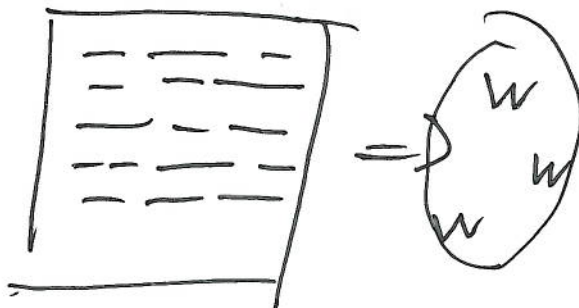


Classification

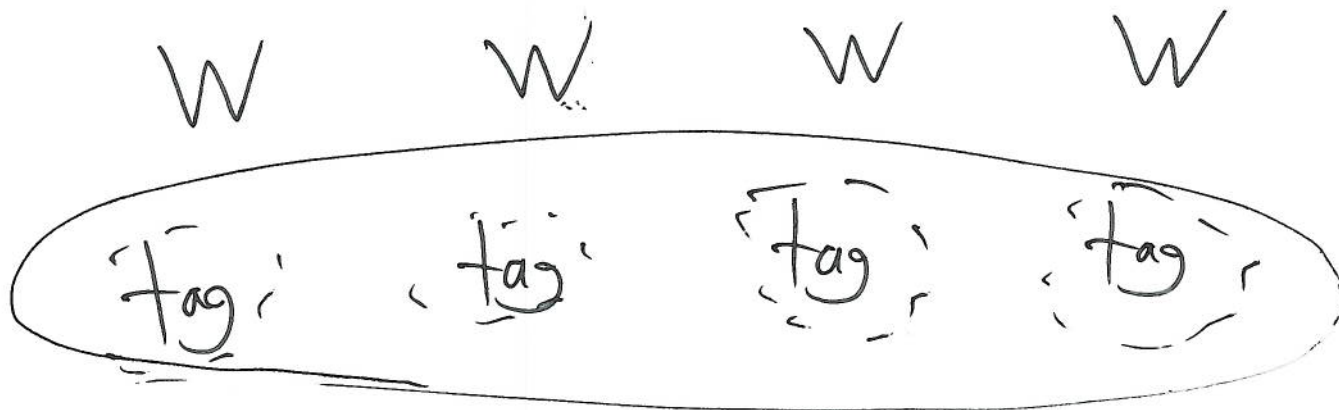
BOW repr
- NB
- Log Reg



Sequence Repr & Tagging

HMM

w w w w
tag tag tag tag



PART 1 — Tagging: Tag these two sentences, using the PTB tagset below. Don't bother with punctuation, but tag all other tokens.

WASHINGTON -- Pope Francis, the spiritual leader of 1.2 billion Catholics, challenged Congress and by extension the mightiest nation in history on Thursday to break out of its cycle of polarization and paralysis to finally use its power to heal the "open wounds" of a planet torn by hatred, greed, poverty and pollution.

Handwritten notes: NNP NNP, CD CD, Context!



Juliana Hausser @Jul_hausser · Sep 14

Thought we had off for the pope visit, idk wtf I'm doing

Tag	Description	Example	Tag	Description	Example
CC	coordin. conjunction	and, but, or	SYM	symbol	+, %, &
CD	cardinal number	one, two	TO	"to"	to
DT	determiner	a, the	UH	interjection	ah, oops
EX	existential 'there'	there	VB	verb base form	eat
FW	foreign word	mea culpa	VBD	verb past tense	ate
IN	preposition/sub-conj	of, in, by	VBG	verb gerund	eating
JJ	adjective	yellow	VBN	verb past participle	eaten
JJR	adj., comparative	bigger	VBP	verb non-3sg pres	eat
JJS	adj., superlative	wildest	VBZ	verb 3sg pres	eats
LS	list item marker	1, 2, One	WDT	wh-determiner	which, that
MD	modal	can, should	WP	wh-pronoun	what, who
NN	noun, sing. or mass	llama	WP\$	possessive wh-	whose
NNS	noun, plural	llamas	WRB	wh-adverb	how, where
NNP	proper noun, sing.	IBM	\$	dollar sign	\$
NNPS	proper noun, plural	Carolinas	#	pound sign	#
PDT	predeterminer	all, both	"	left quote	' or "
POS	possessive ending	's	"	right quote	' or "
PRP	personal pronoun	I, you, he	(left parenthesis	[, (, {, <
PRP\$	possessive pronoun	your, one's)	right parenthesis],), }, >
RB	adverb	quickly, never	,	comma	,
RBR	adverb, comparative	faster	.	sentence-final punc	. ! ?
RBS	adverb, superlative	fastest	:	mid-sentence punc	: ; ... --
RP	particle	up, off			

Figure 9.1 Penn Treebank part-of-speech tags (including punctuation).

PART 2 — Phrase extraction: In the text, bracket all instances of noun phrases, of length 2 or higher, that are identified by one of the Justeson&Katz patterns. Recall that they are defined over coarse tags (Adj, Noun, Prep.) as follows. (Noun does not include pronouns, but does include both common and proper nouns.)

Adj* Noun+ (including: AN, NN, NNN, ANN, AAN, etc.)
 Adj* Noun+ Prep Adj* Noun+ (including: NPN ANPN ANPAN etc.)

I ate hotdog

V N

V A* N

Regular Expression Notation

$(X)^*$: X for ≥ 0 times

$(X)^+$: X for ≥ 1 times

A* N+

\Rightarrow N NN NNNNNN

AN ANN AAAAAAN . . .

⑥ I saw the happy

Adj Noun

happy $\xrightarrow{\text{mod}}$ cat

Noun Adj

cat happy

dog of

On time

Prep Noun

With Alex

55 old man

Det Some man