CONVERSATIONAL AI

Ander Alonso
Aitor Sànchez
Josu Oca
Alex de Miguel

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What is a CA?

A conversational agent (CA), or dialogue system, is a computer system that, by using speeches, graphics, haptics or even gestures, is able to converse with human beings.

1

Task oriented

- Inteligent conversation
- Tasks
- Siri, Interfaces to cars...

2

Non-task oriented

- Chatbots
- Simulate real conversation
- Using a natural language
- Rasa
- Dialogflow

Chatbot architecture

1

User's input

The user sends a message to the bot

2

Process the input

Using NLU the bot understands the input

3

Process the output

Using NLP the bot give a answer to the user´s query

Non-task based chabot

Types

Ruled-based

AI

Rule based

- Use a database and a set of rules to give an appropriate response

ELIZA

- Simulates a psychologist
- Created by Joseph Weizenbaum
- Assigns a value to each word of the user input sentence and uses the values to reorder the words and make a question.

ALICE

Based on ELIZA architecture and store knowledge about conversation in AIML.
Categories are the basic unit of knowledge in AIML
Pattern label → user's input
Template label → Alice answer

```
<category>

    <pattern> Hello ALICE ! </pattern>

    <template> Hi there! </template>

</category>
```

AI chatbots

- Understand the context
- Resamble natural language responses
- Training
- Focus on a single response turn
- Similar to question answering systems

IR-based

Sequence to sequence

Ruled-based Chatbots Vs. AI Chatbots

Ruled-based Advantages

- Integrate easily with legacy systems.
- Are highly accountable and secure.
- Are not restricted to text interactions.
- Cheaper than IA Chatbots.

Ai Advantages

- Learn from information gathered.
- Continuously improve as more data comes in.
- Understand patterns of behaviour.
- Have a broader range of decision-making skills.
- Can understand many languages.

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RASA - Open source conversational AI

RASA NLU

- Understands user messages and detects Intents and Entities.

INTENT

Objective of the user's input

What's the weather like tomorrow?

Intent: request_weather

ENTITY

Recognize information that helps to understand the sentence

I'm flying from Berlin to London

City **City**

RASA Core

Responsible for holding a contextual conversation and predicts the best answer base on:

Rasa - Installation

Rasa installation: “pip install rasa”
Create new Rasa project: “rasa init”

- actions.py: Code for your custom actions
- config.yml: Configuration of your NLU and Core models
- credentials.yml: Details for connecting to other services
- data/nlu.md: Your NLU training data
- data/stories.md: Your stories
- domain.yml: Your assistant’s domain
- endpoints.yml: Details for connecting to channels like FB messenger
- models/<timestamp>.tar.gz: Your initial model.

Rasa - Training

Create new intents and entities in data/nlu.md file

INTENT

##intent:name_of_intent followed by a list of question for the intent

```
## intent:goodbye
- bye
- goodbye
- see you around
- see you later
- talk to you later

## intent:ask_identity
- who are you
- what is your name
- how should i address you
- may i know your name
- are you a bot
```

ENTITY

Specified inside each question with [value](name of entity):

```
## intent:ask_shop_open
- does the shop open on [monday](weekday)
- does the shop open on [wednesday](weekday)
- does the shop open on [friday](weekday)
```

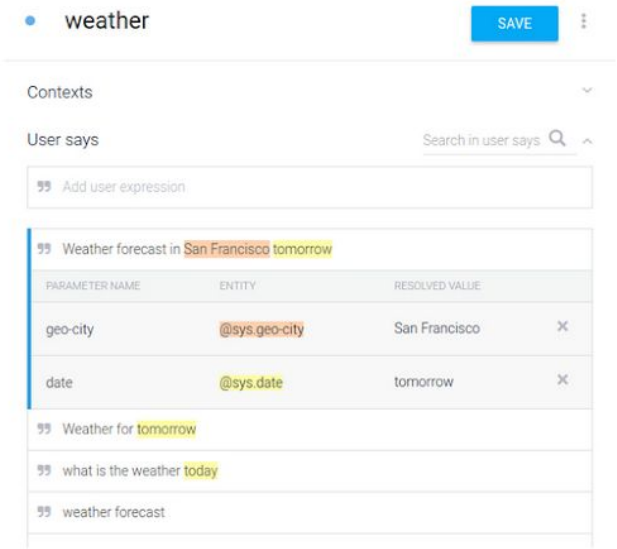
Rasa - Training

Train your model ---------- “rasa train nlu”
Test your model ----------“rasa shell nlu”

Dialogflow by Google

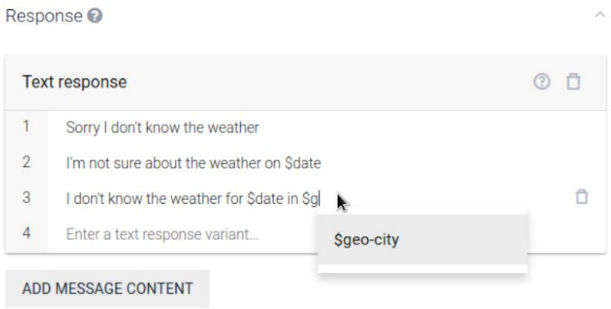
- Developer of human-computer interaction technologies.
- Based on natural language conversations.
- For designing and integrating conversational user interfaces.

Training -------> Intents



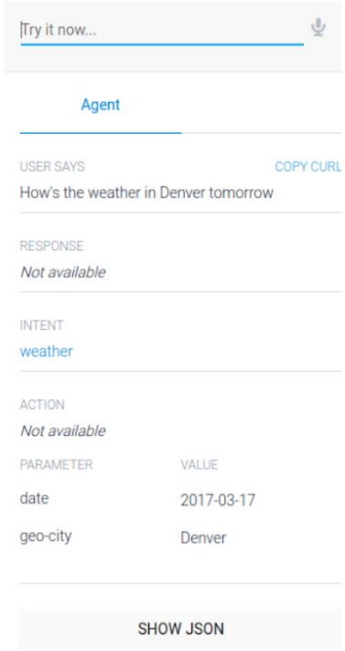
- Map what the user says and what the agent does.
- Based on Examples.
- Parameters are integrated.

Training -------> Answers



- Add different responses.
- Use different parameters to build answers related to the request.
- The agent will take into account the amount of parameters in the request to choose a fitting answer.

¡Try out!



- After creating indents, try out your agent's functioning.
- Use the platforms console
- Enter requests that are a little different to the examples you provided.

Conclusion

Questions?

Thank you for your attention