A Neural Conversation Model

Aadil Hayat (13002)
Masare Akshay Sunil (12403)
Problem Statement

- To create a chatter bot capable to chat in natural language as humans do.
DNNs in Conversations

- The inputs and targets are required to be of fixed dimensionality
- Many problems that deal with sequence of inputs or targets where the dimensionality can not be predicted a-priori
- Eg. Speech Recognition, Machine Translation and Question-Answering
Seq2Seq

- One LSTM reads a whole Sequence at a time to generate a single vector with a large dimensionality.
- The Second LSTM is a RNN which is conditioned on the input sequence.
A Conversational Model

- A Translation Model using Seq2Seq will be easier than a conversational model due to no context required.

- Input sequence is the concatenation of what has been conversed so far.

- Lack of general world knowledge is another limitation of the purely unsupervised model.
IT Helpdesk Troubleshooting

VPN Issue

**Machine:** hi
**Human:** hello
**Machine:** could you please let me know what are the operating systems you are using?
**Human:** i am using linux
**Machine:** ok it was in the ssl vpn on which you stated it was broken
**Machine:** please check if you are logged in to corp network
**Machine:** what is the error that you are running please
**Human:** i am seeing an error related to vpn
**Machine:** what is the error message that you are getting when connecting to vpn using network connect?
**Human:** connection refused or something like that
**Machine:** may i know the version of network connect you connect?

**Human:** i am not sure i know that
**Machine:** is the network connect prompting for any user certificate
**Machine:** ?
**Human:** yes
**Machine:** are you at home or at work at the moment?
**Machine:** office?
**Human:** i am at home
**Machine:** try this
**Machine:** goto <URL> page and enter your name and password
**Human:** done
**Machine:** try logging in with <NAME> and check if its working fine now
**Human:** yes, now it works!
**Machine:** great
**Machine:** anything else that i can help
**Human:** no, that was very useful
**Machine:** you are other than <NAME> :)
**Machine:** have a nice night
The Dataset

- OpenSubtitles dataset Tiedemann 2009.
- Movie conversations in XML format.
- Training Dataset: 62M sentences (923M tokens)
- Validation Dataset: 26M sentences (395 tokens)
- Quite large but noisy
- This is an open-domain conversation dataset so expected results are quite fascinating.
Cleverbot vs NCM

**Cleverbot**

**Human**: What do you think about tesla?
**CleverBot**: I am tesla.

**Human**: What do you think about cleopatra?
**CleverBot**: Cool is cool.

**Human**: What do you think about england during the reign of elizabeth?
**CleverBot**: I like him. Do you?

**Human**: What do you think about bill gates?
**CleverBot**: Lets talk about Link.

**Neural Conversational Model**

**Human**: what do you think about tesla?
**Machine**: he’s a good conductor.

**Human**: what do you think about bill gates?
**Machine**: he’s a good man.

**Human**: What do you think about messi?
**Machine**: he’s a great player.

**Human**: what do you think about cleopatra?
**Machine**: oh, she’s very regal.

**Human**: what do you think about england during the reign of elizabeth?
**Machine**: it was a great place.
References


References


Questions?