

2_Intent_parsing

February 12, 2021

1 INTENT PARSING

- **Purpose :**
 - Test intent parsing with ALLENLP
- TABLE OF CONTENT
- SETUP
 - paths
- PARAMETERS
- PARSING
 - Allennlp VP parsing
 - Parsing performance
 - Focus on the class well parsed
- ANNOTATION

2 SETUP

2.1 paths

3 PARAMETERS

	text	category
0	I am still waiting on my card?	card_arrival
1	What can I do if my card still hasn't arrived after 2 weeks?	card_arrival
2	I have been waiting over a week. Is the card still coming?	card_arrival
3	Can I track my card while it is in the process of delivery?	card_arrival
4	How do I know if I will get my card, or if it is lost?	card_arrival

4 PARSING

4.1 ALLENLP VP PARSING

(Instantiation) took 30.8 secs

(Inference) took 0.3 secs Parsed sample: (S (NP (PRP I)) (VP (VBP am) (ADVP (RB still)) (VP (VBG waiting) (PP (IN on) (NP (PRP\$ my) (NN card)))))) (. ?))

Time to completion: 79.28 Time to completion: 60.47 Time to completion: 51.51 Time to completion: 51.73 Time to completion: 47.52 Time to completion: 46.61 Time to completion: 49.31 Time to completion: 46.95 Time to completion: 49.87 Time to completion: 48.46 Time to completion: 46.92 38.02

0	text \		I am
1	still waiting on my card?	What can I do if my card still hasn't	
2	arrived after 2 weeks?	I have been waiting over a week. Is	
3	the card still coming?	Can I track my card while it is in	
4	the process of delivery?	How do I know if I will get my	
5	card, or if it is lost?	When did	
6	you send me my new card?	Do you have info	
7	about the card on delivery?	What do I do if I still have	
8	not received my new card?	Does the package with	
9	my card have tracking?	I ordered my card	
10	but it still isn't here	Why has my	
11	new card still not come?	I still haven't received my card after	
12	two weeks, is it lost?	Can	
13	you track my card for me?	Is there a way to track	
14	the delivery of my card?	It's been a week since I ordered my card and it's	
15	not here. Please help?	Will I be able to track the	
16	card that was sent to me?	I don't have my card in 1	
17	week. Should I be worried?	How do I know when my new	
18	card is going to arrive?	My new card has not been delivered to my home	
19	yet. What is going on?	It's been a week since you issued me a card and I still didn't get it.	
20	Should I keep waiting?	On the card that is coming,	
21	what's the tracking info?	What is the status	
22	of my card's delivery?	Have	
23	you sent out my card yet?		
24	My card isn't here yet.		
25	where is my new card?	It's been a week since you sent my card and	
26	I still don't have it.	How do I	
27	track the card you sent me?	When will	
28	I recieve my new card?	When	

will I get my new card?
29
delivery date for my card?
30
for the card you sent me?
31
the card you sent to me.
32
been lost in delivery?
33
new card hasn't came in.
34
I ordered 2 weeks ago?
35
on my replacement card?
36
for a new card to ship?
37
tracking on the card you sent?
38
am worried it is lost.
39
still hasn't been delivered
40
card is that I ordered.
41
that was to be mailed?
42
hasn't been delivered yet
43
that was just sent to me?
44
haven't received my new card?
45
waiting for my new card.
46
for it to be delivered.
47
my card to be delivered?
48
card will be delivered?
49
status of my new card?
50
me, how do I track it?
51
get my card expedited?
52
track the card you sent me?
53
hasnt my card come in yet?
54
delivery of the card you sent?
55
my new card hasn't come?
56
me to get my new card?
57

What is the expected
Is there a tracking number
I would like to track
Has my card
My
Where is the card
Can I get an update
How long does it take
What's the
I haven't received my card and
My card
I need to find out where the
Where is my credit card
I ordered my card but it
Am I able to track the card
Can you tell me why I
I'm still
Is my card lost? I am still waiting
Should I keep waiting for
Can I track when my
How can I check on the
A card has been sent to
Is there a way I can
What can I do to
why
How can I periodically check the
What's the reason
How long does it take for
I don't have my card after 1 week.

What are my next steps?
 58 I know I'm getting a new card but would like know when I
 can expect to receive it.
 59 I want to find out what
 happened to my new card?
 60 Was there a way for me to
 get tracking for that?
 61 I am
 still waiting for my card.
 62
 My card hasn't arrived.
 63 Can I track
 the card you sent to me?
 64 I
 haven't gotten my new card.
 65 How long should it take for my new card to arrive in them mail? What should
 I do if I never rece...
 66 Will I have to wait much longer for
 my new card to arrive?
 67 how to
 track the card you sent
 68 2 weeks ago I ordered my new card. It isn't
 here. What should I do?
 69 How can I check on the
 delivery status of my card?
 70 My card has not been delivered yet and its been a week since I
 ordered it, please help
 71 What's the expected wait time
 to recieve my new card?
 72 How can I see the progress of delivery of
 the card that was sent?
 73 My card was supposed
 to arrive, but hasn't?
 74 I ordered a card and would like to know how to track the
 delivery progress of it.
 75 How long will it take
 for me to get my card?
 76 My
 card hasn't shown up yet.
 77 Does the card you sent
 have a tracking number?
 78 My card hasn't arrived in the mail yet. I ordered it two
 weeks ago. What can I do?
 79 maximum how
 many days get the courier?
 80 Is there a reason my new
 card hasn't arrived yet?
 81 I've been waiting a while for my card, is there a way to
 know when it will arrive?
 82 How can I
 track my card's delivery?
 83 Can I track the card
 that was just sent to me?
 84 If I ordered my new card last week, how much longer
 should I wait to receive it?
 85 What's go
 on, where is my new card?
 86 Where is my new card if I

haven't received it yet?
 87
 Where is my card?
 88
 received my new card yet?
 89
 a way to track my card?
 90
 the new card you sent me?
 91
 still waiting for my card.
 92
 requested 2 weeks ago?
 93
 SOLUTION OF THIS PROBLEM
 94
 get tracking on the card?
 95
 help me track my card?
 96
 new card be here by now?
 97
 new card hasn't arrived?
 98
 to me, how do I do that?
 99
 tracking number for the card?

Can you tell me why I haven't

Is there

Is there a way to track

I'm

What do I need to do to get my new card which I have

WHAT IS THE

Could I

Can you

Shouldn't my

Is there a reason my

I would like to track a card sent

Is there a

category \
 0 card_arrival
 1 card_arrival
 2 card_arrival
 3 card_arrival
 4 card_arrival
 5 card_arrival
 6 card_arrival
 7 card_arrival
 8 card_arrival
 9 card_arrival
 10 card_arrival
 11 card_arrival
 12 card_arrival
 13 card_arrival
 14 card_arrival
 15 card_arrival
 16 card_arrival
 17 card_arrival
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81 card_arrival
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84 card_arrival
85 card_arrival
86 card_arrival

87 card_arrival
 88 card_arrival
 89 card_arrival
 90 card_arrival
 91 card_arrival
 92 card_arrival
 93 card_arrival
 94 card_arrival
 95 card_arrival
 96 card_arrival
 97 card_arrival
 98 card_arrival
 99 card_arrival

VP

0 take for my new card to
 arrive in them mail
 1 check the delivery of
 the card you sent
 2 track when my card
 will be delivered
 3 tell me where my card is ? I
 ordered it 2 weeks ago
 4
 gets here
 5 have a tracking number for the
 card I was sent
 6 need to do to get my new card which I have
 requested 2 weeks ago
 7 been
 lost in delivery
 8 's been a week since you issued me a card and I still did n't get it .
 Should I keep waiting
 9
 send me my new card
 10
 come
 11 has
 n't been delivered
 12
 lost
 13
 is n't here
 14 have n't
 received it yet
 15 's the reason my new
 card has n't come
 16 ordered a card and would like to know how to track the
 delivery progress of it
 17
 has n't arrived
 18 want to find out what
 happened to my new card
 19 take for
 me to get my card
 20
 is n't here yet
 21

arrived yet
22
that was sent to me
23
get my new card
24
card you sent to me
25
arrival of my card
26
status of my new card
27
Should I be worried
28
n't arrived yet
29
What is going on
30
get this new card
31
ordered my card
32
arrive
33
ordered my card
34
gotten my new card
35
my new card yet
36
received my new card
37
was just sent
38
's go on
39
track my card for me
40
card you sent me
41
None
42
have never arrived
43
that I could get
44
tracking on the card
45
OF THIS PROBLEM
46
new card to ship
47
waiting on my card
48
card you sent to me
49
ordered 2 weeks ago
50

be able to track the card
going to take to
would like to track the
send me and up date on the
check on the
do n't have my card in 1 week .
has
has not been delivered to my home yet .
be to
's been a week since I
have n't
received
do if I still have not
do to track the
appears to
to track
get
IS THE SOLUTION
take for a
am still
track the
was supposed to receive my

new card by now

51

be here by now

52

replacement card

53

going to arrive

54

card you sent me

55

or if it is lost

56

arrived

57

the card you sent

58

received my card

59

date of my card

60

get the courier

61

the card you sent

62

to track the card

63

delivery of my card

64

n't gotten my card

65

are my next steps

66

in the mail yet

67

card in the mail

68

ordered my new card

69

recieve my new card

70

while for my card

71

card you sent me

72

gotten my new card

73

tracking number

74

sent me in the mail

75

issued a week ago

76

has n't came in

77

to me be tracked

78

weeks , is it lost

79

get an update on my

know when my new card is

track the

know if I will get my card ,

to track

have n't

is the expected delivery

's the tracking on

to track the

's been two weeks and I have

do n't have my card after 1 week . What

has n't came

have n't received my

take to

've been waiting a

to track the

share card

track the card that you

'm still waiting for my card that was

was sen

have n't received my card after two

has

n't shown up yet	
80	keep waiting for my card
to be delivered	
81	tell me if I can track the
card you sent me	
82	have to wait much longer for my
new card to arrive	
83	am still
waiting for my card	
84	is there a
way to track it	
85	
is my new card	
86	have n't gotten my credit
card in the mail	
87	
got my new card	
88	
track card you sent	
89	check on the delivery
status of my card	
90	have info about the
card on delivery	
91	'm still
waiting for my card	
92	track the card that was
just sent to me	
93	sent me 's
tracking number	
94	have not
received my card	
95	's been a week since
you sent my card	
96	has
n't arrived yet	
97	has
been sent to me	
98	was expecting my
new card by now	
99	do if my card still has n't
arrived after 2 weeks	

Write parsed data

4.2 PARSING PERFORMANCE

- Parser works in 62% of the cases for “card_arrival” and never for other classes
 - see 2a_eda_parsing.py
 - We will analyse why later.
 - We now focus on the class well parsed: “card_arrival”.

4.3 FOCUS ON THE CLASS WELL PARSED

```
moods = mood.classify_sentence_type(data["text"]) moods
```

4.3.1 ANNOTATE

1. Annotate VPs that look like intent vs. not
2. Look what make them different
3. Test a few hypothesis:
 - mood: declarative vs. interrogative syntax ?
 - tense: present vs. past ?
 - lexical: some verbs and not others
 - else ?
 - semantics: direct object vs. indirect ?

Write annots

WARNING: Annots was not written. To write, delete existing and rerun.

Fig. Queries are sorted by annotation result below.

```
      Unnamed: 0  \
78              78
40              40
22              22
23              23
25              25
77              77
73              73
70              70
43              43
86              86
64              64
47              47
48              48
49              49
54              54
55              55
82              82
56              56
89              89
16              16
97              97
14              14
91              91
7               7
90              90
92              92
94              94
65              65
93              93
63              63
62              62
85              85
95              95
96              96
61              61
60              60
59              59
58              58
98              98
66              66
69              69
```

67	67
68	68
84	84
71	71
72	72
74	74
75	75
76	76
57	57
79	79
80	80
88	88
81	81
87	87
83	83
0	0
50	50
53	53
12	12
24	24
21	21
20	20
19	19
18	18
17	17
15	15
13	13
11	11
52	52
10	10
9	9
8	8
6	6
5	5
4	4
3	3
2	2
26	26
27	27
28	28
29	29
51	51
1	1
46	46
45	45
44	44
42	42
41	41
39	39
38	38
37	37
36	36
35	35
34	34
33	33
32	32
31	31
30	30

99	99
100	100
101	101
102	102
103	103
104	104
105	105
106	106
107	107
108	108
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111	111
112	112
113	113
114	114
115	115
116	116
117	117
118	118
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120	120
121	121
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136	136
137	137
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145	145
146	146
147	147
148	148
149	149
150	150
151	151
152	152

78 text \

me track my card

help

40
is going to arrive
22
track my card for me
23
was just sent to me
25
or if it is lost
77
to track my card
73
get my new card
70
ordered it 2 weeks ago
43
happened to my new card
86
the card you sent
64
process of delivery
47
the card sent to me
48
was just sent to me
49
card you sent me
54
's tracking number
55
get my new card
82
card you sent to me
56
already been sent
89
arrival of my card
16
card 's delivery
97
card you sent to me
14
to track the card
91
be delivered
7
status of my card
90
the card you sent
92
card tracking number
94
have tracking
65
waiting on my card
93
worried it is lost
63
sent

know when my new card

to track the card that
know if I will get my card ,

tell me where my card is ? I
want to find out what

to track
track my card while it is in the
need to track
track the card that
to track the new
sent me

track the
to track a card that has
send me and up date on the
track my
would like to track the

check on the delivery
check the delivery of
share

am still
have n't received my card and am

62	
has been sent to me	
85	has not
come in the mail yet	
95	
received my new card yet	
96	take for me
to get my new card	
61	
come	
60	am still
waiting for my card	
59	has not
been delivered yet	
58	
sent out my card yet	
98	going to take
to get my new card	
66	is the expected
delivery date of my card	
69	'm still
waiting for my card	
67	
has n't arrived	
68	
ordered 2 weeks ago	
84	
is n't here	
71	can check on the
card on route to me	
72	
has n't came in	
74	tell me why I have n't
received my new card yet	
75	is the expected delivery
date for my card	
76	was sen
to me be tracked	
57	was supposed to receive
my new card by now	
79	is the status of my
card 's delivery	
80	
arrived	
88	do n't have my card in 1 week .
Should I be worried	
81	'm still waiting on my new
card to be delivered	
87	's been a week since you issued me a card and I still did n't get it .
Should I keep waiting	
83	
's go on	
0	'm still waiting for my card that was
issued a week ago	
50	
sent me	
53	have n't
gotten my new card	

12		take for my new card to
arrive in them mail		
24	ordered a card and would like to know how to track the	
delivery progress of it		
21		to get
tracking for that		
20		
arrive		
19	thought I would have received my new	
card at this point		
18		
ordered my card		
17		take for
me to get my card		
15		
arrived yet		
13		'm still
waiting for my new card		
11		
has n't arrived		
52		's the tracking on
the card you sent		
10		
has n't arrived yet		
9		keep waiting for my
card to be delivered		
8		
get the courier		
6		have n't received my
card in the mail		
5	have to wait much longer for my	
new card to arrive		
4		
be here by now		
3		's been a week since
you sent my card		
2		's been a week since
I ordered my card		
26		
gets here		
27		has
n't been delivered		
28		has n't
arrived in the mail yet		
29	have a tracking number for	
the card I was sent		
51		have n't
gotten my new card		
1	tell me why I have n't	
received my new card		
46	's been two weeks and I have	
n't gotten my card		
45		
have nt got my card		
44		
gotten my new card		
42		take for a
new card to ship		

41		have not
received my card		
39	need to find out where the card	
is that I ordered		
38		take to
recieve my new card		
37		been
lost in delivery		
36		ordered my
new card last week		
35	has not been delivered to my home yet .	
What is going on		
34	do n't have my card after 1 week . What	
are my next steps		
33		
is n't here yet		
32	do if my card still has n't	
arrived after 2 weeks		
31		is there
a way to track it		
30		
is my new card		
99	have n't received my card after two	
weeks , is it lost		
100		
NaN		
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78	yes
40	yes
22	yes
23	yes
25	yes
77	yes
73	yes
70	yes
43	yes
86	yes
64	yes
47	yes
48	yes
49	yes
54	yes
55	yes
82	yes
56	yes
89	yes
16	yes
97	yes
14	yes
91	yes
7	yes
90	yes
92	yes
94	no
65	no
93	no
63	no
62	no
85	no
95	no
96	no
61	no
60	no
59	no
58	no
98	no
66	no
69	no
67	no

68	no
84	no
71	no
72	no
74	no
75	no
76	no
57	no
79	no
80	no
88	no
81	no
87	no
83	no
0	no
50	no
53	no
12	no
24	no
21	no
20	no
19	no
18	no
17	no
15	no
13	no
11	no
52	no
10	no
9	no
8	no
6	no
5	no
4	no
3	no
2	no
26	no
27	no
28	no
29	no
51	no
1	no
46	no
45	no
44	no
42	no
41	no
39	no
38	no
37	no
36	no
35	no
34	no
33	no
32	no
31	no
30	no
99	no

100	NaN
101	NaN
102	NaN
103	NaN
104	NaN
105	NaN
106	NaN
107	NaN
108	NaN
109	NaN
110	NaN
111	NaN
112	NaN
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138	NaN
139	NaN
140	NaN
141	NaN
142	NaN
143	NaN
144	NaN
145	NaN
146	NaN
147	NaN
148	NaN
149	NaN
150	NaN
151	NaN
152	NaN

Fig. Proportion of “Good” intents.

	annot	count	%
0	null	26	0.169935

1	yes	74	0.483660
2	no	53	0.346405
3	Total	153	1.000000

	annot	count	%
0	null	53	34.640523
1	yes	26	16.993464
2	no	74	48.366013
3	Total	153	100.000000