19D070052 – Sheel Shah

Explain how I t + is obtained from I t , how I t ++ is obtained from I t +, and how I t+1 is obtained from I t ++. Also describe relations between the sizes of I t , I t +, I t ++, and I t+1 under common circumstances (ignoring corner cases such as illegal moves).

- It+ from It: For each board in It, we check if the 3x3 region that was sensed matches the output of the reconnaisance move. So we eliminate all boards that are inconsistent with the observation of the recon move.
- It++ from It+: We update the information of our pieces in each of the board in It+ since we know what move was played by us. If we find that some piece was captured, or if our move was illegal, we further eliminate boards from It+ that are incosistent with this information.
- It+1 from It++: For each board in It++, we simulate all possible moves that the opponent could make and this corresponds to It+1. If we receive information that some piece of ours was captured, we keep only those boards where some piece of the opponent is in the position where our piece was captured.
- Sizes: It+ is smaller than It, as more information helps eliminate boards. It++ is slightly smaller than It+, since each board is simply updated with the new position of our pieces (and very few inconsistent boards are eliminated [given information of piece capture etc.]). It+1 is much larger than It++, as for each state in It++, there are several moves that the opponent coud possibly make.