

Homework 3

Problem 1:

I got the following result:

S1: [Arg1 Sales of the company] to return [ArgM-PRP to normalcy].

S2: [Arg0 The new products and services] contributed [ArgM-PRP to increase] [Arg1 revenue].

S3: [Arg1 Dow] falls as [Arg0 recession indicator] flashed [Arg1 red] and [Arg0 economical worries] continue [ArgM-TMP through the month].

S4: [Arg0 Figure skater] lands [Arg1 historic quadruple jump] [ArgM-LOC in senior international competition] [ArgM-LOC at the 2019 World Figure Skating Championships] [ArgM-TMP on Day 3] [ArgM- DIS but] [ArgM-MOD could] [ArgM-ADV only] clinch [Arg1 a silver medal].

Problem 2:

a/ Identify manually the Named Entities in the following short text.

[**PER Solange Knowles**] will not be performing at this year's [**ENT Coachella Music and Arts Festival**] after all. The [**ENT music festival**]'s official [**ORG Twitter**] account announced the news Sunday night. [**PER Knowles**] released her new album, "[**ALB When I Get Home**]," last month. An accomplished singer, songwriter, dancer, DJ and style guru, [**PER Knowles**] graced the [**LOC Coachella stage**] last year when she joined her big sister, [**PER Beyoncé**], during her historic, headlining tour. [**PER Ariana Grande**], [**PER Childish Gambino**], and [**PER Tame Impala**] are headlining the festival this year. [**ENT Coachella**] takes place annually over two weekends in April in [**LOC Indio**], [**LOC California**].

There are 15 Named entities in this sentence: 7 of them are PERSON(PER), 3 of them are LOCATION(LOC), 3 of them are ENTERTAINMENT-EVENT(ENT), 1 of them is ORGANIZATION(ORG), and 1 of them is ALBUM-TITLE(ALB).

b/ Use the IOB notation to indicate the labels that you would assign to the text from Problem 2.a.

format:

Words	IOB Label
American	B-ORG
Airlines	I-ORG
,	O
a	O
unit	O
of	O
AMR	B-ORG
Corp.	I-ORG
,	O
immediately	O
matched	O
the	O
move	O
,	O
spokesman	O
Tim	B-PER
Wagner	I-PER
said	O
.	O

Table 1 for sentence 1		Table 2 for sentence 2		Table 3 for sentence 3	
Word	IOB Label	Word	IOB Label	Word	IOB Label
Solange	B-PER	The	O	Knowles	B-PER
Knowles	I-PER	music	B-ORG	released	O
will	O	festival	I-ORG	her	O
not	O	's	I-ORG	new	O
be	O	official	I-ORG	album	O
performing	O	Twitter	I-ORG	,	O
at	O	account	I-ORG	“	O
this	O	announced	O	When	B-ALB
year	O	the	O	I	I-ALB
's	O	news	O	Get	I-ALB
Coachella	B-ENT	Sunday	O	Home	I-ALB
Music	I-ENT	night	O	,	O
and	I-ENT	.	O	“	O
Arts	I-ENT			last	O
Festival	I-ENT			month	O
after	O			.	O
all	O				
.	O				
Table 4 for sentence 4		Table 5 for sentence 5		Table 6 for sentence 6	
Word	IOB Label	Word	IOB Label	Word	IOB Label
An	O	Ariana	B-PER	Coachella	B-ENT
accomplished	O	Grande	I-PER	takes	O
singer	O	,	O	place	O
,	O	Childish	B-PER	annually	O
songwriter	O	Gambino	I-PER	over	O
,	O	,	O	two	O
dancer	O	and	O	weekends	O
,	O	Tame	B-PER	in	O

DJ	O	Impala	I-PER	April	O
and	O	are	O	in	O
style	O	headlining	O	Indio	B-LOC
guru	O	the	O	,	O
,	O	festival	B-ENT	California	B-LOC
Knowles	B-PER	this	O	.	O
graced	O	year	O		
the	O	.	O		
Coachella	B-LOC				
stage	L-LOC				
last	O				
year	O				
when	O				
she	O				
joined	O				
her	O				
big	O				
sister	O				
,	O				
Beyoncé	B-PER				
,	O				
during	O				
her	O				
historic	O				
,	O				
headlining	O				
tour	O				
.	O				

c/ Annotate manually the temporal expressions in the text from Problem 2.a.
format:

A fare increase initiated <TIMEX3>last week</TIMEX3> by UAL Corp's United Airlines was matched by competitors over <TIMEX3>the weekend</TIMEX3>, marking the second successful fare increase in <TIMEX3>two weeks</TIMEX3>.

Solange Knowles will not be performing at <TIMEX3>this year</TIMEX3> 's Coachella Music and Arts Festival after all. The music festival's official Twitter account announced the news <TIMEX3>Sunday night</TIMEX3>. Knowles released her new album, "When I Get Home," <TIMEX3>last month</TIMEX3>. An accomplished singer, songwriter, dancer, DJ and style guru, Knowles graced the Coachella stage <TIMEX3>last year</TIMEX3> when she joined her big sister, Beyoncé, during her historic, headlining tour. Ariana Grande, Childish Gambino, and Tame Impala are headlining the festival <TIMEX3>this year</TIMEX3>. Coachella takes place <TIMEX3>annually</TIMEX3> over <TIMEX3>two weekends</TIMEX3> in <TIMEX3>April</TIMEX3> in Indio, California.

d/ Perform temporal normalization of the temporal expressions you have identified in the text from Problem 2.a and produce an annotation of the normalized temporal expressions in the text.

The document was posted on April 14th, 2019.

Solange Knowles will not be performing at <TIMEX3 id="t1" type="DATE" value="2019">this year</TIMEX3> 's Coachella Music and Arts Festival after all. The music festival's official Twitter account announced the news <TIMEX3 id="t2" type="DATE" value="2019-04-07" anchorTimeID="t1">Sunday night</TIMEX3>. Knowles released her new album, "When I Get Home," <TIMEX3 id="t3" type="DATE" value="2019-03" anchorTimeID="t1">last month</TIMEX3>. An accomplished singer, songwriter, dancer, DJ and style guru, Knowles graced the Coachella stage <TIMEX3 id="t4" type="DATE" value="2018" anchorTimeID="t1">last year</TIMEX3> when she joined her big sister, Beyoncé, during her historic, headlining tour. Ariana Grande, Childish Gambino, and Tame Impala are headlining the festival <TIMEX3 id="t5" type="DATE" value="2019" anchorTimeID="t1">this year</TIMEX3>. Coachella takes place <TIMEX3 id="t6" type="EVERY" value="P1Y">annually</TIMEX3> over <TIMEX3 id="t7" type="DURATION" value="P2WE" anchorTimeID="t8">two weekends</TIMEX3> in <TIMEX3 id="t8" type="DATE" value="XXXX-04">April</TIMEX3> in Indio, California.

e/ Identify in the text from Problem 2.a all the relations of the following types.

TYPE 1: PERSON → *Entertainer* → ENTERTAINMENT-EVENT (PER → *Entertainer* → ENT)

TYPE 2: PERSON → *Family* → PERSON (PER → *Family* → PER)

TYPE 3: PERSON → *Involved-in* → ALBUM-TITLE (PER → *Involved-in* → ALB)

TYPE 4: ENTERTAINMENT-EVENT → *Happens-in* → LOCATION (ENT → *Happens-in* → LOC)

TYPE 5: ENTERTAINMENT-EVENT → *Communicates-through* → ORGANIZATION (ENT → *Communicates-through* → ORG)

When presenting the relations that you manually discover, use the following format:

[Tim Warner]_{PER} → Spokesman → [American Airlines]_{ORG}

In a, I got:

[**PER Solange Knowles**] will not be performing at this year's [**ENT Coachella Music and Arts Festival**] after all. The [**ENT music festival**]'s official [**ORG Twitter**] account announced the news Sunday night. [**PER Knowles**] released her new album, "[**ALB When I Get Home**]," last month. An accomplished singer, songwriter, dancer, DJ and style guru, [**PER Knowles**] graced the [**LOC Coachella stage**] last year when she joined her big sister, [**PER Beyoncé**], during her historic, headlining tour. [**PER Ariana Grande**], [**PER Childish Gambino**], and [**PER Tame Impala**] are headlining the festival this year. [**ENT Coachella**] takes place annually over two weekends in April in [**LOC Indio**], [**LOC California**].

From this, I found 4 relations in Type 1, 1 in Type 2, 1 in Type 3, 2 in Type 4 and 1 in Type 5.

TYPE 1: [Knowles]_{PER} → Entertainer → [Coachella Music and Arts Festival]_{ENT}

TYPE 5: [Coachella Music and Arts Festival]_{ENT} → Communicates-through → [ORG music festival's official Twitter account]_{ORG}

TYPE 3: [Knowles]_{PER} → Involved-in → [When I Get Home]_{ALB}

TYPE 2: [Knowles]_{PER} → Family → [Beyoncé]_{PER}

TYPE 1: [Ariana Grande]_{PER} → Entertainer → [festival]_{ENT}

TYPE 1: [Childish Gambino]_{PER} → Entertainer → [festival]_{ENT}

TYPE 1: [Tame Impala]_{PER} → Entertainer → [festival]_{ENT}

TYPE 4: [Coachella]_{ENT} → Happens-in → [Indio]_{LOC}

TYPE 4: [Coachella]_{ENT} → Happens-in → [California]_{LOC}

f/

1) Provide examples of five classes of feature you would use to discover the five types of relations you have identified manually.

a) POSTag, b) POSChunk, c) ShortShape, d) IsPERGazetteer, e) IsLOC Gazetteer.

2) Select one of your relations and show the feature values that you extract from the text from Problem 2.a

Select POSTag

Solange_NNP Knowles_NNP will_MD not_RB be_VB performing_VBG at_IN this_DT year_NN 's_POS Coachella_NNP Music_NNP and_CC Arts_NNP Festival_NNP after_IN all_DT ._. The_DT music_NN festival_NN 's_POS official_JJ Twitter_NNP account_NN announced_VBD the_DT news_NN Sunday_NNP night_NN ._. Knowles_NNP released_VBD her_PRP\$ new_JJ album_NN ,_ " " When_WRB I_PRP Get_VBP Home_NNP ,_ " " last_JJ month_NN ._. An_DT accomplished_JJ singer_NN ,_ songwriter_NN ,_ dancer_NN ,_ DJ_NNP and_CC style_NN guru_NN ,_ Knowles_NNP graced_VBD the_DT Coachella_NNP stage_NN last_JJ year_NN when_WRB she_PRP joined_VBD her_PRP\$ big_JJ sister_NN ,_ Beyoncé_NNP ,_ during_IN her_PRP\$ historic_JJ ,_ headlining_VBG tour_NN ._. Ariana_NNP Grande_NNP ,_ Childish_NNP Gambino_NNP ,_ and_CC Tame_NNP Impala_NNP are_VBP headlining_VBG the_DT festival_NN this_DT year_NN ._. Coachella_NNP takes_VBZ place_NN annually_RB over_IN two_CD weekends_NNS in_IN April_NNP in_IN Indio_NNP ,_ California_NNP ._.

3) For 2 of the five feature you selected. Discuss the classifier you would use for recognizing automatically these relations.

I would use classifier CRF for IsPERGazetteer and IsLOC Gazetteer which are last 2 of the 5 I selected.