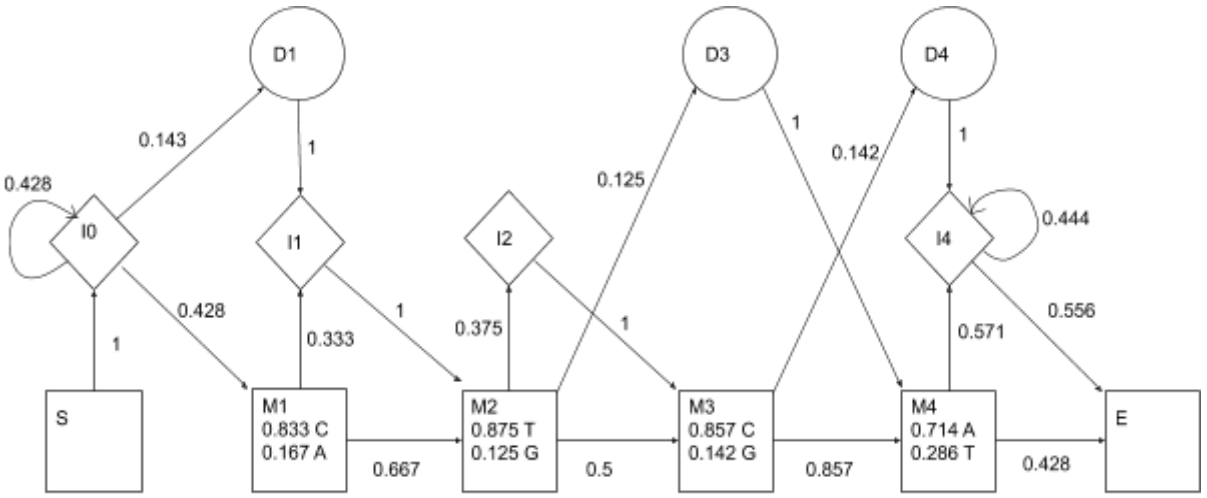
1.

pHMM:



2.

	_	C	T	C	T	G	A
S	1	0	0	0	0	0	0
I0	0	0.25	2.68E-2	2.86E-3	3.06E-4	3.28E-5	3.50E-6
I1	0	0	8.93E-3	9.58E-4	7.95E-4	1.09E-5	1.17E-6
I2	0	0	0	0	0	5.22E-4	9.32E-6
I4	0	0	0	0	0	0	8.01E-6
M1	0	0	0	9.55E-3	0	0	2.34E-6
M2	0	0	0	0	5.57E-3	9.94E-5	0
M3	0	0	0	0	0	3.95E-4	0
M4	0	0	0	0	0	0	2.42E-4
D1	0	3.57E-2	3.83E-3	4.09E-4	4.38E-5	4.69E-6	5.01E-7
D3	0	0	0	0	6.96E-4	1.24E-5	0
D4	0	0	0	0	0	5.61E-5	0
E	0	0	0	0	0	0	1.04E-4

The probability is 1.04E-4.

Best path S -> I_0 -> I_0 -> M_1 -> M_2 -> M_3 -> M_4 -> E