**1/22/18**

07-Adversarial-Search-I

zero-sum game: sum of each outcome is 0 (loss on one player is gain to another player)

Why study 2PZS(2 player zero sum) Games in AI:

* Games are idalizations of problems
* AI researchers can study the theory and practice of search algorithms in an easier information environment than more complex problems.
* allow us to focus on pure search rather than search on subjective + randomness

**Static Evaluation Functions**

* compute a heuristic (real value function h(s) )
  + h(s) will be high if it is favorable to one player (Max) and unfavorable to the other player (Min)
  + h(s) is a static evaluation function
* Checkers Example:
  + h(s) =
    - = Max’s king advantage
    - = Max’s single man advantage
    - scoring polynomial
      * coefficients + featured values

**Minimax Search**

* Look one move ahead:
  + generate all successors of the current state and apply the static evaluation function (scoring polynomial) to each of them and choose the state with the maximum score
* Looking two moves ahead:
  + Consider the positions our opponents can get two in one move, from each of our positions that we can get to in one move