

# My learning method – living with the AIs

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**The AIs changed everything.** This could be the short summary of how my learning method developed after experimenting with AI-assisted game analysis. Here is the current workflow.

- After playing, first I go through the game move by move, and write comments, identify bad or good moves, or I simply record the recollections of my thoughts during the game. This is a critical step. I have to document my own thinking before seeing the expert advice. This way, I will be able to confront my ideas with the AI recommendations later.
- Then, as the second step I rewind the game and start the analysis. The AI shows possible good moves with the associated probability values of winning. My ideas and moves can be contrasted with these instructions. This is often eye-opening and revealing. My move can get a low winning probability, or it is not even considered at all. In that case I try to figure out why my move was bad, revise my justification for making it and possibly adjust my thinking for future games. Correcting errors is the essence of an efficient learning process.

The analysis can take up significant amount time. Up to twice as much as the game itself. This is mainly due to checking the possible variations. It is also addictive. Maybe because understanding feels good. Sometimes the purpose of playing a game is to have good material for later analysis. A bit like the tail wagging the dog. This may pass later when the novelty of the analysis wears off.

Currently AIs do not verbalize the advice. They merely prompt thinking and give hints. I still have to do the thinking for myself, which is fair enough. Same for a human master, the apprentice still has to do the work. However, the presence of a master makes leveling up possible and quicker.

Learning is about correcting mistakes, so my initial strategy was to review lost games only. Then, by curiosity I tried to analyze won games too. Well, if analyzing lost games is revealing, then for won games it can be shocking. We have a tendency for believing that winning happens due to our smartness. However, we often make crude mistakes. It's just that the opponent makes an even more decisive one, so we win. Without an expert analysis, we can get the false sense of achievement. This is blocking progress. It can reinforce bad habits.

Before the widespread availability of superhuman AI engines, the best way to learn was to find a master player. Now just a PC with a good graphics card, or

a high spec tablet is needed. The social aspect, e.g. discussing the game with the opponent, is still very important, but the machine analysis can greatly enhance that too.

I expect the overall quality of Go playing will improve a lot, since these tools are more democratically available for many players. The ratio of online cheaters may rise, since the temptation is just too big to check a move while being in a game. But more importantly, our collective understanding of the game will deepen, and on the board play will be even more interesting.