Groupware Support Design for Kansousen of Shogi

Hiroyuki Tarumi Yuki Hiraga Toshihiro Hayashi
Faculty of Engineering, Kagawa University, Japan
tarumi@eng.kagawa-u.ac.jp

Abstract

In this paper, we will give a requirement analysis for Kansousen of shogi – Japanese chess. Kansousen is a reviewing discussion process of a Shogi game after the game is over. In case of Internet games, there have been no convenient tools for Kansousen. We analyzed the Kansousen process and introduced four functions to support Kansousen via the Internet.

1. Introduction

Shogi (Japanese chess) is one of the good research targets for computer scientists. However, most of the research activities have been dedicated to develop strong AI programs for the game. Current AI programs are enough stronger than usual human players. Most players no longer need stronger programs.

The next thing for researchers to do is to provide more enjoyable environments for shogi games, whether the game is between human players or between human and AI. We are focusing on *kansousen* between players for shogi games on the Internet.

Kansousen is more popular with shogi games than those with chess or Go games. It is a review and discussion process between players after the game. They discuss to seek better moves at particular game positions. In case of internet games, it is obviously a networked remote discussion on a set of structured data and their state transitions, to which the concept of groupware can be applied.

In this paper, we describe the requirements analysis for groupware to support shogi's *kansousen*.

2. Shogi's Kansousen

Figure 1 is an example of interface of internet shogi game. Below the shogi board, there is a small chat window for both players to communicate. *Kansousen* is usually given in this chat window, but it is not so active because only chatting is the communication method.

Figure 2 depicts the moves of one game and some of its variations. In case of shogi, one game consists of about

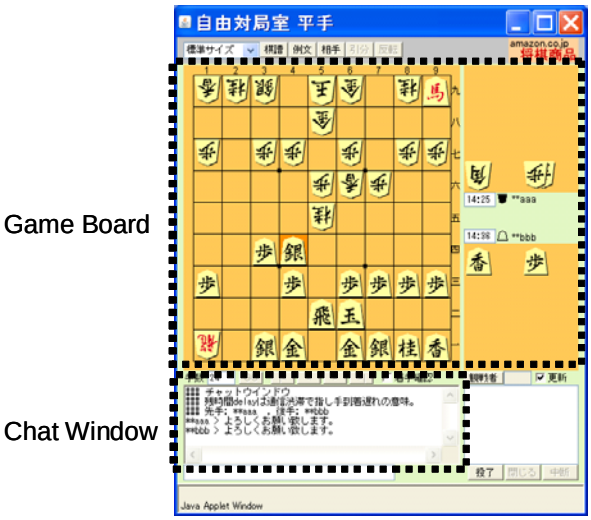

Figure 1. An Example of Internet Shogi

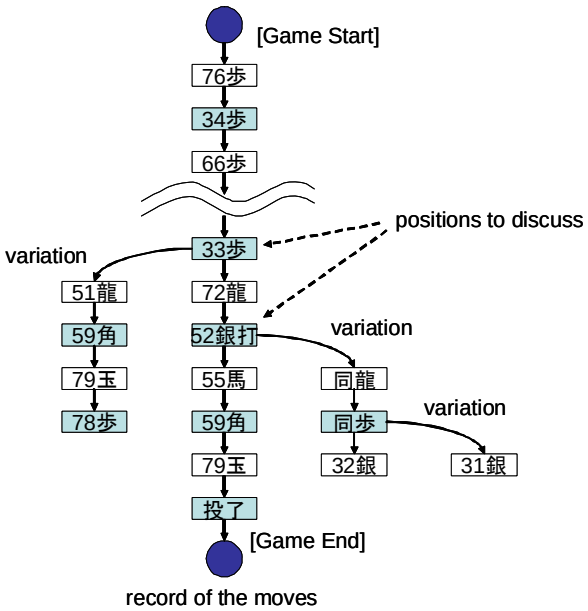

Figure 2. Variations of the Moves in a Game

100-120 moves in average. In *kansousen*, two players (and in some cases some observers) have discussions about the moves and its variations at particular positions. However, as we described above, *kansousen* in internet shogi games are less active than face-to-face games, when they can use physical pieces for the discussion.

3. Requirements Analysis

The second author of this paper is one of the shogi players in our university's team. He is also active as an internet shogi player and has been played more than 10 thousand games. According to his experiences, we have analyzed the requirements. The following four functions are considered to be high in priority for *kansousen* on internet shogi games.

3.1. Position Search

To start the discussion, players have to decide one position of the moves to discuss. In current internet shogi systems, the search for positions have to be done by clicking "forward" and "back" buttons, or directly pick up one of the positions in the moves record.

However, it would be more convenient for players if they can search a position by chatting in natural languages. For example, if a player inputs "When I put a rook (*hisha*) ..." the system would be able to understand the sentence and search candidate positions. It would not be so difficult because words to describe positions are limited.

In some cases, the search function needs more sophisticated algorithm. For example, players need to search a position where the battle started --- i.e., where a pawn first contacted an enemy's piece.

3.2. Input Support

People of wide generation are users of internet shogi sites. There are many players younger than 10 years old or older than 70. Chatting with a keyboard is not an easy task for them. For such people to enjoy *kansousen*, it is necessary to provide some input support functions. Typically interfaces with voice recognition are required. Voice recognition with the position search function above would help such players in *kansousen*. Here, frequent words used in *kansousen* are limited so that the development of input support functions would be not so difficult.

3.3. Graphical User Interface

Discussion in *kansousen* is mostly on variations from a position in the game. In such discussions, it is often the case that players compare two situations, one that appeared in the played game, and one that might appear in a variation. However, current software for internet shogi has only one board on the screen.

The reason why graphical interfaces of internet shogi software is poor is it is just designed to play games, not to have discussions. It is possible to re-design a totally changed interface as an integrated environment for playing shogi games, discussing it and letting people including observers communicate each other.

3.4. Supports by AI

As described in section 1, AI shogi playing programs are enough strong comparing with usual amateur players. When human players are in *kansousen*, they discuss variations of the moves. But they would possibly miss some important variations. It is possible that an AI program give suggestions on important variations that are missed in the discussion. Such instruction from AI program would help players' development.

It should be noted that the discussion must be controlled by human players and AI programs must give minimum instructions. Most human players take many mistakes in shogi games. To keep their motivations good, AI program should point out only a few important mistakes by humans.

4. Conclusions

In this paper, we pointed out that *kansousen* of internet shogi games is a good research target for groupware. We have analyzed requirements in *kansousen*, and showed four high-priority functions that should be supported.

Kansousen is a important communication process that improve players' shogi skills and also their communication skills. We hope our research will help expansion of shogi communities.

We are now developing some of the proposed functions.

5. Acknowledgements

We would like to thank Prof. Takeshi Ito and Prof. Hitoshi Matsubara for their advice. This research is supported by Hayao Nakayama Foundation for Science & Technology and Culture.