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Virtual Agent

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Abstract

Currently all the processes have been virtualized, and the agents or interacting in them as well, classifying themselves and even evolving their mind by increasing the interaction, which provides a feasible means of understanding to solve the focal needs which can be taught to an agent. virtual, training him as one more employee with the benefit of serving multiple clients through both written and voice channels. The development of them also evolves by providing facilities for both comprehension and custom construction to satisfy with the logical design the variants that may be presented to them.

Categories and Subject Descriptors (according to ACM CCS): Theory and Algorithms for application domains [Theory of Computation]: Machine learning Theory—Multi-agent learning

1. Introduction

Virtual agents are based on machine learning technology, which improves over time as the system ingests more data and learns through continued use.

A virtual agent is a chatterbot program that uses a computer generated, animated, and artificially intelligent virtual character acting as serving agent for costumer service, interlocutor to practice languages, virtual assistant and many more. Virtual agents are a combination of AI and graphical representation to help people perform task.

A virtual agent can offer recommendations, password help, account questions event follow up on sales leads, this behavior is approachable in many commercial and science areas.
What it's in Technical Terms Intelligent agents have been defined many different ways, technically this is:

- Accommodate new problem solving rules incrementally
- Adapt online and in real time
- Are able to analyze itself in terms of behavior, error and success.
- Learn and improve through interaction with the environment (embodiment)
- Learn quickly from large amounts of data
- Have memory-based exemplar storage and retrieval capacities
- Have parameters to represent short and long term memory

1.1. Classes

Russell Norvig group agents into classes based on their degree of perceived intelligence and capability:

- simple reflex agents
- model-based reflex agents
- goal-based agents
- utility-based agents
- learning agents

2. How to use

A moth complete is necessary for adopting virtual agent software through a cloud service provider or software vendor for training the virtual agent. From the perspective of production these are developed on the basis of trees and graphs not directed, however graphs are also used in certain conversations aimed at achieving the best experience.
Some platforms are:

- **API:IA**: It is a natural language comprehension platform that allows developers to easily design and integrate intelligent and sophisticated conversational user interfaces into mobile applications, web applications, devices and bots.
- **Chatfuel**: Allows you to create a chatbot easily, without the need to program. It uses both predefined answers and AI and offers direct integration with Facebook Messenger and Telegram. They also make bots to measure. According to their website they have made Forbes and TechCrunch.
- **Gupshup**: Allows you to create a bot for many different

platforms in just a few minutes. Among them, SMS, Twitter, WeChat, Slack, Hipchat, TeamChat, etc. It also sells bots already finished.
- **Smooch**: Integration direct with Web, Facebook Messenger, email, WeChat, Line, Viber and Telegram.
- **Bot Libre**: Open-source platform based on an advanced AI engine developed in Java. It can be used on any Java platform and its SDK allows access to the API using JavaScript, Android, Java, iOS and objective C.
- **Botsify**: To create your own bot with artificial intelligence without the need to know how to program. It includes integration with WordPress and other platforms such as Facebook.
- **Motion.ai**: Creation of chatbots with a visual approach using flowcharts. Integration with: Web, SMS, email, Facebook Messenger and Slack. It offers API to connect with other platforms if you have programming knowledge.

3. Cost vs. Satisfaction

Improving customer satisfaction means better-trained customer support staff but, at a low cost. When an economist analyzes the cost of the implementation and maintainability of a virtual agent, when compared to the number of employees needed to meet the number of clients that the virtual agent would attend, the great use of a virtual agent is noted. Many are the corporations that choose to have a virtual agent in all their customer service through chat, keeping personalized attention for when the situation merits special solutions.

This is a significant dilemma as improving satisfaction and productivity can be achieved by hiring more and better trained customer support staff, but at a considerable cost, but this has caused issues with comprehension, and especially among higher age groups. Condensing most customer service processes to ensure optimized forecasts for accurate workforce and cost-effective programming through a secure, scalable and flexible platform.

4. Benefits of using virtual agents

Virtual agents bring several benefits on both the user and the developer side, these are the ones with the greatest impact:

- The most notable benefit is how fast and efficient a response can be give to a costumer even breaking language barriers.
- The easy integration with existing systems and the big compatible devices.
- Answering questions with full availability automatically, that is to say, without overloads in the work and rotating nor nocturnes schedules for those in charge of customer service.
- The custom-designed avatars offer an entertaining customer experience.
- Virtual agents prevent information overload, manage information, as well as generate it by understand customer intent and can provide personalized answers to customer questions in a humanlike manner.

Chatbot vs Virtual Agent In general, if your main mode of interaction is through messages then you are communicating with a chatbot. There is an argument that the likes of a virtual assistant; who communicates by voice commands, can not be from a chatbot because it is outside these channels. But this is not a sufficient differentiator.In fact, more important is the function of the chatbot (or virtual assistant) that you use.

4.1. Chatbot

Chatbot are popular in call centers for to speed up attention and increase availability, but all kinds of service providers are using it today.Many web sites are using pop-up live chat or click to chat whereby customers can message customer service representatives online.

4.2. Cleverbot

It is an application that collects data from the artificial conversations that it maintains with Internet users; Once the conversation is finished, it is stored in a database and later used to simulate artificial intelligence. The database is peer to peer, which simulates artificial intelligence, therefore, it is enough to ask a personal question to demonstrate that after the answer is a randomly selected human. It was presented on The Gadget Show2 on March 7, 2011 and on Radiolab on May 31 of that same year. Its creator is Rollo Carpenter.

4.3. Mitsuku

Created from AIML technology by Steve Worswick. It has won the Loebner Prize, which is awarded to the most "human-likeÇhatbot. Mitsuku claims to be an 18-year-old female chatbot from Leeds. It contains all of Alice's AIML files, with many additions from user generated conversations, and is always work in progress. Worswick claims she has been worked on since 2005. Her intelligence includes the ability to reason with specific objects. Mitsuku has conversed with millions of people worldwide via the web and other applications, and is a three-time Loebner Prize winner.

4.4. Watson

It's a IMB virtual agent trained to understand common customer service requests in the myriad ways customers ask questions. As a Service platform it doesn't require installation and improvements are added automatically

4.5. Lola

Lola is based on API: AI of Google which applies machine learning chatbots. Its objective is to get a chatbot that manages to simulate in the most intelligent way a real dialog with the users. It is committed to the development of this type of technology in order to achieve a personalization of contact and continuous communication with users.

Myths

4.6. Myth 1: a chatbot is not smart enough

Some of the most powerful chatbots are equipped with robust natural language processing (NLP) to understand the meaning of a query instead of just using keywords. Thanks to Machine Learning, chatbots will continue to improve and produce higher self-service rates than ever before.

4.7. Myth 2: a virtual assistant can carry out a wider range of functions

Thanks to the advances in NLP and Machine Learning, this is changing, and text interaction has become closer to voice interaction. Chatbots are now much more diverse and can carry out more functions through their ability to understand natural language. The use of decision trees makes it much easier to discover the exact intent behind the users' queries, further expanding their functionality.

4.8. Myth 3: a virtual assistant is better to remember the context

Currently the best systems are capable of if you say or write "my email address is ...", the virtual agent or the chatbot will retain that information to use it in the future. Therefore, if you asked for a demonstration, you would not need to send it back.

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