AI Voice Assistant

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Abstract

We developed a virtual assistant that enables students to access interactive content adapted for an introductory undergraduate course on artificial intelligence. This chatbot is able to show answers to frequently asked questions in a hierarchical structured manner, leading students by either voice, text or tactile input to the content that better solves their questions and doubts. It was developed using Google Dialogflow as a simple way to generate and train a natural language model. Another convenience of this platform is its ability to collect usage data that is potentially useful for lecturers as learning indicators. The main purpose of this paper is to outline the methodology that guided our implementation so that it can be reproduced in different educational contexts and study chatbots as tools for learning. At the moment, several articles, news and blogs are writing about the potential, implementation and impact chatbots have in general contexts, however there is little to no literature proposing a methodology to reproduce them for educational purposes. In that respect, we developed four main categories as a generic structure of course content and focused on quick implementation, easy updating and generalization. The final product received a general approbation of the students due to its accessibility and well structured data.

Introduction

Virtual Assistants are software programs that help you ease your day-to-day tasks, such as showing weather report, creating reminders, making shopping lists etc. They can take commands via text (online chat bots) or by voice. Voice based intelligent assistants need an invoking word or wake word to activate the listener, followed by the command. We have so many virtual assistants, such as Apple's Siri, Amazon's Alexa and Microsoft's Cortana. This system is designed to be used efficiently on desktops. Personal assistant software improves user productivity by managing routine tasks of the user and by providing information from online sources to the user. JIA is effortless to use. Call the wake word 'JIA' followed by the command. And within seconds, it gets executed.

Scope and Objective

One of the main advantages of voice searches is their rapidity. In fact, voice is reputed to be four times faster than a written search: whereas we can write about 40 words per minute, we are capable of speaking around 150 during the same period of time15. In this respect, the ability of personal assistants to accurately recognize spoken words is a prerequisite for them to be adopted by consumers.

Methodology

Python is an OOPs (Object Oriented Programming) based, high level, interpreted programming language. It is a robust, highly useful language focused on rapid application development (RAD). Python helps in easy writing and execution of codes. Python can implement the same logic with as much as 1/5th code as compared to other OOPs languages.

System Requirements

The software is designed to be light-weighted so that it doesn't be a burden on the machine running it. This system is being build keeping in mind the generally available hardware and software compatibility. Here are the minimum hardware and software requirement for virtual assistant.

Hardware:

- Pentium-pro processor or later.
- RAM 512MB or more.

Software:

- Windows 7(32-bit) or above.
- Python 2.7 or later

Python

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Quepy

Quepy is a python framework to transform natural language questions to queries in a database query language. It can be easily customized to different kinds of questions in natural language and database queries. So, with little coding you can build your own system for natural language access to your database.

Pyttsx

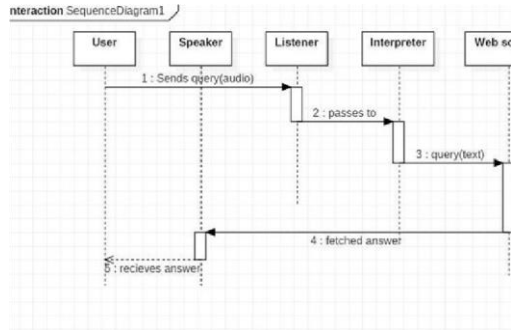Pyttsx stands for Python Text to Speech. It is a cross-platform Python wrapper for textto-speech synthesis. It is a Python package supporting common text-to-speech engines on Mac OS X, Windows, and Linux. It works for both Python2.x and 3.x versions. Its main advantage is that it works offline.

Speech Recognition

This is a library for performing speech recognition, with support for several engines and APIs, online and offline. It supports APIs like Google Cloud Speech API, IBM Speech to Text, Microsoft Bing Voice Recognition etc.

PROPOSED SYSTEM

In this proposed concept effective way of implementing a Personal voice assistant, Speech Recognition library has many inbuilt functions, that will let the assistant understand the command given by user and the response will be sent back to user in voice, with Text to Speech functions. When assistant captures thevoice command given by user, the under lying algorithms will convert the voice into text.

Features:

- Conducting an online search.

- Reading Wikipedia.

- Applications that are open.

- Send electronic mail.

- Play music from a folder on your computer's desktop.

- Listen to music via YouTube.

- Create a website.

- Obtain the current date and time.

Future Scope

Voice assistants will continue to offer more individualized experiences as they get better at differentiating between voices. However, it's not just developers that need to address the complexity of developing for voice as brands also need to understand the capabilities of each device and integration and if it makes sense for their specific brand. They will also need to focus on maintaining a user experience that is consistent within the coming years as complexity becomes more of a concern. This is because the visual interface with voice assistants is missing. Users simply cannot see or touch a voice interface.

Conclusion:

The popularity of voice activated virtual assistants, as well as their future potential, were examined in this study. Which may perform operations in audio format as directed by the user. It may open apps such as notepad, web searches, Wikipedia reading, alarm clock, audio player, and many others. These assistants make life easier for humans. We can use artificial intelligence and the internet of things to improve these gadgets.

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