(67658) NLP | תרגיל 4

שם: רונאל חרדים, עומרי טויטו | ת"ז:208472761, 208917641

שאלה 1

ה $evaluation$ **שקיבלנו על הטסט שווה ל:**

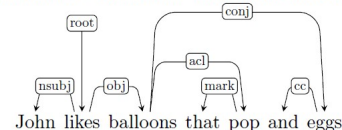Test evaluation is: 0.3226450923383182

שאלת בונוס:

לקחנו בחשבון גם את המרחק בין הקודקודים. הוספנו פרמטר שמוסיף משקל גבוה יותר לצלע, אם המרחק בין הקודקודים הוא נמוך יותר. עשינו זאת ע"י הוספת $\frac{4}{distance}$ לחישוב ה feature function.

ה $evaluation$ **שקיבלנו על הטסט בשאלת הבונוס ששווה ל:**

Test evaluation for bonus is: 0.49188536183841386

היה שיפור של 1.7, וזה הגיוני כי נרצה לתת מרחק שלילי \ נמוך יותר לצלעות רחוקות, משום שזה פחות נכון.

שאלה 2

Consider the sentence s: "John likes balloons that pop and eggs",

(א)

ניצור את המשפט בעזרת מערכת $Arc - Standart$:

1. shift

$$stack = [ROOT, Jhon]$$

$$stack = [ROOT, Jhon, likes]$$

$$stack = [ROOT, likes]$$

$$A = [likes \Rightarrow Jhon]$$

$$stack = [ROOT, likes, balloons]$$

$$A = [likes \Rightarrow Jhon]$$

$$stack = [ROOT, likes, balloons, that]$$

$$A = [likes \Rightarrow Jhon]$$

$$stack = [ROOT, likes, balloons, that, pop]$$

$$A = [likes \Rightarrow Jhon]$$

$$stack = [ROOT, likes, balloons, pop]$$

$$A = [likes \Rightarrow Jhon, pop \Rightarrow that]$$

$$stack = [ROOT, likes, balloons]$$

$$A = [likes \Rightarrow Jhon, pop \Rightarrow that, balloons \Rightarrow pop]$$

shift .9

$$stack = [ROOT, likes, balloons, and]$$

$$A = [likes \Rightarrow Jhon, pop \Rightarrow that, balloons \Rightarrow pop]$$

shift .10

$$stack = [ROOT, likes, balloons, and, eggs]$$

$$A = [likes \Rightarrow Jhon, pop \Rightarrow that, balloons \Rightarrow pop]$$

left arc .11

$$stack = [ROOT, likes, balloons, eggs]$$

$$A = [likes \Rightarrow Jhon, pop \Rightarrow that, balloons \Rightarrow pop, eggs \Rightarrow end]$$

righr arc .12

$$stack = [ROOT, likes, balloons]$$

$$A = [likes \Rightarrow Jhon, pop \Rightarrow that, balloons \Rightarrow pop, eggs \Rightarrow end, bloons \Rightarrow eggs]$$

$$stack = [ROOT, likes]$$

$$A = [likes \Rightarrow Jhon, pop \Rightarrow that, balloons \Rightarrow pop, eggs \Rightarrow end, bloons \Rightarrow eggs, likes \Rightarrow baloons]$$
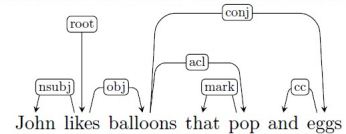
righr arc .14

$$stack = [ROOT]$$

$$A = [likes \Rightarrow Jhon, pop \Rightarrow that, balloons \Rightarrow pop, eggs \Rightarrow end, bloons \Rightarrow eggs, likes \Rightarrow baloons, ROOT \Rightarrow likes]$$

סה"כ: סדרה באורך 14

(ב)

Consider the sentence s: "John likes balloons that pop and eggs",

ניצור את המשפט בעזרת מערכת $Arc - eager$:

shift .1

$$stack = [ROOT, Jhon]$$

$$B = [likes, baloons, that, pop, and, eggs]$$

left arc .2

$$stack = [ROOT]$$

$$B = [likes, baloons, that, pop, and, eggs]$$

$$A = [likes \Rightarrow Jhon]$$

4

$$stack = [ROOT, likes]$$

$$B = [balloons, that, pop, and, eggs]$$

$$A = [likes \Rightarrow Jhon, ROOT \Rightarrow likes]$$

$$stack = [ROOT, likes, balloons]$$

$$B = [that, pop, and, eggs]$$

$$A = [likes \Rightarrow Jhon, ROOT \Rightarrow likes, likes \Rightarrow balloons]$$

$$stack = [ROOT, likes, balloons, that]$$

$$B = [pop, and, eggs]$$

$$A = [likes \Rightarrow Jhon, ROOT \Rightarrow likes, likes \Rightarrow balloons]$$

$$stack = [ROOT, likes, balloons]$$

$$B = [pop, and, eggs]$$

$$A = [likes \Rightarrow Jhon, ROOT \Rightarrow likes, likes \Rightarrow balloons, pop \Rightarrow that]$$

$$stack = [ROOT, likes, balloons, pop]$$

$$B = [and, eggs]$$

$$A = [likes \Rightarrow Jhon, ROOT \Rightarrow likes, likes \Rightarrow balloons, pop \Rightarrow that, balloons \Rightarrow pop]$$

reduce .8

$$stack = [ROOT, likes, balloons]$$

$$B = [and, eggs]$$

$$A = [likes \Rightarrow Jhon, ROOT \Rightarrow likes, likes \Rightarrow balloons, pop \Rightarrow that, balloons \Rightarrow pop]$$

shift   .9

$$stack = [ROOT, likes, balloons, and]$$

$$B = [eggs]$$

$$A = [likes \Rightarrow Jhon, ROOT \Rightarrow likes, likes \Rightarrow balloons, pop \Rightarrow that, balloons \Rightarrow pop]$$

left arc   .10

$$stack = [ROOT, likes, balloons]$$

$$B = [eggs]$$

$$A = [likes \Rightarrow Jhon, ROOT \Rightarrow likes, likes \Rightarrow balloons, pop \Rightarrow that, balloons \Rightarrow pop, eggs \Rightarrow and]$$

$$stack = [ROOT, likes, balloons, eggs]$$

$$B = []$$

$$A = [likes \Rightarrow Jhon, ROOT \Rightarrow likes, likes \Rightarrow balloons, pop \Rightarrow that, balloons \Rightarrow pop, eggs \Rightarrow and, nalloons \Rightarrow eggs]$$

סה"כ: סדרה באורך 11