

CS 6320 Natural Language Processing

Homework 3

Viterbi Algorithm

Implement the Viterbi Algorithm and run it with the HMM in Figure 1 to compute the most likely physical condition of a patient.

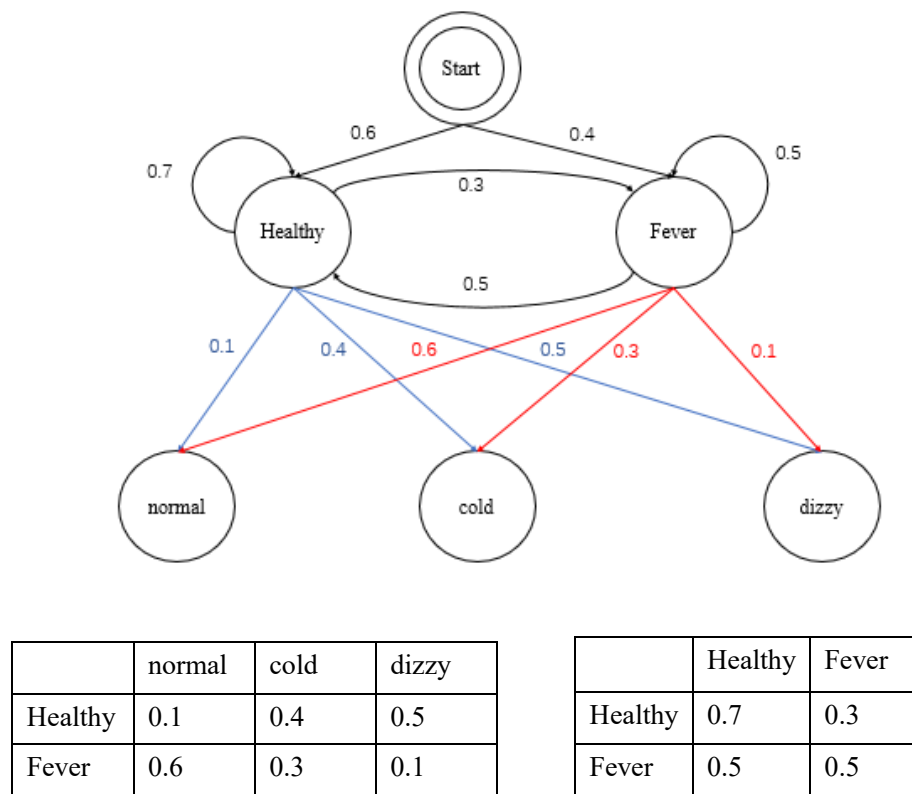


Figure 1. A Hidden Markov Model for relating observations (normal, cold and dizzy) to condition (Healthy and Fever). For this example, we are not using an end-state, instead allowing both states Healthy and Fever to be a final (accepting) state.

What to turn in:

Your code and a Readme file for compiling the code. The Readme file should contain a command line that can be used to compile and execute your program directly.

Python Viterbi.py <sequence>

Example of input/output:

input:

Python Viterbi.py "DDNNCCDND"

(D-dizzy, N-normal, C-cold)

output:

HHFFHHHFFH

(H-Healthy, F-Fever)