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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\*