

Igo Math – Assessment components, more details

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1 Writing

There are two types of writing tasks for the course. One is the traditional short essay (500 words). The other one is the edited game record in SGF (Smart Game Format), that can be easily produced by an editing software (such as Sabaki, used in the course).

Introduction (short essay) *Did you know the game before starting this course?*

If yes, When did you start? Who taught you? Where did you play? How often? If no, Did you hear about the game before? What was the reason for not trying the game?

Game commentary (SGF) Using a game record editing software, write commentary for your best, most interesting game. Give information about the game, *Who/What was the opponent? Where was it played? What time? Under what circumstances?* Describe the overall character of the game, *Was it a peaceful one? Did it have some fierce fight?* For each of your moves (except the most obvious ones, like endgame moves), consider the following questions. *What was the purpose of this move? What did I think? What did it achieve?* Also, for the opponent's moves, *Was the opponent's move surprising? Did it change your plans?* Regarding the whole game, *What was the deciding move? Who had the initiative?*

Tsumego (SGF) Take an existing Go problem, or create your own, and comment all variations. *Which one is the solution, and why? Are there other solutions? How do they compare?* Give comments for the failing variations too.

Me and an AI (short essay) After playing the game of Go with human players and AI engines, *How does it feel to play against the computer? Which one is better, winning against a human opponent or against the machine? How about loosing?*

Closing thoughts (short essay) *What do you think of the game now? How did your opinion change during the course? How much did you learn? Did you get stronger?*

2 Presentation

Oral presentation in the classroom based on either a game commentary or a Go problem (see the SGF writing tasks). Length is 5 to 10 minutes, using game editing software or projected board.

What is the experience, insight that I can share with other students?

3 Midterm and final exams

The exams are in the traditional written format. Problems are similar to the ones given as homework assignments.

3.1 Go related problems

The problems here are very fundamental questions about the game, and not for measuring the strength of playing skills.

- Counting the number of groups and their sizes, given a configuration board.
- Recognizing false eyes.
- Deciding whether a group is living or not.
- Shared and internal liberties, recognizing mutual life situations (seki).
- Pairing final board configurations with their game records.
- Counting scores on a finished game on a small board.

3.2 Probability Theory

- Using Éló's algorithm, given two ranked players, how should we adjust their ranks based on the outcome of a match?

3.3 Graph Theory

- Finding the class of graphs (directed, tree, tournament, planar).

3.4 Combinatorics

- Using Éló's algorithm, given two ranked players, how should we adjust their ranks based on the outcome of a match?

3.5 Artificial Intelligence

- Solving a simple search problem by drawing the search graph.
- Drawing the game tree of a simple game.
- Executing the minimax algorithm on an abstract game tree.
- Calculating the activation of an artificial neuron cell.