

Simulated Annealing

- A hill-climbing algorithm which never makes a move towards a lower value guaranteed to be incomplete because it can get stuck on a local maximum.
- And if algorithm applies a random walk, by moving a successor, then it may complete but not efficient.
- **Simulated Annealing** is an algorithm which yields both efficiency and completeness.
- In mechanical term **Annealing** is a process of hardening a metal or glass to a high temperature then cooling gradually, so this allows the metal to reach a low-energy crystalline state.
- The same process is used in simulated annealing in which the algorithm picks a random move, instead of picking the best move.
- If the random move improves the state, then it follows the same path.
- Otherwise, the algorithm follows the path which has a probability of less than 1 or it moves downhill and chooses another path.