

THE 19TH CSA WORLD COMPUTER SHOGI CHAMPIONSHIP

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1. Introduction

This year's CSA tournament had been moved from the Kazusa Arc in Chiba to Waseda University in Tokyo for financial reasons. The Kazusa Arc is a spacious and luxury playing environment, but also very expensive. Despite the impressive progress in playing strength in recent years, it had been very hard to attract sponsors for the tournament. Waseda University offered a cheap and convenient location near the centre of Tokyo. For me this had the extra advantage that I didn't need to book a hotel, because a month before the tournament I had started a new position at the Tokyo University of Technology, which is close enough to make the trip from home to the venue by train every day. The disadvantage of the new location was that the playing hall was much smaller than at the Kazusa Arc, which meant that only a limited number of visitors were allowed. But then again, all games could be followed live on the Internet, so nobody had to miss anything of the action.

This year there were 42 participants, a number that has been quite stable over the past few years. However, there were some notable programs absent. Most surprising was the absence of last year's runner up Tanase Shogi. Tanase didn't feel his program was ready for this tournament and he decided to skip it. On the other hand, there were also a number of new or returning entries that caught the attention. The most significant one was that North Korean based KCC Shogi was back after a three year absence. KCC Shogi's record in the CSA tournament is very impressive so it was immediately considered to be a favourite.

The second program that seemed very strong was the new program Monju, which had been playing on the floodgate server² in the weeks before the tournament and had been about as strong as Bonanza, beating all the top programs there.

Bonanza continues to make waves in computer shogi. When it came out of nowhere to take the 2006 World Championships it showed us how a Crafty like program for shogi combined with an ingenious method for supervised learning (dubbed the "Bonanza Method" by shogi programmers) could produce a program that is strong enough to scare the top human players. In February 2009, Bonanza programmer Hoki sent a second shock wave through the computer shogi world by making the code of the program open source. In this year's tournament only Monju took advantage (as will be explained later), but in the future the Bonanza code is certain to provide a basic framework from which new developments will start. But first, let's see how the 2009 CSA World Championships went. Last year I wrote that I had never witnessed such an interesting tournament. I had seen nothing yet...

2. The First Preliminary Stage

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² A server like the Computer Go Server where shogi programs can play each other 24 hours a day

On the first day, KCC Shogi basically wiped the floor with everybody. Only the game against Monju was reasonably close. KCC Shogi's play was so impressive that people already starting talking about the possibility of winning every single game through three days, which had never been done before. In any case, KCC Shogi seemed to have returned with a vengeance.

Second place was for Monju, losing only against KCC Shogi. Seeing it in action, it became clear why Monju was so strong. It was running six Bonanza programs on three 8 processor machines (each Bonanza program running on 4 processors). Each Bonanza program had a slight random distortion in its evaluation function. In the end, the move to play would be decided by a majority vote between these six Bonanza programs. A very simple idea, but surprisingly effective. Tests showed that Monju could win about 58% of the games against the original Bonanza. By the way, one of Monju's biggest supporters was Bonanza programmer Hoki, who generously gave a lot of advice about his program in the weeks before the tournament.

The other programs that qualified from the first qualification round were Blunder, Yumeki, WILDCAT, Yamada Shogi, Garyu, Auau Shogi and ym-Shogi. Blunder deserves special mention, because it is a first year entry, made by a fourth year university student as a graduation project. Quite impressive, as it usually takes a number of years before someone has the programming skills to build a complex game playing program.

No.	Name Program	1	2	3	4	5	6	7	Pt	SOS	SB	MD
*1	KCC Shogi	4+	3+	16+	2+	6+	9+	8+	7.0	31.0	31.0	22.0
*2	Monju	11+	19+	8+	1-	5+	4+	3+	6.0	32.5	25.5	18.0
*3	Blunder	10+	1-	5+	22+	8+	6+	2-	5.0	31.5	18.5	12.0
*4	Yumeki	1-	10+	23+	13+	11+	2-	7+	5.0	29.5	16.5	11.0
*5	WILDCAT	12+	15+	3-	7+	2-	13+	6+	5.0	29.0	18.0	11.0
*6	Yamada Shogi	13+	7+	18+	16+	1-	3-	5-	4.0	30.0	13.0	6.0
*7	Garyu	17+	6-	14+	5-	12+	10+	4-	4.0	28.0	14.0	7.0
*8	Auau Shogi	24+	21+	2-	9+	3-	11+	1-	4.0	28.0	10.0	6.0
*9	ym-Shogi	19+	11-	21+	8-	18+	1-	15+	4.0	25.5	10.5	5.5
10	Narikin Shogi	3-	4-	12+	14+	22+	7-	19+	4.0	25.0	11.0	5.5
11	Mattari-Yuuchan	2-	9+	24+	18+	4-	8-	14+	4.0	25.0	10.0	6.0
12	Tohske	5-	14+	10-	17+	7-	21+	13+	4.0	24.0	11.0	6.0
13	ponanza	6-	17+	20+	4-	16+	5-	12-	3.0	26.5	8.5	3.0
14	Nanoha	15+	12-	7-	10-	17+	18+	11-	3.0	25.0	9.0	3.0
15	Hakusa Shogi	14-	5-	17-	20+	19+	16+	9-	3.0	23.0	8.0	2.5
16	Oki	23+	20+	1-	6-	13-	15-	21+	3.0	23.0	6.0	2.0
17	GAsyou!!!	7-	13-	15+	12-	14-	22+	23+	3.0	20.0	6.0	1.5
18	Suzuki Shogi	20+	23+	6-	11-	9-	14-	24+	3.0	19.0	4.0	1.5
19	Daemon Shogi	9-	2-	22=	21+	15-	24+	10-	2.5	20.5	2.0	0.0
20	HIT Shogi	18-	16-	13-	15-	24+	23=	22+	2.5	15.0	1.5	0.0
21	Hayabusa	22+	8-	9-	19-	23+	12-	16-	2.0	20.5	3.0	0.0
22	Tohu	21-	24+	19=	3-	10-	17-	20-	1.5	19.0	0.0	0.0
23	Inoue Shogi	16-	18-	4-	24+	21-	20=	17-	1.5	18.5	0.0	0.0
24	Mangu Shogi	8-	22-	11-	23-	20-	19-	18-	0.0	19.0	0.0	0.0

Table. 1: Results of the First Qualification Round

* KCC Shogi, Monju, Blunder, Yumeki, WILDCAT, Yamada Shogi, Garyu, Auau Shogi and ym-Shogi qualify for the second qualification round.

3. The Second Preliminary Stage

On the second day, KCC Shogi just kept on winning and again it went undefeated, winning all nine games. Talk of winning this tournament by winning 23 straight games started to get stronger. Surprising runner-up was Monju, losing against Shueso and KCC Shogi (again), but winning every other game, including Otsuki Shogi, Kakinoki Shogi, K-Shogi, Dragon's Egg and GPS Shogi. Especially the win against GPS Shogi would become something to be proud of.

Third place was for GPS Shogi, which put in a solid performance, losing only to KCC Shogi and Monju, but winning all its other games. GPS Shogi is one of the under-achievers in the CSA tournament. It has a team of very good young programmers from Tokyo University (the best university in Japan and also the university where World Champions IS Shogi and Gekisashi were developed), but this time was only the second time it qualified for the finals. Still, this was hardly a surprise, because the new version of GPS was doing very well on the floodgate server (which was created by the GPS team, by the way).

KCC Shogi, Monju and GPS Shogi were the dominating programs on the second day, but there were two more spots in the final left. For a long time it looked like Shueso would easily claim one of these spots. The program started with five consecutive wins, including a win against Monju, but then lost three games in a row, including a game against Kakinoki Shogi it probably should have taken. Because of its strong opponents, it was paired in the final round against a relatively easy opponent (A-Class League), which must have been a relief. It won the game, finishing fourth and claiming a place in the final for the first time.

The luckiest program of the day was Otsuki Shogi. In the end, it didn't have its faith in its own hands. It had to beat Dragon's Egg in the final round and hope that K-Shogi would beat Blunder. This happened and Otsuki Shogi finished with the same number of points as K-Shogi, but because K-Shogi had "walked the low road" (losing early and beating relatively weak opponents after that) Otsuki qualified based on Sum of Opponent Score.

No.	Program Name	1	2	3	4	5	6	7	8	9	Pt	SOS	SB	MD
*1	KCC Shogi	9+	12+	17+	5+	3+	4+	2+	7+	10+	9.0	49.0	49.0	38.0
*2	Monju	6+	21+	10+	4-	5+	8+	1-	14+	3+	7.0	51.0	36.0	26.0
*3	GPS Shogi	20+	14+	11+	15+	1-	16+	4+	5+	2-	7.0	48.0	32.0	23.0
*4	Shueso	12+	9+	8+	2+	7+	1-	3-	10-	13+	6.0	51.0	30.0	19.0
*5	Otsuki Shogi	23+	16+	7+	1-	2-	11+	14+	3-	8+	6.0	47.0	24.0	18.0
6	K-Shogi	2-	8-	24+	13-	20+	12+	9+	15+	7+	6.0	37.0	21.0	16.0
7	Blunder	14+	20+	5-	11+	4-	9+	8+	1-	6-	5.0	49.0	22.0	14.0
8	Dragon's Egg	21+	6+	4-	10+	15+	2-	7-	13+	5-	5.0	46.0	22.0	13.0
9	SPEAR	1-	4-	18+	19+	13+	7-	6-	20+	12+	5.0	45.0	19.0	12.0
10	Kakinoki Shogi	24+	17+	2-	8-	14-	21+	11+	4+	1-	5.0	43.0	18.0	12.0
11	Bingo Shogi	22+	13+	3-	7-	18+	5-	10-	17+	15+	5.0	42.0	19.0	12.0
12	Yamada Shogi	4-	1-	21+	14-	19+	6-	22+	16+	9-	4.0	44.0	14.0	7.0
13	A-Class League	15-	11-	19+	6+	9-	17+	16+	8-	4-	4.0	43.0	18.0	8.0
14	TACOS	7-	3-	23+	12+	10+	15+	5-	2-	18-	4.0	43.0	14.0	8.0
15	Kinoa Shogi	13+	22+	16+	3-	8-	14-	19+	6-	11-	4.0	42.0	15.0	8.0
16	My Move	19+	5-	15-	18+	17+	3-	13-	12-	23+	4.0	38.0	13.0	8.0

17	Misaki	18+	10-	1-	22+	16-	13-	24+	11-	20+	4.0	37.0	10.0	6.0
18	Usapyon2	17-	24+	9-	16-	11-	20-	21+	23+	14+	4.0	29.0	8.0	4.0
19	Shotest	16-	23+	13-	9-	12-	24+	15-	21+	22+	4.0	28.0	7.0	4.0
20	Yumeki	3-	7-	22-	24+	6-	18+	23+	9-	17-	3.0	35.0	5.0	1.0
21	WILDCAT	8-	2-	12-	23+	22+	10-	18-	19-	24+	3.0	33.0	4.0	1.0
22	ym-Shogi	11-	15-	20+	17-	21-	23+	12-	24+	19-	3.0	28.0	4.0	1.0
23	Auau Shogi	5-	19-	14-	21-	24+	22-	20-	18-	16-	1.0	31.0	0.0	0.0
24	Garyu	10-	18-	6-	20-	23-	19-	17-	22-	21-	0.0	33.0	0.0	0.0

Table. 2: Results of the Second Qualification Round.

* KCC Shogi, Monju, GPS Shogi, Shueso and Otsuki Shogi qualify for the finals.

4. The Finals

On the final day, I arrived at the venue reasonably early, with about half of the games of the first round still being played. Still, I was in for quite a shock, because the so far invincible KCC Shogi had lost against GPS Shogi and Otsuki Shogi had beaten Bonanza. More was to come, because Monju beat Gekisashi and Shueso won against YSS. This meant that in the first round the four top seeded programs had all lost their games! This had never happened before. Sometimes one of the seeds would drop a game, but in general the status quo of the top programs would remain almost intact.

The second round pretty much went the same way as the first round. GPS Shogi beat Gekisashi, Monju beat YSS and KCC Shogi lost again, this time against Otsuki Shogi. Only Bonanza showed why it was a seeded program as it beat Shueso. These results meant that after only two rounds last year's champion Gekisashi would already need a miracle to defend its title. KCC Shogi's dream of winning the CSA crown also went up in smoke after only two games.

Humans get used to the amazing very quickly, because the third round results seemed suddenly quite natural. GPS Shogi beat Bonanza, Otsuki Shogi beat YSS and Monju beat KCC Shogi. Again, only one seeded program won as Gekisashi beat Shueso. This meant the third straight loss for KCC Shogi, against an opponent it had already beaten twice in this tournament. Time to ask the operator if this was just a coincidence. It turned out that it probably wasn't. It seemed that on the evening before the final round, a new version was sent from North Korea, supposedly fixing some problem with the use of time in the opening. The operator was asked to play the new version in the final, but that probably was a big mistake. Even when the operator suggested to go back to the previous version after losing in the first round, he was told to keep using the new version. Only after three straight losses, the North Koreans seemed to come to their senses and allowed the operator to change back to the program that had been so successful on the previous days.

In the fourth round more of the same. GPS Shogi beat YSS, Otsuki Shogi beat Gekisashi, KCC Shogi beat Bonanza and Monju beat Shueso. So, after this round GPS Shogi, Otsuki Shogi and Monju all had four wins, Bonanza, KCC Shogi, Gekisashi and Shueso had one win and YSS was at the bottom of the table with four losses. The CSA tournament had become predictable again, but this time in completely reverse order! Whatever would happen next, we would have a brand new champion because either GPS Shogi, Otsuki Shogi or Monju would win this tournament.

Round 5 was huge for GPS Shogi. It beat Otsuki Shogi and because Monju lost against Bonanza, it suddenly found itself leading the tournament on its own. There seemed to be some moral justice in a single Bonanza beating six Bonanzas, but when thinking a little about it, it was not really David beating Goliath. After all, the Monju Bonanzas were only running on 4 processors each, while the "real"

Bonanza was running on eight. A faster machine without randomness beating slower versions with randomness doesn't seem so strange.

The sixth round had leader GPS Shogi playing Shueso, which wasn't making much impact in this final round. Most spectators closely followed the game between Otsuki Shogi and Monju, because if Monju would lose and GPS Shogi would win, GPS would be the new champions with one round left to play. Otsuki Shogi indeed beat Monju and when Shueso resigned a few minutes later we had a new champion: GPS Shogi!

With the champion decided this exciting tournament ended a bit on a low. The only question that remained was if GPS Shogi would be able to break through the CSA jinx that a champion crowned before the final round will lose its final game. This has happened four times in the past. Only Gekishashi managed to win all seven games in the 15th CSA tournament. Monju kept the jinx alive by convincingly beating GPS Shogi in the final round.

No.	Program Name	1	2	3	4	5	6	7	Pt	SB	MD
1	GPS Shogi	4+	6+	5+	7+	2+	8+	3-	6.0	17.0	10.0
2	Otsuki Shogi	5+	4+	7+	6+	1-	3+	8+	6.0	16.0	10.0
3	Monju	6+	7+	4+	8+	5-	2-	1+	5.0	14.0	7.0
4	KCC Shogi	1-	2-	3-	5+	8+	6+	7+	4.0	7.0	3.0
5	Bonanza	2-	8+	1-	4-	3+	7-	6+	3.0	8.0	2.0
6	Gekisashi	3-	1-	8+	2-	7+	4-	5-	2.0	2.0	0.0
7	YSS	8-	3-	2-	1-	6-	5+	4-	1.0	3.0	0.0
8	Shueso	7+	5-	6-	3-	4-	1-	2-	1.0	1.0	0.0

Table. 3: Results of the Finals

5. Conclusions

As said, the Bonanza program is still having a huge impact on computer shogi. The Bonanza Method was used by all the top programs in this year's tournament. GPS Shogi, Otsuki Shogi, Monju, KCC Shogi and Bonanza (of course) have all benefited from the Bonanza Method. Gekisashi and YSS have also tried it, but were unable to improve their programs and the results in this tournament seem to suggest that they might have to change their programs to fit the Bonanza Method in order to survive.

In general the level of the programs has improved considerably since last year. GPS Shogi is estimated to have a rating that is among the 50 best players on Shogi Club24, the biggest Internet shogi site. There are quite a number of professional players anonymously active on this site, so it seems likely that GPS Shogi is already stronger than a number of professional players.

We may get a better indication of the strength of the top program next year. This year there was no exhibition match between computers and human players, but chairman Yonenaga of the Japanese Shogi Federation announced at the party afterwards that it is very likely that a professional shogi player will play a computer at a special event in 2010. Sponsorship is going to be a problem in the current economic recession, but all parties concerned are very positive about making this event a reality.

Another interesting aside was that only a few programs had actually used the code that Bonanza made public in February. Only Monju was using the full code, and most programmers even seemed to take some pride in not even reading the Bonanza code. I am sure that next year a lot of programs (including

mine) will be using at least part of the Bonanza code. Bonanza will become the standard and everybody can build its own ideas on top of it. This opens the door for many new strong programs and it will be interesting to see how this wave of "Bonanza Children" will have an impact on next year's CSA Computer Shogi World Championships.