COMP 652: Assignment 3

Due on Tuesday, March 31 2015

Presented to Dr. Doina Precup

Geoffrey Stanley
Student ID: 260645907

Question 1

A)

B)

C)

Question 2

Question 3

A)

As with standard Hidden Markov Models, Coupled Hidden Markov models will have three categories of parameters. These are the initial probabilities, the transition probabilites and the emission probabilities. Given the system depicted in Figure 1 of assignment 3:

Initial Probabilities:
$$P(s0) \tag{1}$$
$$P(u0) \tag{2}$$

Transition Probabilities:
$$P(s_i|s_{i-1}, u_{i-1}) \tag{3}$$
$$P(u_i|u_{i-1}, s_{i-1}) \tag{4}$$

Emission Probabilities:
$$P(y_i|s_i) \tag{5}$$
$$P(z_i|u_i) \tag{6}$$

B)

C)

D)

E)