

## Tutorial-6

① what do you mean by minimum spanning tree? what are the application of MST?

Ans The Minimum Spanning Tree is the one whose cumulative edge weights have the smallest value, however. Think of it as the least cost path that goes through the entire graph and touches every vertex.

The application of MST are —

- ① max bottleneck path
  - ② LDPC codes for error correction
  - ③ Image registration with Regg entropy.
  - ④ Learning salient features for real-time face verification.
- ② Please analyse the time and space complexity of Prim, Kruskal, Dijkstra and Bellman ford algorithm.

Ans Time complexity

① Dijkstra Algorithm =  $O(V \log(V) + E)$

② Prim Algo. =  $O(E + V \log V)$

③ Kruskal Algo. =  $O(E \log(V))$

④ Bellman ford Algo. =  $O(VE)$