program Name	1	2	3	4	5	6	7	8	9	Pt	SOS	SB	MD
*1	Kakinoki Shogi	18+	5+	12+	10+	3+	2+	9-	4+	8+	8.0	49.5	44.5	33.5
*2	Gekisashi	21+	16+	5+	17+	8+	1-	4+	3+	9+	8.0	45.0	37.0	28.5
*3	Shotest 7.0	19+	22+	14=	7+	1-	8+	6+	2-	5+	6.5	48.0	28.0	20.0
*4	YSS	11+	8-	17+	6+	14+	9+	2-	1-	12+	6.0	49.0	28.0	19.0
*5	Eisei Meijin	20+	1-	2-	23+	10+	18+	8+	9+	3-	6.0	45.5	23.0	16.0
6	KFEnd	14-	9+	19+	4-	20+	15+	3-	13+	10+	6.0	41.5	25.0	17.0
7	Isobe Shogi	22+	19+	8-	3-	17+	10-	15+	18+	11+	6.0	36.5	20.0	13.0
8	Ryu-no-Tamago	15+	4+	7+	14+	2-	3-	5-	11+	1-	5.0	53.5	25.0	15.0
9	Hyper Shogi 8	24+	6-	10+	12+	11+	4-	1+	5-	2-	5.0	51.0	25.0	15.0
10	Shoo	16+	21+	9-	1-	5-	7+	17+	15+	6-	5.0	43.5	18.5	10.5
11	Usapyon	4-	15+	23+	20+	9-	14+	18+	8-	7-	5.0	38.0	16.0	10.0
12	Daizin	13+	23-	1-	9-	22+	21+	20+	17+	4-	5.0	36.0	15.0	8.0
13	Tanchou 5	12-	17-	18-	21+	24+	19+	14+	6-	16+	5.0	31.5	14.5	8.5
14	Nara Shogi	6+	24+	3=	8-	4-	11-	13-	16=	18+	4.0	42.0	11.0	3.0
15	Aoi C	8-	11-	22+	24+	16+	6-	7-	10-	17+	4.0	37.5	10.5	5.0
16	Yano Shogi V	10-	2-	24+	18-	15-	23+	19+	14=	13-	3.5	36.0	7.0	2.0
17	SPEAR	23+	13+	4-	2-	7-	20+	10-	12-	15-	3.0	44.0	10.0	3.0
18	Sekita Shogi 8	1-	20-	13+	16+	23+	5-	11-	7-	14-	3.0	42.5	10.5	3.5
19	Oojiro	3-	7-	6-	22+	21+	13-	16-	20-	24+	3.0	36.0	6.0	2.0
20	Sakura	5-	18+	21+	11-	6-	17-	12-	19+	22-	3.0	35.0	8.0	3.0
21	Suzu-no-Ne	2-	10-	20-	13-	19-	12-	24+	22-	23+	2.0	35.0	4.0	0.0
22	Takada Shogi	7-	3-	15-	19-	12-	24-	23-	21+	20+	2.0	33.5	5.0	0.0
23	Toshizo Shogi	17-	12+	11-	5-	18-	16-	22+	24-	21-	2.0	31.5	7.0	0.0
24	Nazoteki Dengi	9-	14-	16-	15-	13-	22+	21-	23+	19-	2.0	30.5	4.0	0.0

Table 2: Results of the Second Qualification Round.
* Kakinoki Shogi, Gekisashi, Shotest 7.0, YSS and Eisei Meijin qualify for the finals.

3. THE SECOND PRELIMINARY STAGE

Because the first day was so tough, both Jeff and I got lucky. Sexy-AI-chan, the program of Professor Kotani's lab, failed to qualify but ran on a fast computer (2 GHz). I had been unable to bring a fast computer from our university in Saga (about 1200 kilometres from the playing venue) and was counting on playing the tournament on my 750 MHz notebook. However, Professor Kotani gracefully allowed me to use the PC they had been using, so at least I would have competitive hardware. Professor Iida from Shizuoka University was just as generous by giving Shotest the PC that TACOS had run on (even a little faster at 2.2 GHz). We no longer had any excuses, all disasters would be our own fault!

After a quiet start without any susrprises in the first round, the tournament really came alive in round 2. A big upset in the second round was the loss of YSS against Ryu-no-tamago. This is a strong program that was close to the final last year, but it was a big surprise that it was able to beat former winner YSS.

In round 3, Shotest allowed a draw by repetition of moves against Nara Shogi which could have been very costly as this was a game Shotest was expected to win.

Leaders after the fourth round with a perfect score were Kakinoki Shogi, Gekisashi and Ryu-no-tamago. They were followed by Shotest, YSS, Hyper Shogi and Usapyon. Eisei Meijin (missing the final by a whisker in the last two years) was again having trouble to keep up, but losses against Kakinoki Shogi and Gekisashi could have been expected. However, another slip might be the end. The North Korean program Daizin found the going much more tough, as it lost its third straight game. No second KCC, at least not this year.

In round 5, Kakinoki Shogi beat Shotest and Gekisashi beat Ryu-no-tamago to extend their lead. Hyper Shogi beat Usapyon and YSS beat Nara Shogi, so Hyper Shogi and YSS were back in position for a place in the finals.

Round 6 had the game between the two undefeated programs, a game that (a little to my surprise) was won by Kakinoki Shogi. To me, Kakinoki Shogi has the "always a bridesmaid, never a bride" image, but it was looking really strong so far. In the other games Shotest beat Ryu-no-tamago and YSS beat Hyper Shogi. Other winners were Eisei Meijin, KFEnd and Usapyon, making predictions about the finalists quite complicated. Kakinoki Shogi was almost certain of qualification and things were looking good for Gekisashi and YSS (5-1). Shotest was in the middle of things ($4\frac{1}{2}$-$1\frac{1}{2}$), but with some tough opposition left to play. Eisei Meijin, KFEnd, Ryu-no-tamago and Hyper Shogi looked like the other likely candidates, each having a 4-2 score.

Round 7 saw the fall of the last program with a perfect score as Kakinoki Shogi surprisingly lost to Hyper Shogi. Gekisashi beat YSS to join Kakinoki Shogi in the lead. Shotest jumped over YSS to 3rd place with a win against KFEnd. Eisei Meijin won its 4th straight game, defeating Ryu-no-tamago for its third straight loss. YSS, Eisei Meijin and Hyper Shogi now shared 4th place with a 5-2 score along with the surprising Usapyon, who had a very favourable pairing and made the most of that.

Round 8 secured places in the final for Kakinoki Shogi and Gekisashi, beating YSS and Shotest. Eisei Meijin took a big step towards the final as well with a victory against Hyper Shogi. With one round left to play the ranking was as follows:

1	Kakinoki Shogi, Gekisashi	7
3	Eisei Meijin	6
4	Shotest	$5\frac{1}{2}$
5	YSS, KFEnd, Ryu-no-tamago, Hyper Shogi, Isobe Shogi, Shoo, Usapyon, Daizin	5

Some big surprises among the contenders. Up until Hyper Shogi all programs had more or less played each other, but Isobe Shogi, Shoo, Usapyon and Daizin had some very favourable pairings and were in with a shout. It seemed only fair that these programs would get a top opponent in the final round, but the organisation decided differently. They came up with the following pairing: Kakinoki Shogi vs. Ryu-no-tamago, Gekisashi vs. Hyper Shogi, Shotest vs. Eisei Meijin, YSS vs. Daizin, KFEnd vs. Shoo and Usapyon vs. Isobe Shogi. Very tough on Ryu-no-tamago, who had played all the big programs and relatively easy opponents for KFEnd (played neither Kakinoki nor Gekisashi), Shoo (no Gekisashi or YSS), Usapyon (only YSS) and Isobe Shogi (only Shotest). As the results turned out, the only real victim was Ryu-no-tamago, which lost against Kakinoki Shogi and with a ton of SOS points but only 5 wins ended outside of the finals. Hyper Shogi also had some reasons for complaints, as the loss against Gekisashi also meant only 5 wins with outstanding opposition. Shotest beat Eisei Meijin to seal a spot in the final, clinching 3rd place with $6\frac{1}{2}$ points. YSS was in serious danger of not qualifying, but Daizin didn't turn out to be a big problem, giving YSS 4th place. The last place in the finals was for Eisei Meijin, who got 6 points against tough opposition, keeping KFEnd out of the final. Isobe Shogi beat Usapyon to get a very flattering 7th place with 6 points. Pairing is a tough job and there will always be room for discussion, but there still seem to be problems with the system that is being used. It was supposed to be a variation of the Swiss system, allowing pairings of consecutive rounds without waiting for the results. A computer program was said to be available, but the pairings give some doubt to whether the program was actually used in the right way. Reading my reports of previous years, this is turning into an eternal issue. Again I hope it will be resolved for next year's tournament.

This being said, in the end there was not much wrong with the programs who reached the final. For the first time since I have played in the tournament, there were no new programs in the final. All eight programs have experience in playing on the final day. All programs have been around for a long time and have been thoroughly tested. This promised to be a final without any easy games for the favourites.

My program SPEAR didn't fare so well this year as it ended in 17th place with a 3-6 score, just one spot outside the seeds for next year. A disappointing result, especially since test results before the tournament had shown a considerable improvement in playing strength. At least I now have a lot of ideas for improvements.

No	Program Name	1	2	3	4	5	6	7	Pt	SOS	SB	MD
1	Gekisashi	2+	3+	4+	8+	6+	5+	7-	6.0	22.0	20.0	13.0
2	IS Shogi	1-	7+	8+	5+	3-	4+	6+	5.0	23.0	13.0	8.0
3	KCC Shogi	8+	1-	5+	7+	2+	6-	4-	4.0	24.0	12.0	5.0
4	Kakinoki Shogi	7-	5-	1-	6+	8+	2-	3+	3.0	25.0	9.0	3.0
5	Eisei Meijin	6+	4+	3-	2-	7+	1-	8-	3.0	25.0	8.0	3.0
6	Kanazawa Shogi	5-	8+	7+	4-	1-	3+	2-	3.0	25.0	8.0	2.0
7	Shotest 7.0	4+	2-	6-	3-	5-	8-	1+	2.0	26.0	9.0	0.0
8	YSS	3-	6-	2-	1-	4-	7+	5+	2.0	26.0	5.0	0.0

Table 3: Results of the Finals.

4. THE FINALS

The final promised to be a tight affair and the atmosphere before the first round was quite tense. The big screens were set up to show the games to all the spectators, and the professionals Katsumata, Iida and later in the day Taki were there to give detailed comments on the proceedings.

The first round started immediately with two big surprises. The winner and runner-up of last year's tournament both lost their opening game! IS Shogi fell to Gekisashi and Kanazawa Shogi lost to Eisei Meijin. KCC beat YSS and Shotest beat Kakinoki Shogi after a long game where tough defence by Shotest pushed Kakinoki Shogi in serious time trouble.

In the second round Gekisashi won again, this time against the number 3 of last year, KCC. A huge disappointment to the large North Korean delegation who clearly were only at the tournament to take first place. IS Shogi recovered with a win against Shotest and Kanazawa Shogi by beating YSS. Eisei Meijin got his second win against Kakinoki Shogi.

Round 3 saw another Gekisashi win, revenging its defeat by Kakinoki Shogi on the previous day. Kakinoki admitted that winning the qualification group was a little bit too much, but losing three games in a row will have been a little disappointing. IS Shogi beat YSS, KCC stopped the Eisei Meijin run and Kanazawa Shogi got its traditional win against Shotest (Jeff is almost resigned to the fact that Shotest never won a game against Kanazawa Shogi in the CSA tournament). So after three rounds, we had Gekisashi in the lead, followed by four programs with one loss: IS Shogi, KCC, Eisei Meijin and Kanazawa Shogi.

In round 4 Gekisashi beat YSS for its fourth straight win and YSS's fourth straight loss. IS Shogi didn't make a mistake with a win against Eisei Meijin and KCC beat Shotest in a fine display of computer shogi at its best. Good opening build-up, good attack and straight finish. Kanazawa Shogi lost to Kakinoki Shogi, showing that Kanazawa Shogi had some serious problems this year. With Gekisashi, IS Shogi and KCC still to play, Kanazawa Shogi was in big trouble.

Round 5 saw the last big challenge of Gekisashi as it had to play last year's runner-up Kanazawa Shogi. Gekisashi showed it was the real thing by winning this game as well. A tournament victory was still far from certain even though KCC's win against IS Shogi virtually put the 2000 and 2001 winners out of the race. It now was down to either Gekisashi or KCC for the title. Eisei Meijin joined IS Shogi in third place with a win against Shotest and Kakinoki Shogi kept YSS winless.

In the 6th round Kanazawa Shogi finally showed its teeth by beating KCC. This was not so good for the spectators as a win by Gekisashi would mean that the title would be theirs with one round left to play. This is exactly what happened. Gekisashi kept its perfect record with a win against Eisei Meijin, winning the computer shogi world championships for the first time. IS Shogi beat Kakinoki Shogi to join KCC in second place and Shotest was generous enough to lose against YSS, ending YSS's losing streak.

The only remaining question in the final round was whether Gekisashi would be able to make it a perfect 7-0. With low ranked Shotest (1-5) as opponent no-one really doubted the result, but the game turned out to be a real shocker. Gekisashi moved into an anaguma castle, which is the strongest defensive formation in shogi. However, Gekizashi is a program with an attacking style and the anaguma formation meant that the program was put on defence for most of the game. In the end, instead of being able to activate its pieces, Gekisashi got completely tight up in its own camp. Victory for Shotest was never in doubt, but Shotest prefers slow but certain strangulation over a quick but risky attack. The game therefore became a long suffering for the Gekisashi team (and most of the spectators). A complete victory by Shotest, showing that Gekisashi is strong, but not unbeatable. IS Shogi clinched second place with a win against Kanazawa Shogi, and was helped by the surprising loss by KCC against Kakinoki Shogi. KCC therefore had to settle for the same result as last year. Kakinoki Shogi ended 4th, Eisei Meijin 5th, Kanazawa Shogi 6th, Shotest 7th and YSS 8th.

5. CONCLUSIONS

This tournament saw the birth of a new type of programming for shogi. The Gekisashi method, which is a probability search built inside the classic alpha-beta search, will have a lot of followers after this tournament. Hopefully this will accelerate the improvements in computer shogi, leading to a challenge of professional players sooner rather than later. I am personally very excited about the new developments in computer shogi, which might give this game a research status of its own, rather than "chess but a little more difficult". It is also encouraging that Gekisashi is not a commercial program (although there is a commercial version of the program), but an effort of a group of students led by PhD student Tsuruoka. This makes it much more likely that details of the workings of the program will become available in the form of research publications.

6. THE PROGRAMS

Gekisashi : Great winner, beating all of its contenders and only losing to low ranked Shotest when the tournament victory was already in the bag (almost like a human). This victory shows that it is still possible to challenge the current hierarchy in computer shogi with only a couple of years effort.

IS Shogi : After the tournament Tanase said that he was actually surprised that IS Shogi managed to end in second place and that he wasn't at all disappointed. I was expecting a little bit more from IS Shogi, especially since programmers Tanase and Kishimoto are currently part of the top games research group in the world at the university of Alberta.

KCC Shogi : The Koreans were very disappointed with their third place. They came to the tournament expecting to win, but that didn't happen. However, the speech by their main programmer after the tournament showed the drive and the will to win that they have. It will be hard to keep such a strong challenge at bay forever. Like last year, I again tip the Koreans as the winners of next year's tournament.

Kakinoki Shogi : Played very well in the qualification round, but seemed to lose its momentum after losing to Shotest in the first round of the final. Of course there is no such thing for computer programs, so it might be better to say that things that went just right in the preliminary rounds just went wrong on the final day. However, the win against KCC showed that Kakinoki Shogi at its best can beat any program. The question Kakinoki has to answer for next year is: how to do this for seven rounds in a row?

Eisei Meijin : Finally got luck on its side by just sneaking into the final instead of just falling out. If it wasn't for the final round loss against YSS, Eisei Meijin would have really had a great result.

Kanazawa Shogi : A very disappointing tournament for Kanazawa Shogi. After being more or less unbeatable for a long time, its performance has become rather erratic in the past three years. This was its worst result ever in the CSA tournament. I have no idea what has gone wrong. I hope Kanazawa knows why, as it would be sad to see this famous program slowly slide down the ranks.

Shotest : Qualifying for the finals was probably as much as could have been expected from Shotest. The win against Gekisashi was a bonus to take into the tournament next year. Hopefully Jeff will have more time to spend on Shotest, as he is still full of ideas for improvements. If he has the time, Shotest might actually be a real contender for the title next year.

YSS : Not much to say about YSS this year. Unlike its programmer Yamashita, this year's YSS was rather plain. After the tournament Yamashita was his usual cheerful self, but five losses in a row must have made him think. Will he be able to make a come-back?