

“It’s freezing and snowing in New York – we need global warming!” - Donald Trump

“Don’t bring him to Dublin” - Me

☐ Single

☐ Taken

☒ I drink a lot

# Figurative language

# Metaphor

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

# Irony

A man was filing for divorce. Q: “**Occupation**”?

A: “**Marriage Counselor**”

# Sarcasm

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

# Fracking Sarcasm using Neural network

Really???



Really???

“I am not doing Sarcasm  
now!!!”

How???

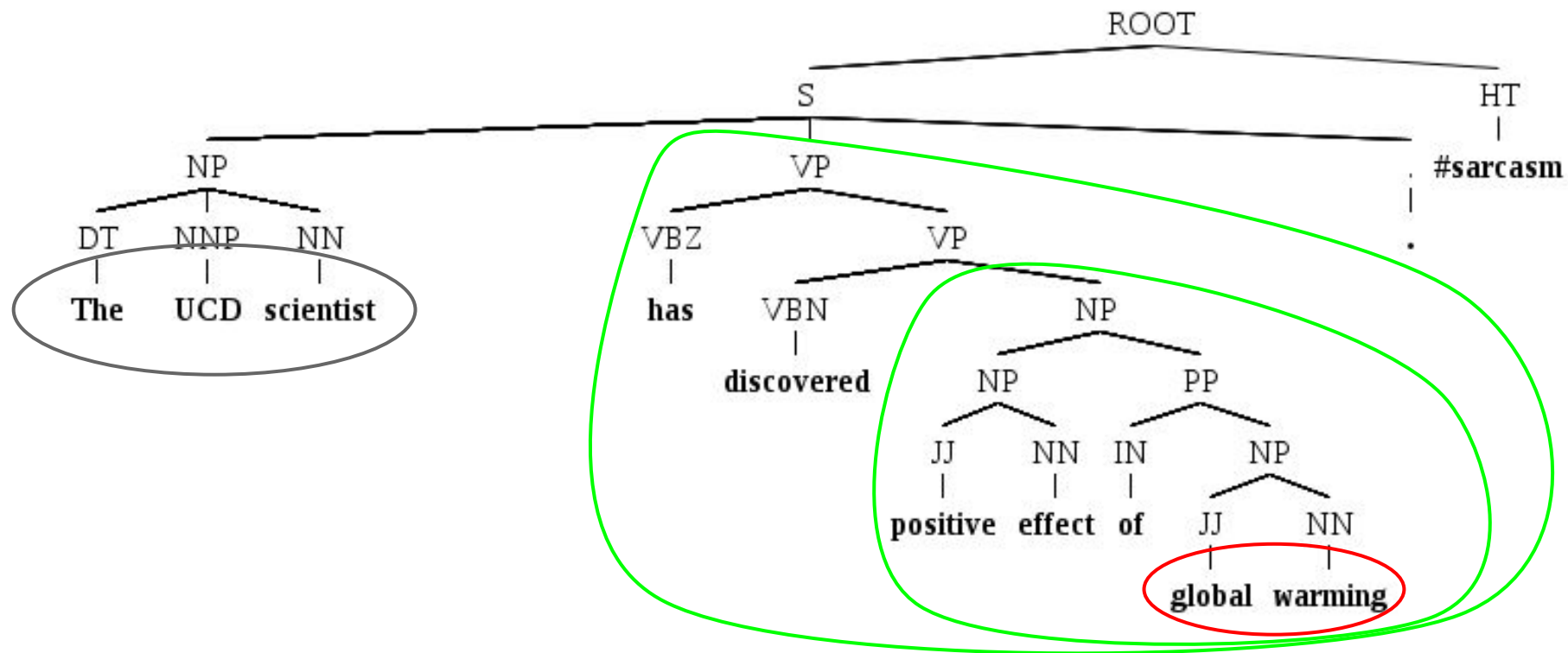
If I ever need a brain transplant, I'd choose yours  
because I'd want a brain that had never been used.

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

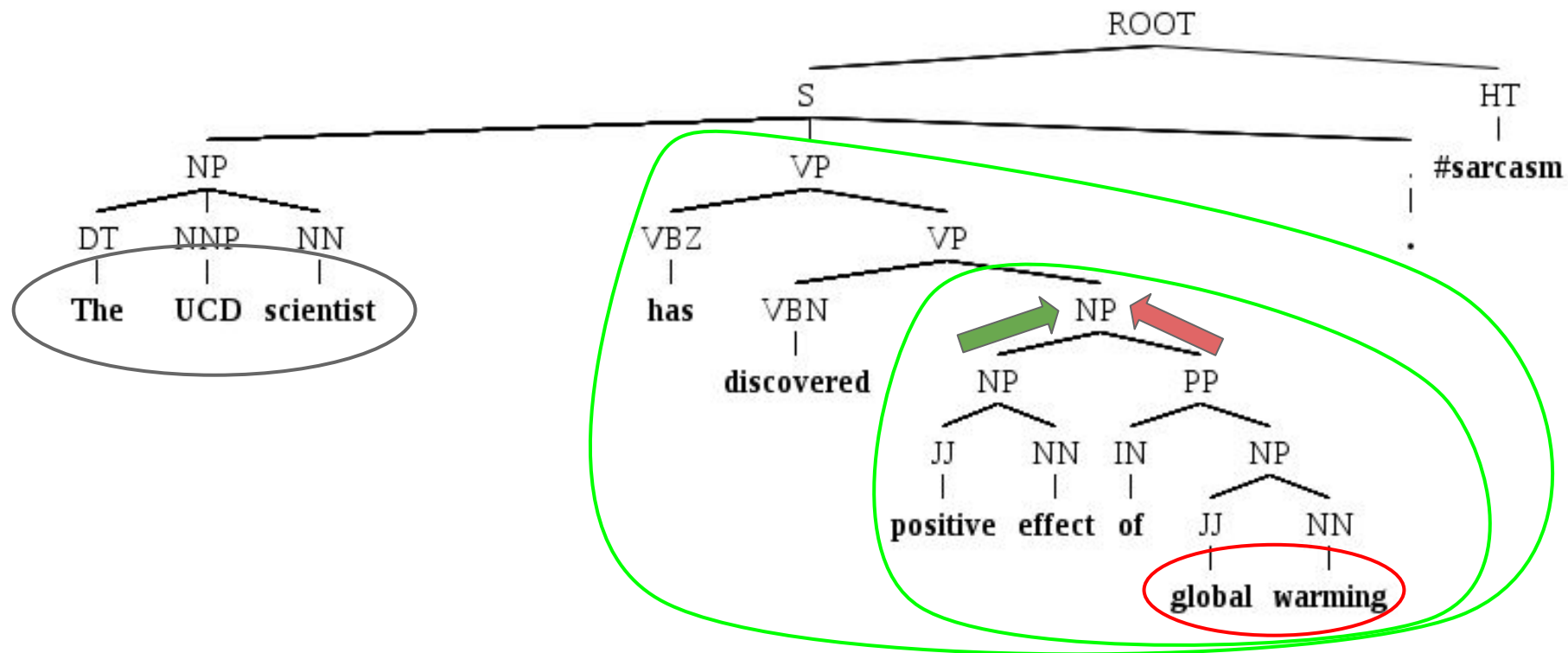
Doctor's appointments all day, how exciting 🤪 #not

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

- Riloff et al.(2013)
  - juxtaposition of positive sentiment contrasted with a negative situation or vice versa
- Gonzalez-Ibanez et al.(2011)
  - lexical and pragmatic factors such as emoticons and referred profile in social media
- Tsur et al.(2010)
  - Surface features about a product, frequent words, and punctuation marks







# 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



How???

Necessity is the mother of  
invention...

Frustration

~~Necessity~~ is the mother of  
invention...

# Deep Learning Winter School

(DL4MT)

Thanks to EAMT, ADAPT, EXPERT,  
ICHEC  
&  
CNGL

blessed are the forgetful

*eternal sunshine of the spotless mind*



Selective memory is surely one of nature's most effective ways of ensuring the survival of our species.~ Nigel Hamilton



# Long Short Term Memory

Sepp Hochreiter and Jürgen Schmidhuber

**How did you reach here?**



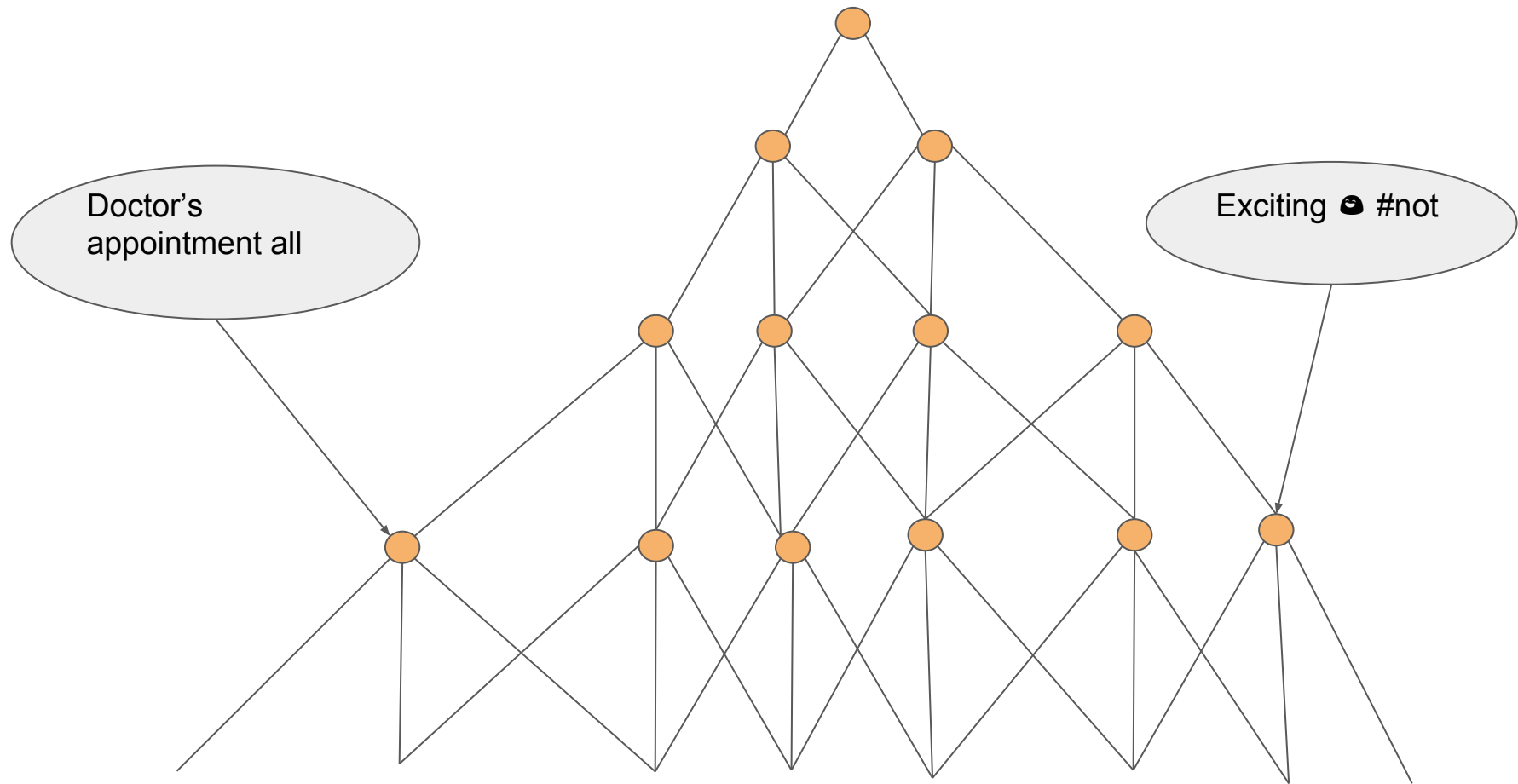
Doctor's appointments all day, how exciting 😊 #not

Precision	Recall	F-score
.869	.89	.879



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

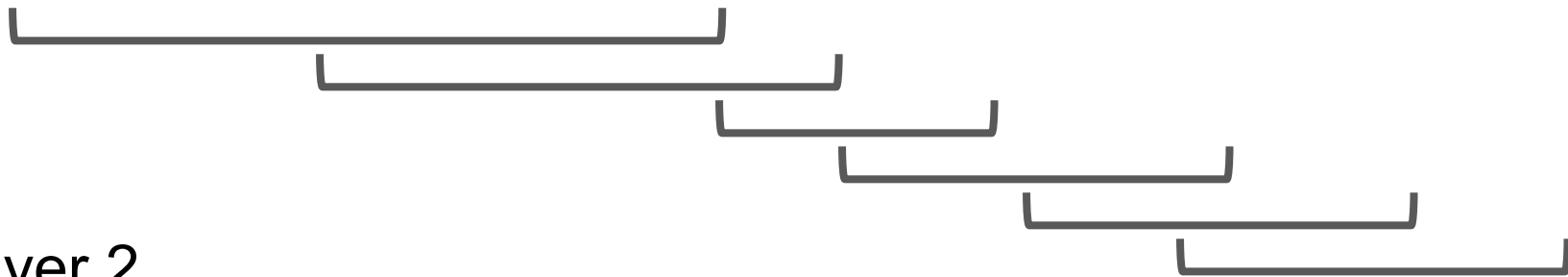
# Convolutional Neural Network



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

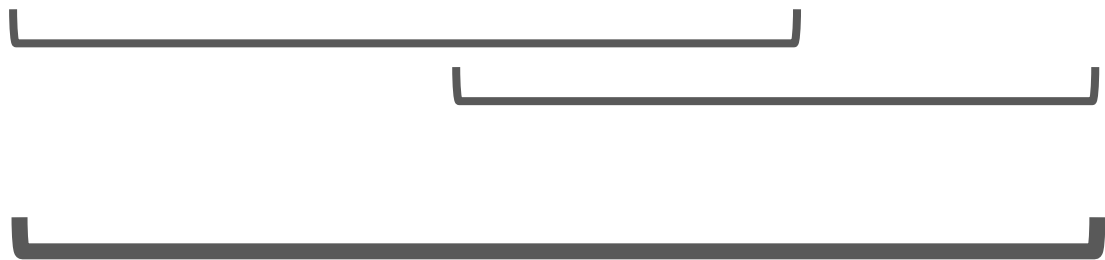
## Layer 1

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



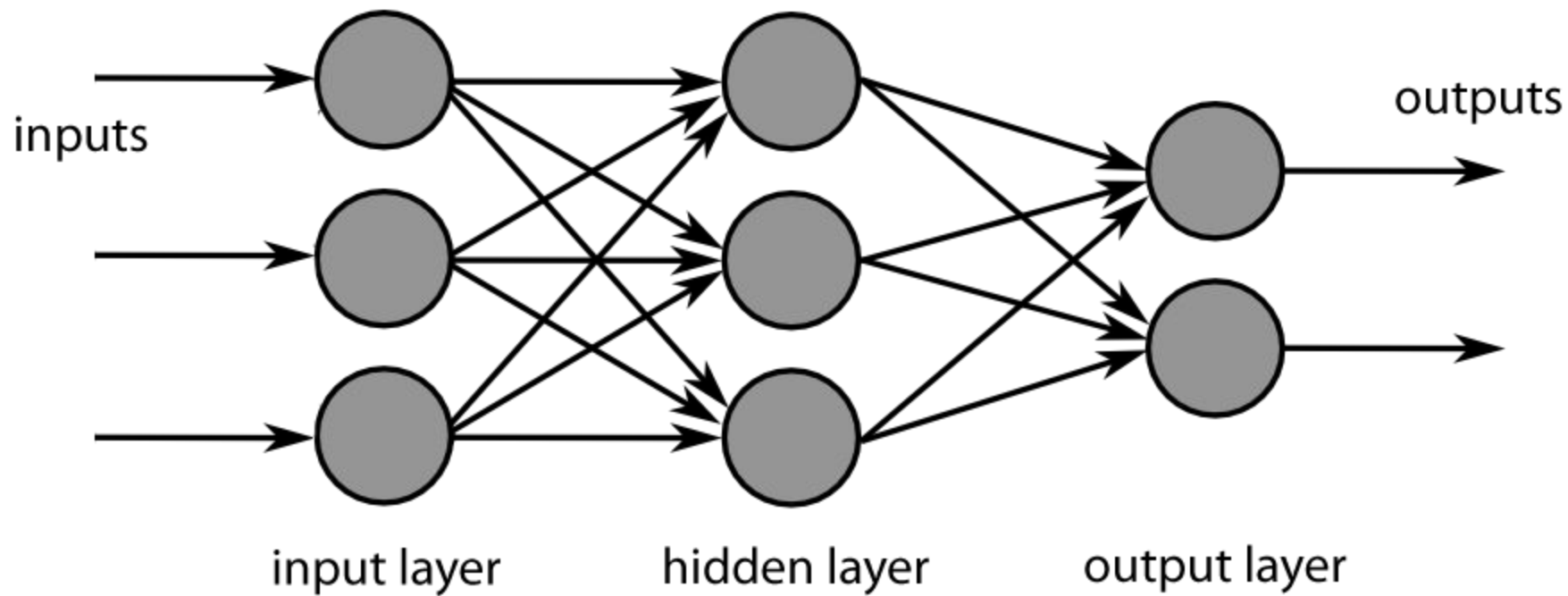
## Layer 2

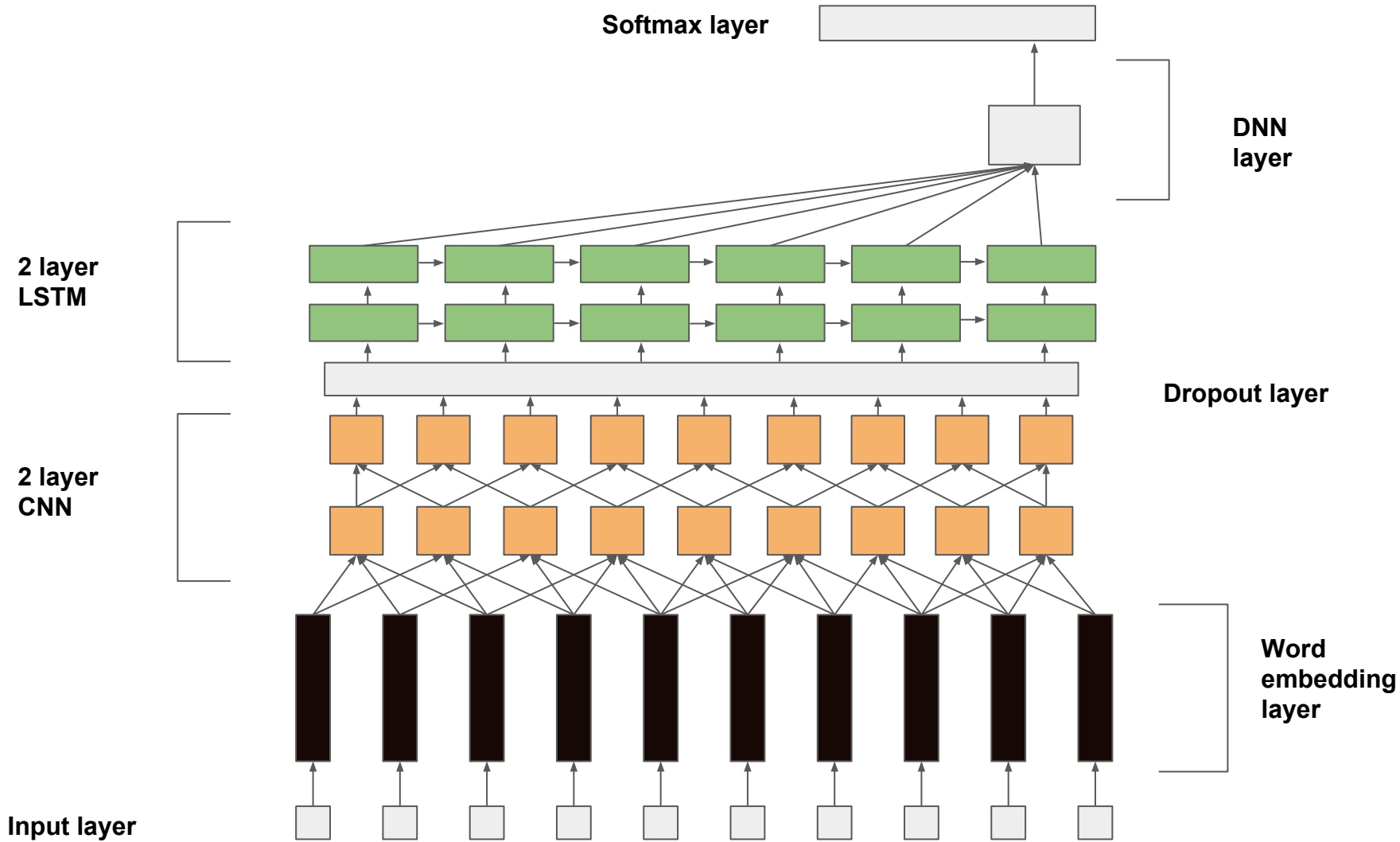
Doctor's appointments all day, how exciting 🤗  
#not





# **Deep Neural Network Layer**





# Dropping of dropout

I don't know about you **man** but I love the history homework.

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

# COSMIC FRANKENSTEIN TERRORIZES EARTH!



Already one whole city has been devoured...and still it grows, minute by minute, reaching out with countless invisible mouths to swallow the earth!



## THE MAGNETIC MONSTER

The astounding story of the "thing" that came alive!



IVAN TORS presents  
**"THE MAGNETIC MONSTER"** starring **RICHARD CARLSON**  
Featuring: King Donovan • Jean Byron • Janna Lewis • Screenplay by  
Curt Siodmak and Ivan Tors • Produced by IVAN TORS • Directed by  
CURT SIODMARK • An A-Mex Production • Released thru United Artists

## Number of layers and Hidden units

**Source:** Karpathy Char-rnn github

- Training loss  $\ll$  validation loss  $\Rightarrow$  **Overfitting**. Decrease network size/ to increase dropout.
- Training loss  $\approx$  validation loss  $\Rightarrow$  **Underfitting**. Increase the size of your model (number of layers/raw number of neurons per layer)

# Bidirectional LSTM

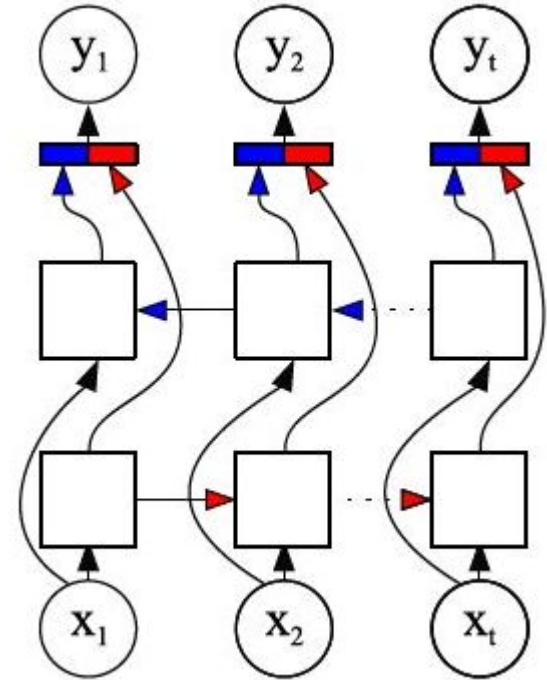
No improvement has been noticed.

Experiment to follow :

Sarcasm in Conversational environment.

**Man:** I want to sell my Encyclopedia and Britannica collections.

**Seller:** Wow. You just got married. Congratulation!!





# Why not Word2Vec?

I LOVE getting **paid** three days after my **payday**. Thanks USPS. **#sarcasm**

- paid:
  - (u'pay', 0.739471971988678),
  - (u'paying', 0.7319362759590149),
  - (u'payed', 0.7023305892944336),
  - (u'pays', 0.6648199558258057),
  - (u'reimbursed', 0.6148985624313354),
  - (u'owed', 0.5781134366989136),
  - (u'refunded', 0.5441124439239502),
  - (u'Paying', 0.5398716926574707),
  - (u'repaid', 0.524738609790802),
  - (u'pocketed', 0.52121901512146),
  - (u'unpaid', 0.5103040337562561),
  - (u'compensated', 0.5092697143554688),
  - (u'overpaid', 0.50515216588974),
  - (u'forked', 0.4953409433364868),
  - (u'reimburse', 0.4884592592716217),
  - (u'payment', 0.48814657330513),
  - (u'topay', 0.48790520429611206),
  - (u'Paid', 0.48704037070274353),
  - (u'invoiced', 0.48614436388015747),
  - (u'contractually\_entitled', 0.4853956699371338)



**Fracking Sarcasm using Neural Network.** Aniruddha Ghosh and Tony Veale. 7th Workshop on Computational Approaches to Subjectivity, Sentiment and Social Media Analysis (WASSA 2016). NAACL-HLT. 16th June 2016, San Diego, California, U.S.A.