

Chat bots and virtual assistants

Journal

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Abstract

I find the topic of chat bots and virtual assistants really cool. I will try to gather here some information found on the web.

1 Limitations of current bots

In this section, I will try to list current limitations that the bots seem to have. Typically things that humans would do right but that bots do wrong:

1. (01.03.19) I'm not sure that a bot can easily understand that it has done a mistake and not repeat it again. If there is a term which is ambiguous, like "backhoe" in the riggs app and the computer tries to react to meaning 1, and the user says "no, I meant meaning 2", I wonder how the bot could understand.
2. (01.03.19) I wonder if a bot can learn to fit its user need while talking with him/her.

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30.04.18 ~ Chat bots: Tai, Xiaoice, Named entity recognition, A nice blog about NLP

It seems that some fairly advanced chatbots already exist:

Wiki: Xiaoice

Wiki: Tay

01.05.18 ~ Google assistant, Dialogflow (API.AI), some french companies making chatbots

I discovered the company **Dialogflow** owned by google:

Wiki: Dialogflow

and also read about **Google assitant**:

Wiki: Goolge Assitant

I also discovered the following french companies/start-ups specialized in chatbots:

- Zelros: <http://www.zelros.com/>
- recast ai: <https://recast.ai/>
- golembot: <http://golembot.net/>

02.05.18 ~ A Coursera course to build your own bot

Roman recommended this course about NLP:

<https://www.coursera.org/learn/language-processing>

In the description of the course, they say that the final project consist in building your own chatbot.

09.01.19 ~ 5 levels of Chat bots

This page explains what are the 5 levels of chat bots. For now we are currently reaching level 3 (Google is at least):

<https://www.oreilly.com/ideas/the-next-generation-of-ai-assistants-in-enterprise>

01.01.19 ~ Conversation One: The anatomy of a modern conversation application

Vijeta shared this link which gives an idea of concepts like **ontology** (which from my understanding comes down to the definition of intents and entities related to the domain), and how to implement a DM using the context:

<https://conversation.one/2017/10/25/anatomy-modern-conversational-application/>

06.01.19 ~ Rasa Core and Interactive learning

In this article:

<https://blog.rasa.com/a-new-approach-to-conversational-software/>

it is explained that Rasa developped a way to create a DM using “interactive learning” which is a kind of reinforcement learning with feedback at every message, to build a good probabilistic model. I guess that it is good for the intent classification. It seems to be quite easy to use.

19.03.19 ~ Article detailing components of a chat bots (with shallow semantic parsing)

Mijail shared this article:

<http://aclweb.org/anthology/D18-2027>

which presents the general architecture of a virtual assistant, decomposing it into:

1. Intent Classification (Domain Classifier + Intent Classifier)
2. Entity Recognition
3. Entity Resolution
4. Semantic Praser (Entity Role Classifier + Entity Group Parser)
5. Question Answerer
6. Dialogue Manager
7. Application Manager