○ Single

○ Taken

◉ I drink a lot

Figurative language

Irony

A man was filing for divorce.
Q: "**Occupation**"?
A: "**Marriage Counselor**"

Metaphor

#AdolfHitler is the **#EricCartman** of **#WorldWarII**: racist and prejudiced, yet strategic too.

Sarcasm

You know you love your work when you go there on your day off ..

@onlinesarcasm

"It's freezing and snowing in New York – we need global warming!"

"It's freezing and snowing in New York – we need global warming!" - Donald Trump

"It's freezing and snowing in New York – we need global warming!" - Donald Trump

@realDonaldTrump You made us proud!!!

Textual

Finally a President with excellent integrity and loyalty. I have so much respect for you and the job you are doing. Proud!

Timely

@realDonaldTrump Finally a President with excellent integrity and loyalty. I have so much respect for you and the job you are doing. Proud!

Contextual

My lawyers want to sue the failing @nytimes so badly for irresponsible intent. I said no (for now), but they are watching. Really disgusting

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Psychological dimensions

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Sensory@@21 Plugged_In@@75 Depressed@@11 Angry@@90
Spacy/Valley_girl@@75 Worried@@77 Arrogant/Distant@@92
Analytic@@42 In-the-moment@@80 Upbeat@@10 Personable@@92

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Magnets for Sarcasm

Making Sarcasm Detection Timely, Contextual, and
Very Personal
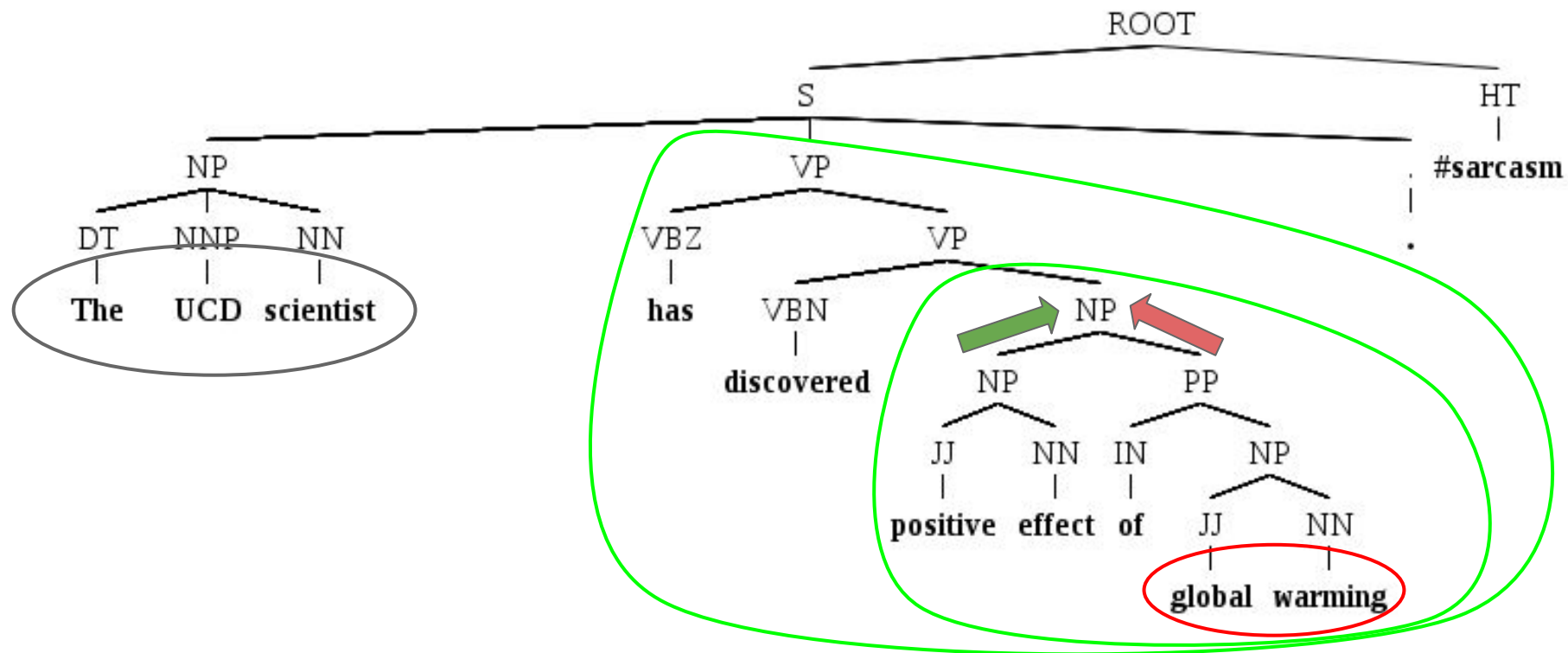
Bad Language

- Feeling great right now #not
- i love it when people try 2 hurt my feelings bc i don't hve any lol..
- i love rting arguments

If I ever need a brain transplant, I'd choose yours because I'd want a brain that had never been used.

If I ever need a brain transplant, I'd choose yours because I'd want a brain that had never been used.

Doctor's appointments all day, how exciting 😏 #not

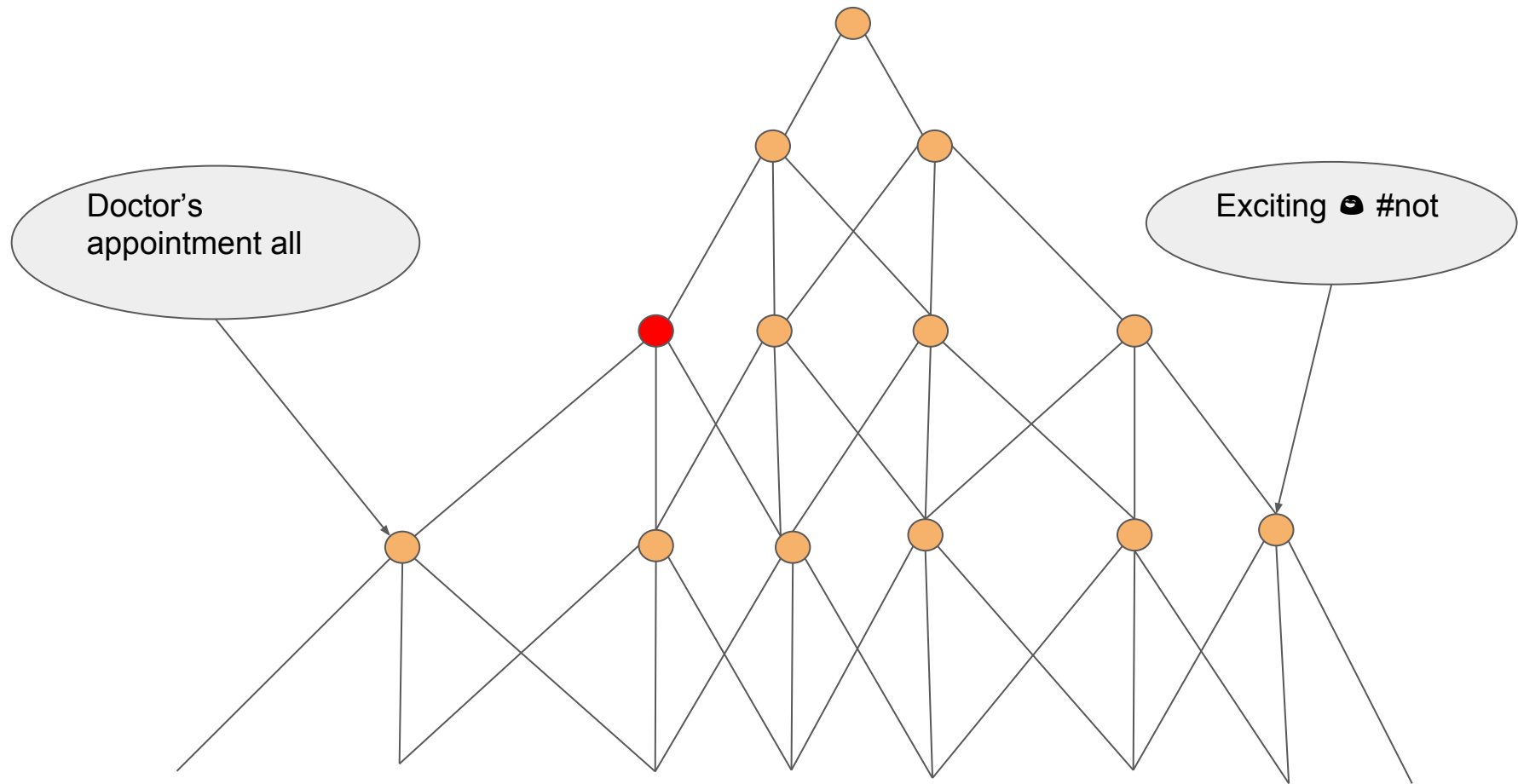Doctor's appointments all day, how exciting 😊 #not

Doctor's appointments all day, how exciting 😄 #not

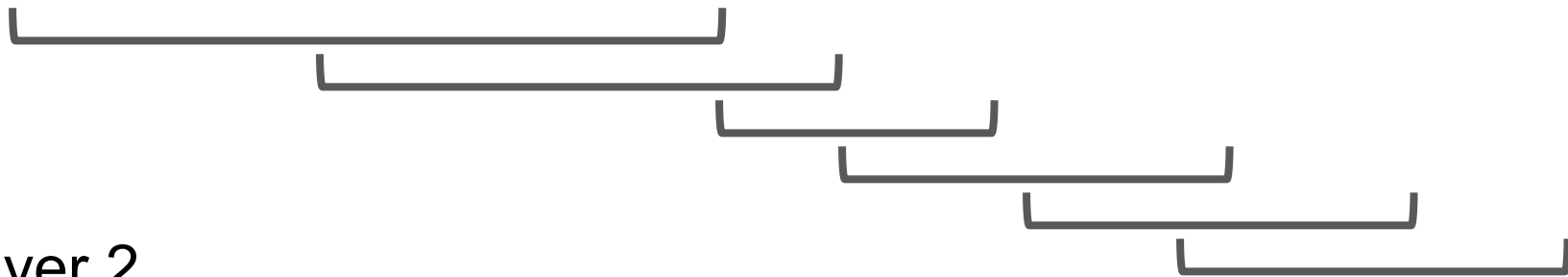| Precision	Recall	F-score
.869	.89	.879

Doctor's appointments all day, how exciting 😄 #not

Doctor's appointment all

Exciting 😎 #not

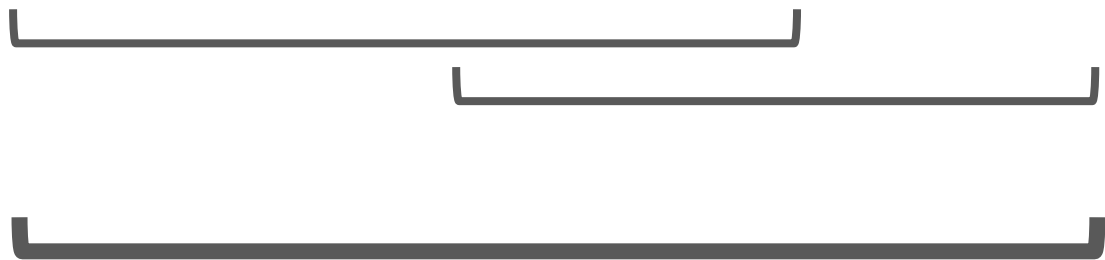Doctor's appointments all day, how exciting 😎 #not

Layer 1

Doctor's appointments all day, how exciting 😄 #not

Layer 2
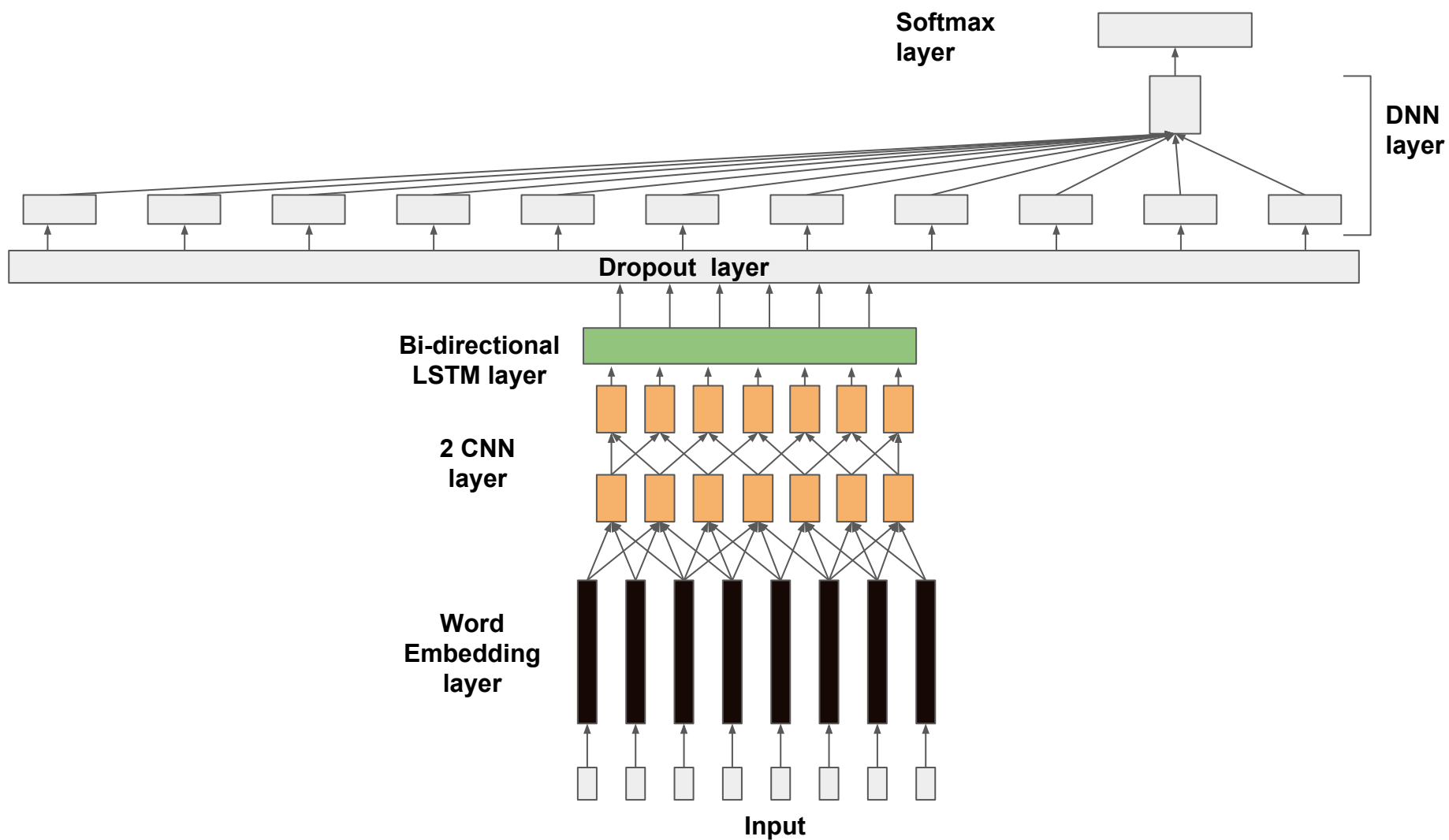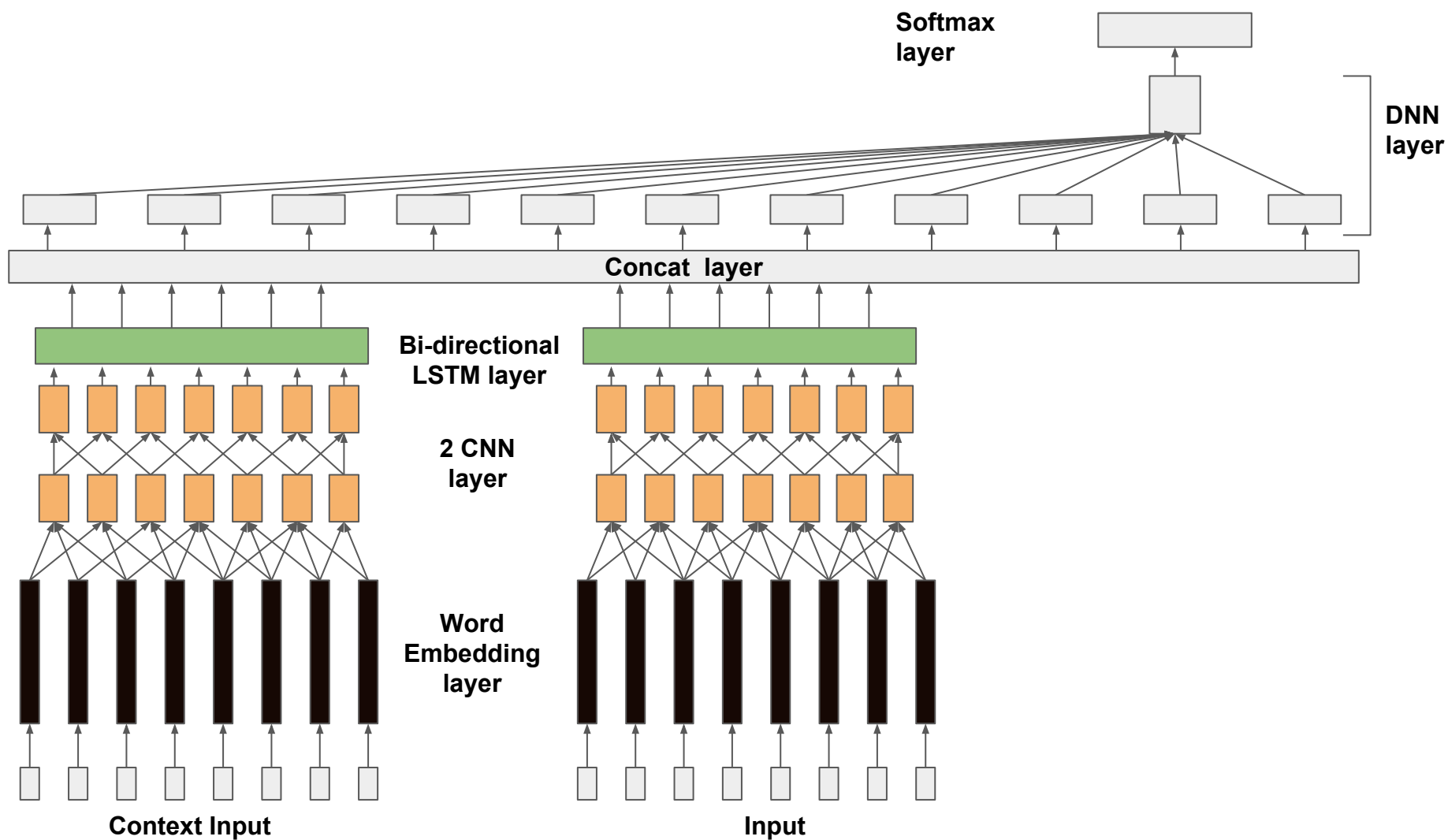
Doctor's appointments all day, how exciting 😄 #not

Softmax layer

DNN layer

2 layer LSTM

Dropout layer

2 layer CNN

Word embedding layer

Input layer
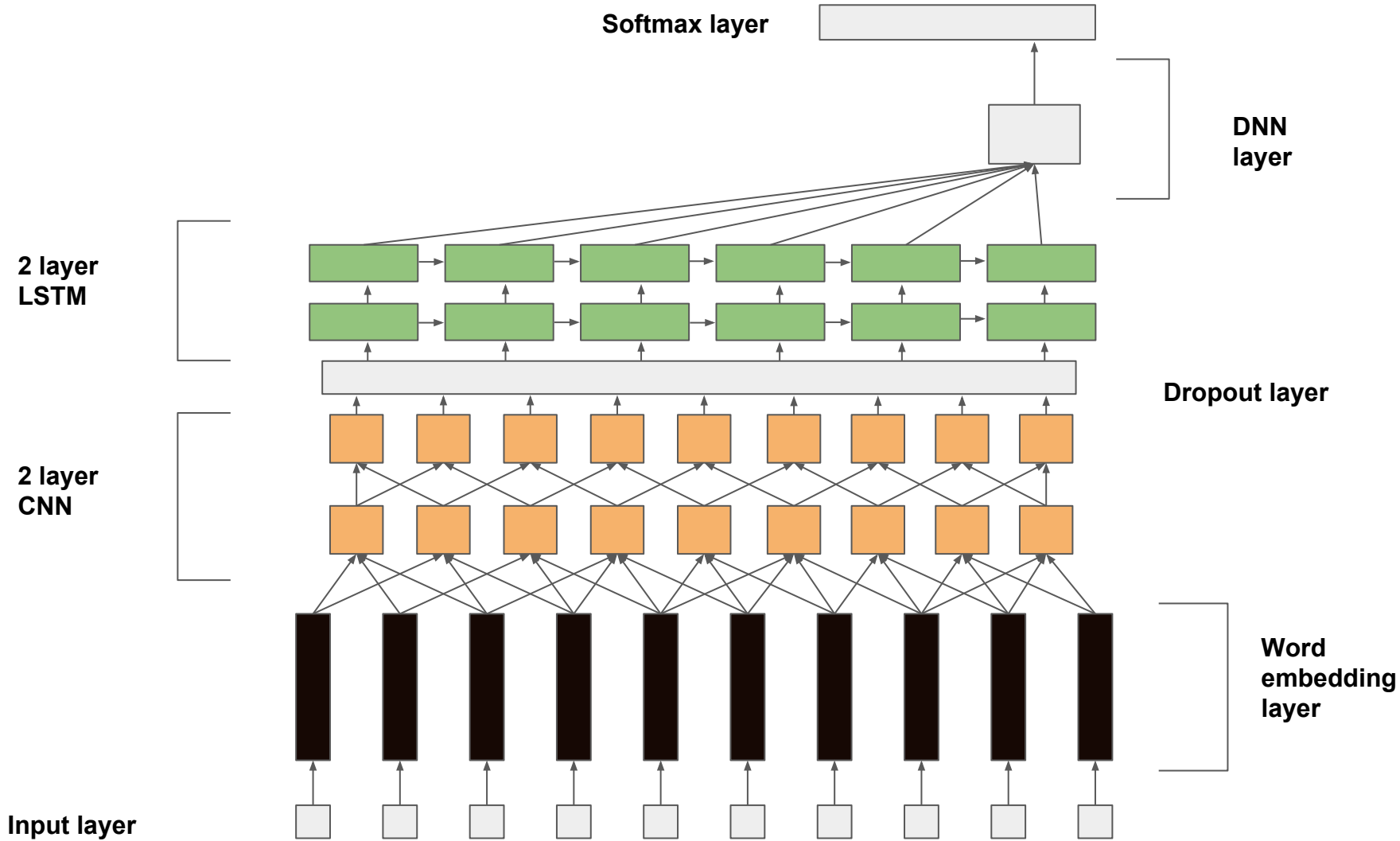
Model	Feature/Hyper parameter	Precision	Recall	F-score
recursive SVM	BOW + POS	.719	.613	.663
recursive SVM	BOW + POS + Sentiment	.722	.661	.691
recursive SVM	BOW + POS + Sentiment + HT-splitter	.743	.721	.732
CNN + CNN	filter size = 64 + filter width = 2	.838	.857	.847
	filter size = 128 + filter width = 2	.842	.86	.854
	filter size = 256 + filter width = 2	.855	.879	.868
	filter size = 64 + filter width = 3	.839	.854	.847
	filter size = 128 + filter width = 3	.856	.879	.868
	filter size = 256 + filter width = 3	.861	.882	.872
LSTM + LSTM	hidden memory unit = 64	.849	.816	.832
	hidden memory unit = 128	.854	.871	.862
	hidden memory unit = 256	.868	.89	.879
CNN + LSTM + DNN (with dropout)	filter size = 256 + filter width = 2 + HMU = 256	.899	.91	.904
CNN + LSTM + DNN (without dropout)	filter size = 256 + filter width = 2 + HMU = 256	.912	.911	.912
CNN + LSTM + DNN (without dropout)	filter size = 256 + filter width = 3 + HMU = 256	.919	.923	.921

Fracking Sarcasm using Neural network

How to Integrate into my old neural network?

Softmax
layer

DNN
layer

Dropout layer

Bi-directional
LSTM layer

2 CNN
layer

Word
Embedding
layer

Input

Softmax
layer

DNN
layer

Concat layer

Bi-directional
LSTM layer

2 CNN
layer

Word
Embedding
layer

Context Input

Input

Softmax layer

DNN layer

Concat layer

Bi-directional LSTM layer

2 CNN layer

Embedding layer

Word Embedding layer

AnalyzeWords Input layer

Context Input

Input

Datasets

- Bamman sarcasm data
- Ptacek sarcasm data (balanced and unbalanced)
- Sarcasm detector
- Rajadesingan data

Psychological dimensions are reverse-engineered from text using Linguistic Inquiry and Word Count (LIWC).

Dataset		Alternate Configurations of the *Sarcasm Magnet** model						
		TTEA	TTIA	TTEA + CT	TTIA + CT	TTEA + PD	TTIA + PD	TTIA + CT + PD
		CNN1 + LSTM1 + DNN	CNN1 + LSTM1 + DNN	CNN1 + CNN2 + LSTM1 + LSTM2 + CL + DNN	CNN1 + CNN2 + LSTM1 + LSTM2 + CL + DNN	CNN1 + LSTM1 + EAW + CL + DNN	CNN1 + LSTM1 + EAW + CL + DNN	CNN1 + CNN2 + LSTM1 + LSTM2 + EAW + CL + DNN
(Ptáček et al., 2014) (balanced dataset)	P	0.821	0.832	0.908	0.92	0.857	0.86	0.947
	R	0.821	0.832	0.908	0.92	0.857	0.86	0.947
	F1	0.821	0.832	0.908	0.92	0.857	0.86	**0.9472** (0.9466)
(Ptáček et al., 2014) (unbalanced dataset)	P	0.814	0.813	0.926	0.937	0.851	0.843	0.946
	R	0.832	0.833	0.93	0.93	0.833	0.838	0.933
	F1	0.823	0.823	0.928	0.933	0.842	0.84	**0.94** (0.924)
(Bamman and Smith, 2015)	P	0.896	0.90	0.886	0.919	0.825	0.835	**0.9** (0.857)
	R	0.651	0.672	0.819	0.817	0.803	0.827	0.858 (**0.872**)
	F1	0.754	0.77	0.851	0.865	0.814	0.831	**0.878** (0.864)
(Cliche, 2014)	P	0.788	0.8	0.874	0.893	0.884	0.883	0.896
	R	0.751	0.769	0.842	0.843	0.812	0.817	0.862
	F1	0.769	0.784	0.858	0.867	0.846	0.849	**0.879** (0.6)
(Rajadesingan et al., 2015)	P	0.957	0.957	0.957	0.957	0.958	0.958	0.956
	R	0.807	0.807	0.807	0.807	0.861	0.861	0.905
	F1	0.875	0.875	0.875	0.875	0.907	0.907	**0.93** (0.903)
Sarcasm Magnet* (this paper)	P	0.733	0.731	0.84	0.841	0.816	0.82	0.869
	R	0.717	0.732	0.803	0.812	0.801	0.805	0.839
	F1	0.725	0.732	0.821	0.826	0.808	0.813	0.854

Magnets for Sarcasm: Making Sarcasm Detection Timely, Contextual and Very Personal. Aniruddha Ghosh and Tony Veale. Empirical Methods on Natural Language Processing (EMNLP 2017) (Accepted)