

# Viterbi Decoding Algorithm

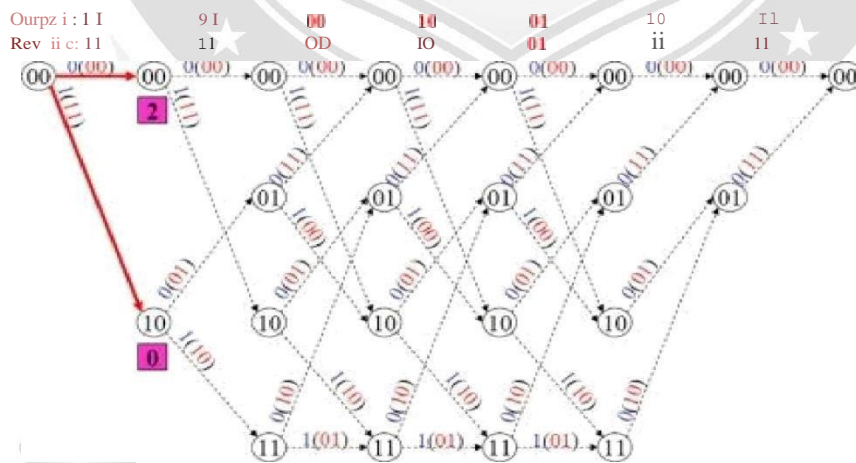
An efficient search algorithm, Performing ML decoding rule.

## Viterbi Decoding Algorithm

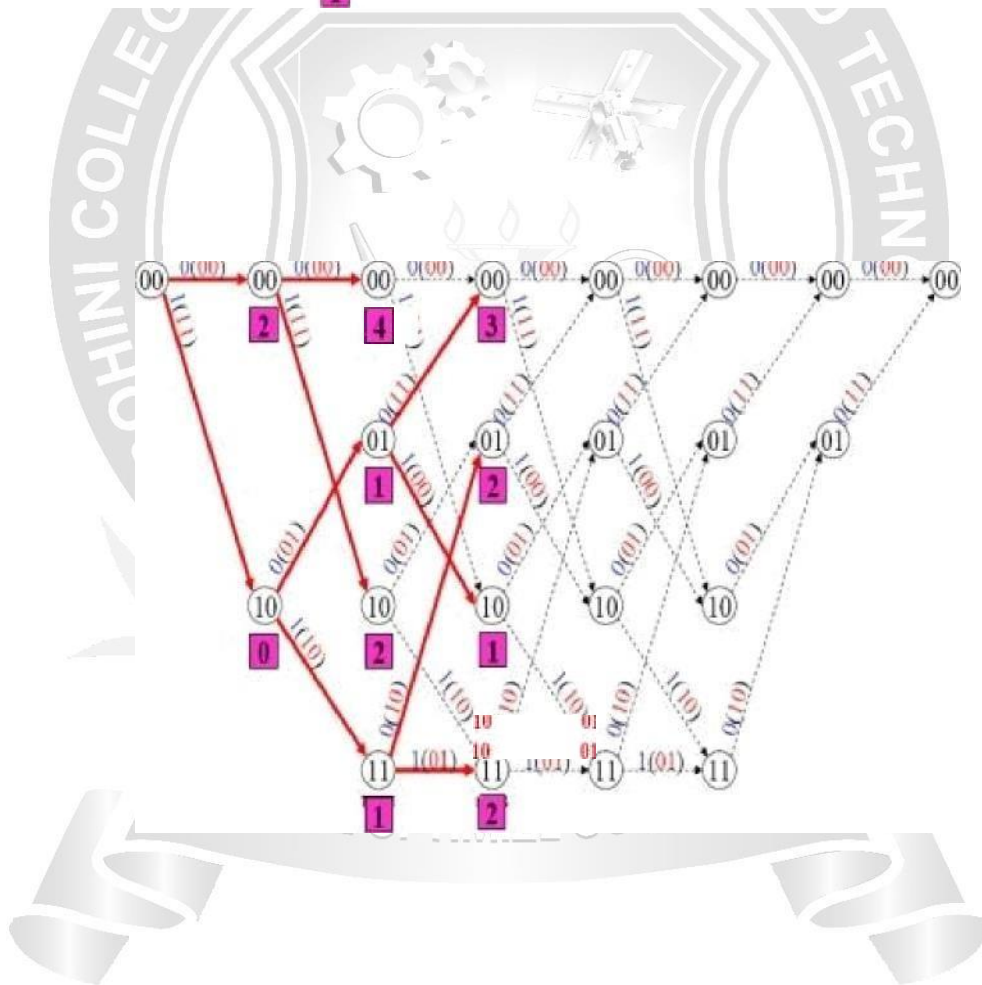
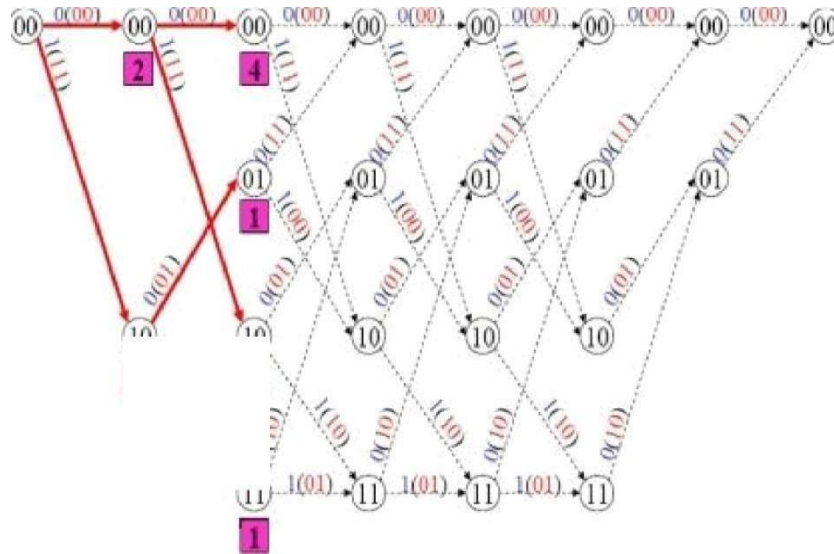
- An efficient search algorithm
- Performing ML decoding rule.
- Reducing the computational complexity.

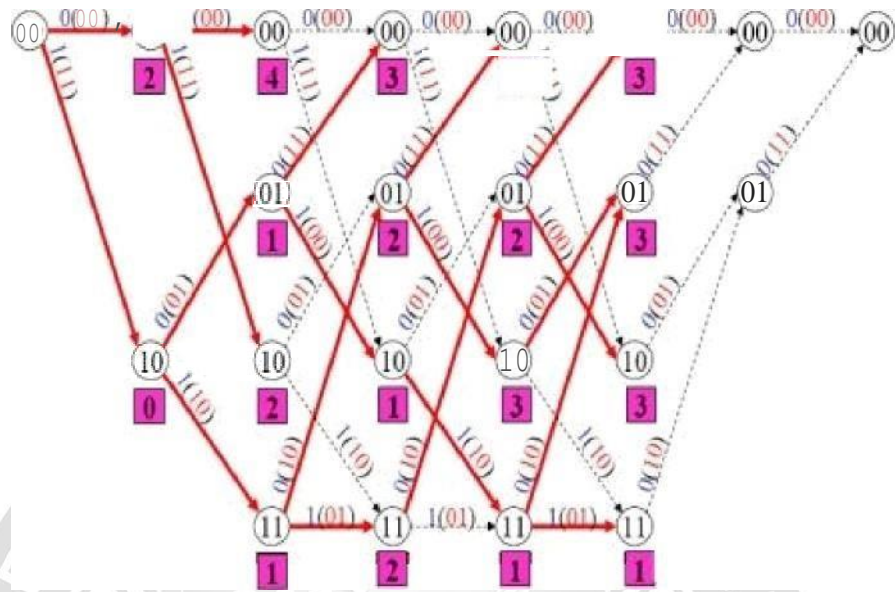
### Basic concept

- Generate the code trellis at the decoder
- The decoder penetrates through the code trellis *level by level* in search for the transmitted code sequence
- At each level of the trellis, the decoder computes and compares the metrics of all the partial paths entering a node
- The decoder *stores* the partial path with the larger metric and *eliminates* all the other partial paths. The stored partial path is called the *survivor*.



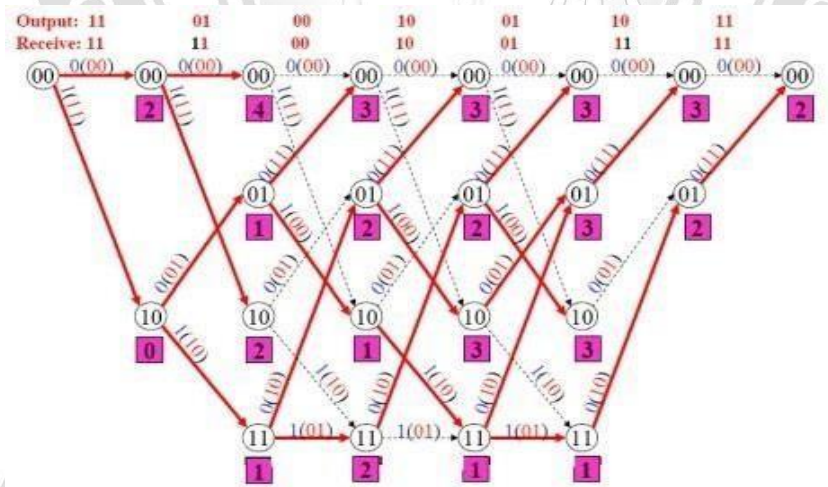
Rere:-e: 11      11      00      10      01      11      11





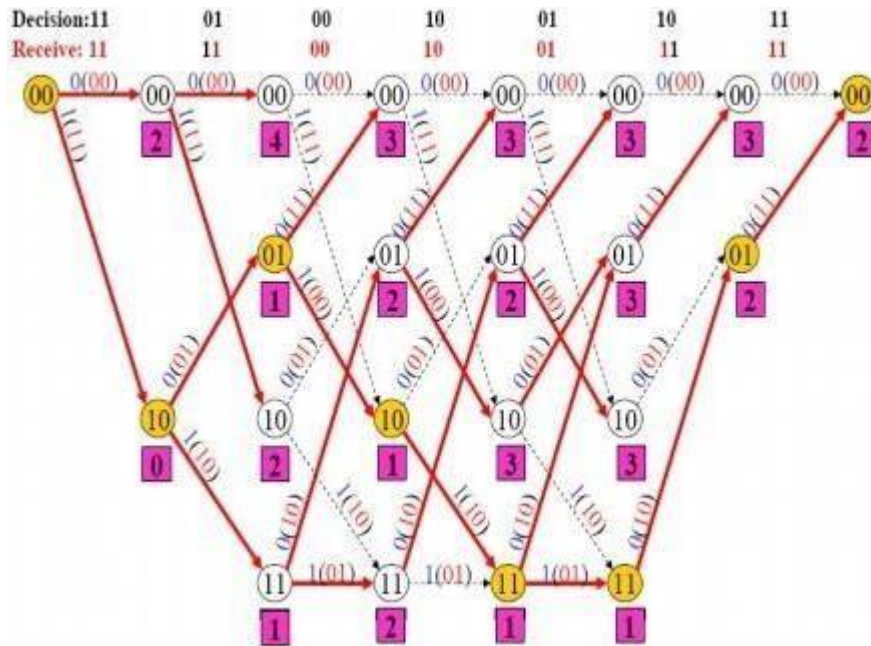
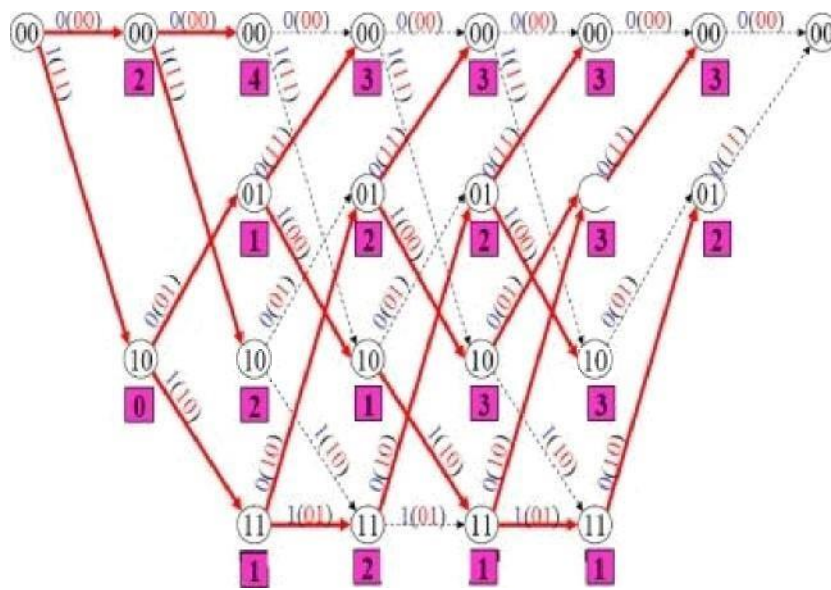
Receive: 11 11

10



Output: 11  
Receive: 11

01



(Source: J.G Proakis, —Digital Communication, 4th Edition, Tata Mc Graw Hill Company, 2001)