

# Viterbi Decoding Algorithm

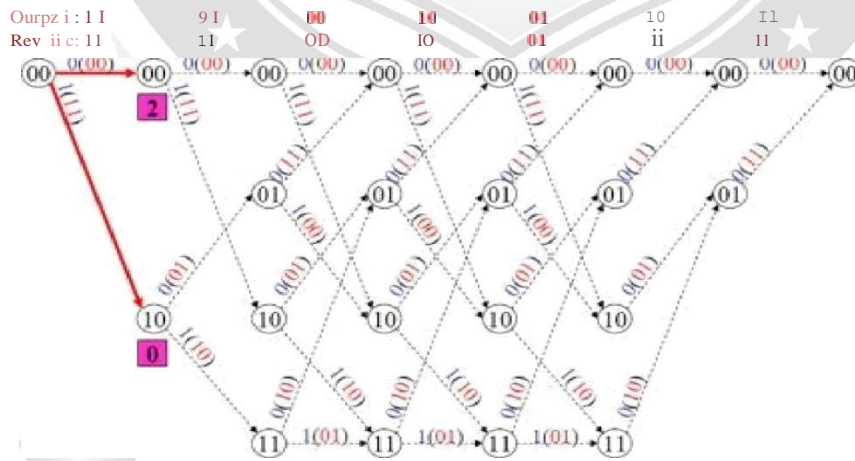
An efficient search algorithm, Performing ML decoding rule.

## 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*.



Rerei\*-e: 11

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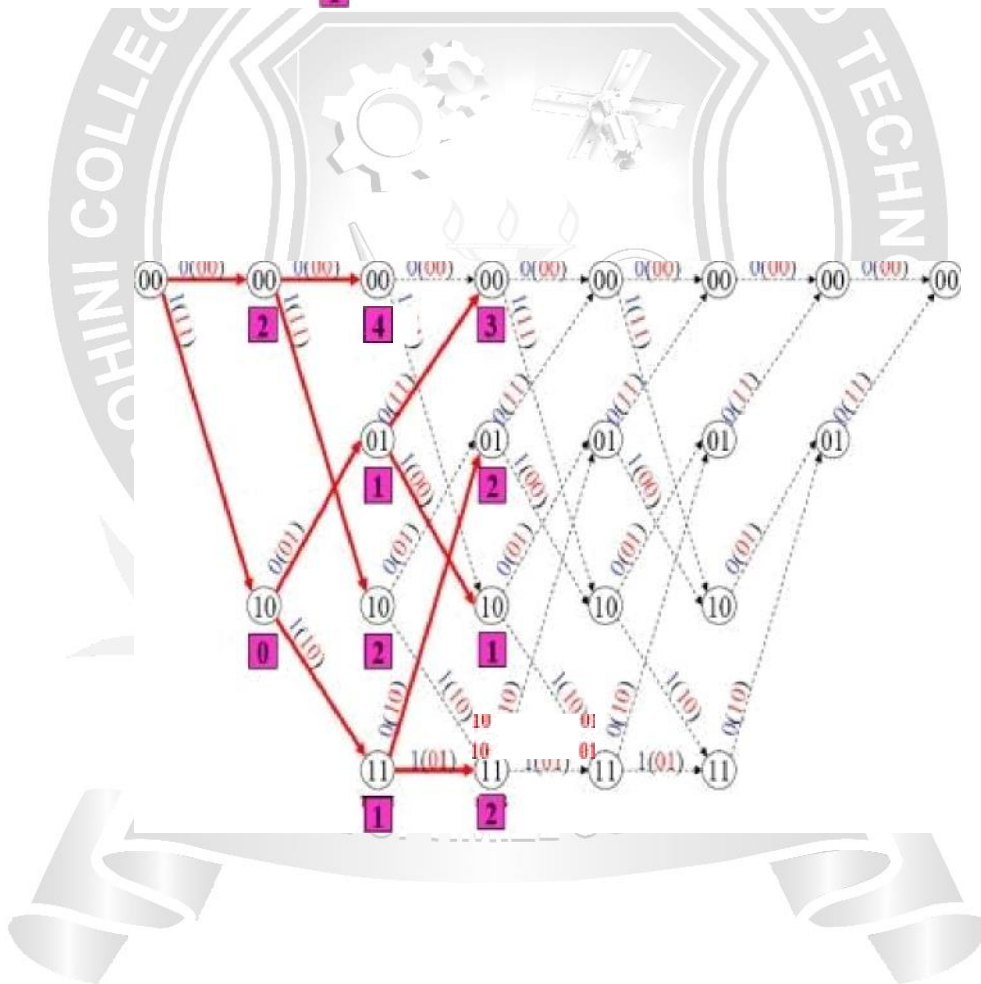
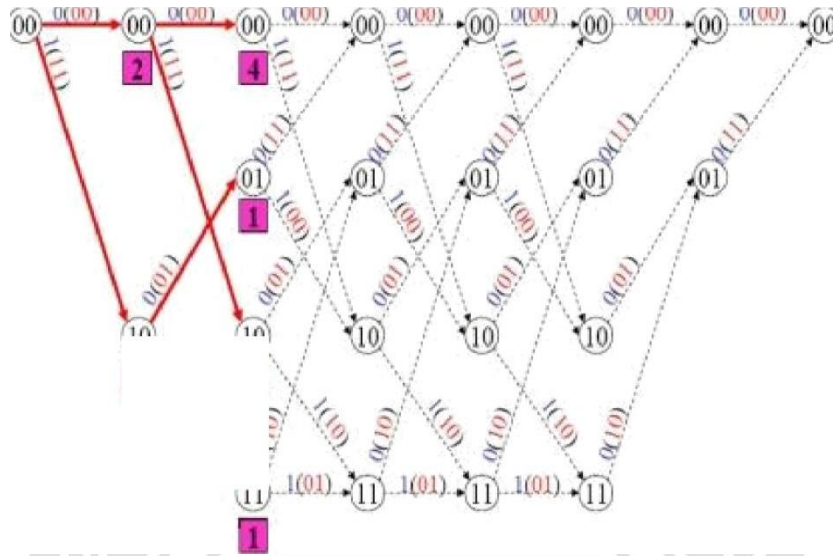
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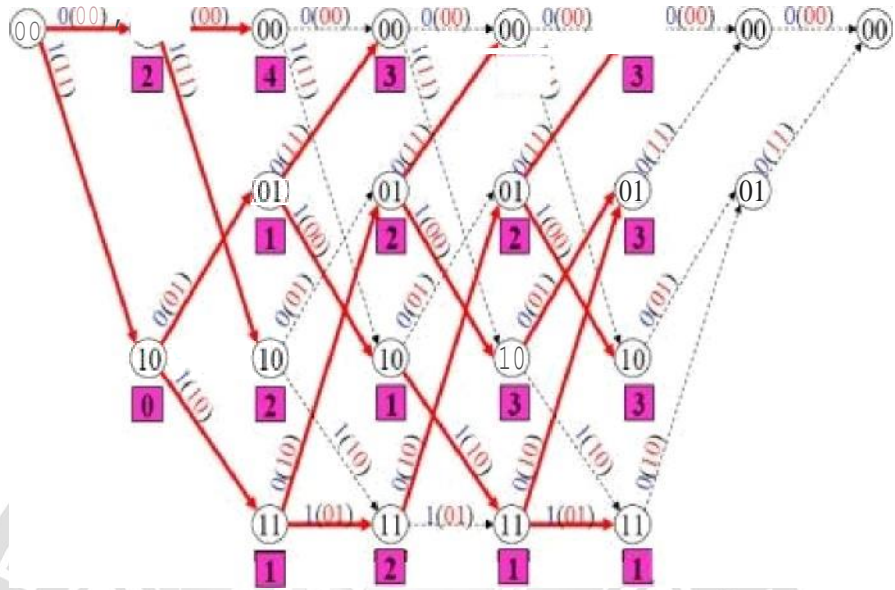
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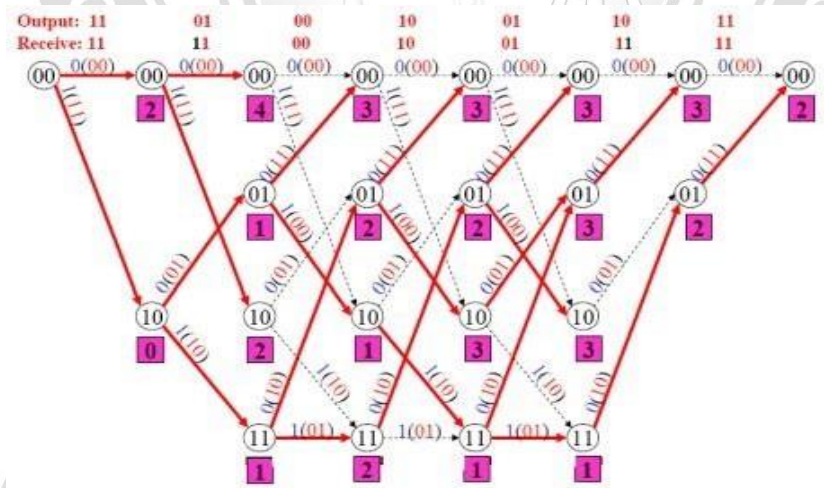




Receive: 11

11

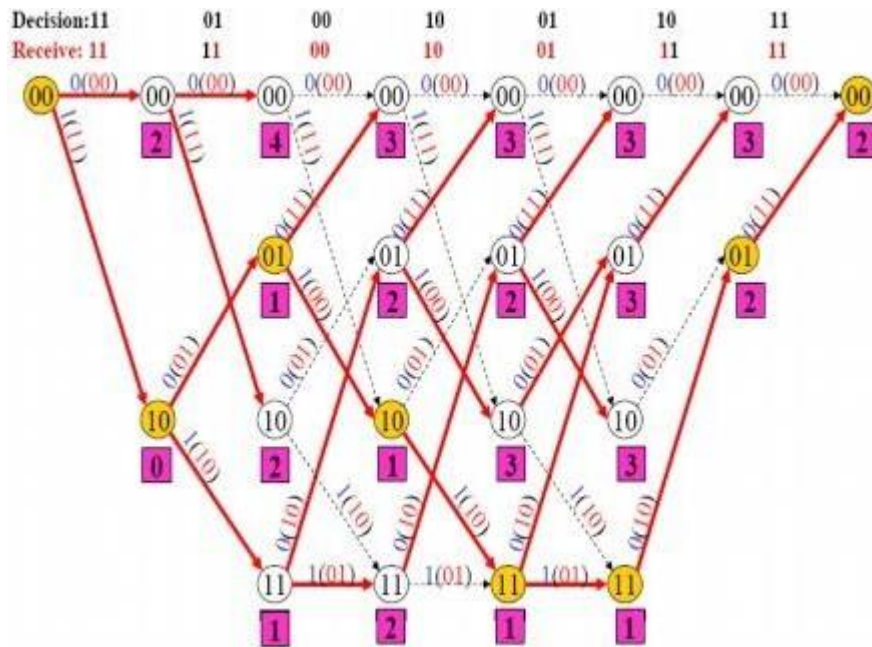
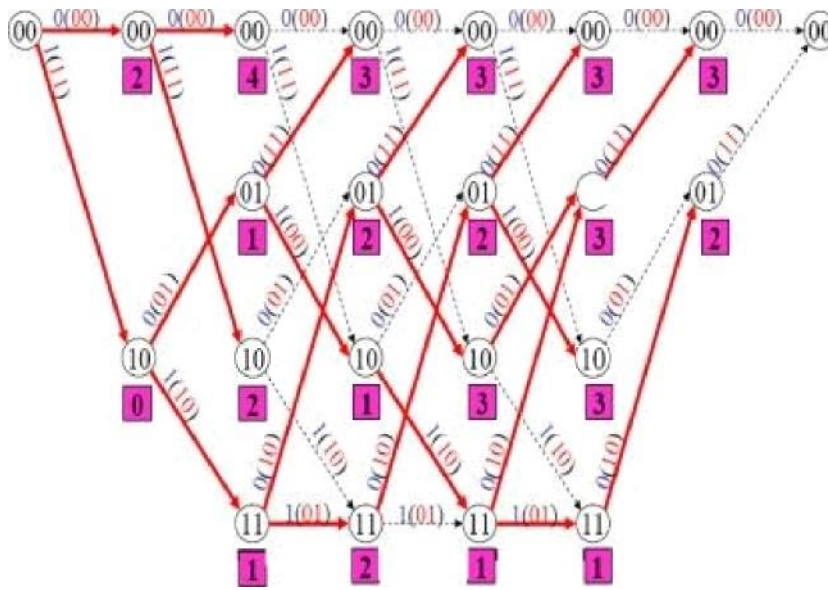
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Output: 11

Receive: 11

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