

A Neural Conversational Model

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Introduction

- Conversational modeling is an important task in NLP and machine intelligence.
- Previous approaches exist, they are often restricted to specific domains (e.g., booking an airline ticket) and require handcrafted rules.
- The authors proposed sequence to sequence framework
- They test the model on chat sessions from an IT helpdesk dataset of conversations
- The model can sometimes track the problem and provide a useful answer to the user.

Model

- They use seq2seq framework described in (Sutskever et al., 2014)

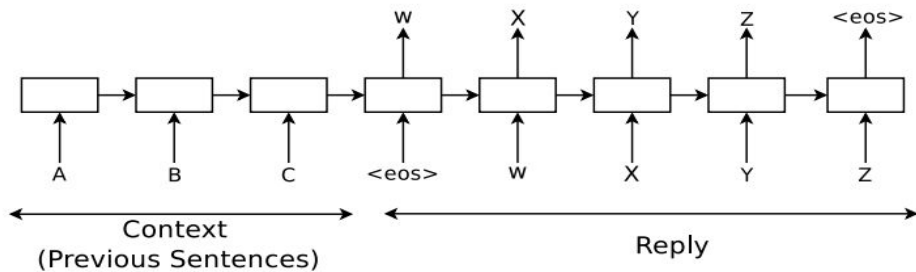


Figure 1. Using the seq2seq framework for modeling conversations.

- The hidden state is the “thought vector” because it stores the information of the sentence, or thought, “ABC”.

Dataset

- They used two datasets:
 - a closed-domain IT helpdesk troubleshooting dataset and;
 - Open-domain movie transcript dataset.

Result

- Conversation 1: VPN issues
 - Describe your problem: I am having issues accessing vpn
- Other context
 - Conversation 3: General knowledge Q&A
 - Conversation 4: Philosophical Q&A
 - Conversation 5: Morality
 - Conversation 7: Job and Personality

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

Result

Conversation 5: Morality

Human: *what is moral ?*

Machine: *what empowered humanity , what intellectual the essence is .*

Human: *what is immoral ?*

Machine: *the fact that you have a child .*

Human: *what is morality ?*

Machine: *what is altruism ?*

Human: *what is the definition of altruism ?*

Machine: *if you don 't believe in god , then you don 't know .*

Human: *ok ... so what is the definition of morality ?*

Machine: *well , the truth is , you 're not a believer in god almighty .*

Human: *tell me the definition of morality , i am quite upset now !*

Machine: *i 'm not ashamed of being a philosopher !*

Human: *tell me the definition of morality .*

Machine: *i don 't have ethics .*

Human: *look , i need help , i need to know more about morality ...*

Machine: *i don 't know what ethics is .*

Human: *seriously , what is morality ?*

Machine: *what is the definition of living ?*

Human: *why living has anything to do with morality ?*

Machine: *you 're not a cop .*

Human: *okay , i need to know how should i behave morally ...*

Conversation 4: Philosophical Q&A

Human: *what is the purpose of life ?*

Machine: *to serve the greater good .*

Human: *what is the purpose of living ?*

Machine: *to live forever .*

Human: *what is the purpose of existence ?*

Machine: *to find out what happens when we get to the planet earth .*

Human: *where are you now ?*

Machine: *i 'm in the middle of nowhere .*

Human: *what is the purpose of dying ?*

Machine: *to have a life .*

Human: *what is the purpose of being intelligent ?*

Machine: *to find out what it is .*

Human: *what is the purpose of emotions ?*

Machine: *i don 't know .*

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