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AI Fall 2018

HW # 9

Problem 1:

Dogs wag tail and bark

Noun Noun Verb Conj Noun

P(S0->S1) * P(S1->S2) * P(S2->S4) * P(S4->S8) * P(S8->S6) * P(S6->S5) * P(S5->S11)

1 * 0.1 * 0.6 * 0.4 * 0.4 * 0.3 * 1 * 0.8 * 0.2 * 0.2 * 1 * 0.2 = 0.000018432

Noun Noun Verb Conj Verb

P(S0->S1) * P(S1->S2) * P(S2->S4) * P(S4->S8) * P(S8->S7) * P(S7->S10) * P(S10->S11)

1 * 0.1 * 0.6 * 0.4 * 0.6 * 0.4 * 1 * 0.8 * 0.2 * 0.2 * 1 * 0.8 = 0.000147456

Noun Verb Noun Conj Noun

P(S0->S1) * P(S1->S4) * P(S4->S9) * P(S9-> S3) * P(S3->S6) * P(S6->S5)

1 * 0.7 * 0.2 * 0.6 * 0.8 * 0.3 * 0.8 * 0.8 * 0.8 * 1 * 0.2 = 0.002064384

Noun Verb Noun Conj Verb

P(S0->S1) * P(S1->S4) * P(S4->S9) * P(S9-> S3) * P(S3->S7) * P(S7->S10)

1 * 0.7 * 0.2 * 0.6 * 0.2 * 0.4 * 0.8 * 0.8 * 0.8 * 1 * 0.8 = 0.002752512

Problem 2:

Wag tail

Noun Noun

S0 -> S1 -> S3-> S5 -> S11

Problem 3:

 Noun Noun Verb Noun Noun Verb
Dog dog dog dog dog dog
S0->S1->S2 -> S4 -> S9 -> S2 -> S4 -> S10 -> S11

Problem 4:

S0 : *START* * START*
S1 : *START* Noun
S2 : Noun Verb
S3: Noun Prep
S4: Noun *END*
S5: Prep Noun
S6: Verb Noun
S7: Verb Prep
S8: Verb *END*
S9: *END* *END*