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A REVIEW PAPER ON VIRTUAL ASSISTANT

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Abstract— Jarvis is a Python programming companion. Point it at a Python function, and it will execute it. As soon as you change your code and save it, Jarvis will detect this and run the function again. If an exception is thrown, it will be displayed in the error panel. If you include some debugging statements in your code, they will be displayed in the debug panel. Finally, if you use the OpenSceneGraph Python bindings, you can output an OSG tree to the Jarvis interface. This way, you can immediately see the new 3D scene that your code creates.

Jarvis was inspired by the work of Bret Victor, in particular his talk Inventing on Principle. The central idea is that the feedback loop in programming should be as short as possible, so that you can see the effects of your code changes immediately or almost immediately. Jarvis implements a (small) subset of these ideas.

Keywords: Python Programming

1. INTRODUCTION

A virtual assistant (VA) is a type of software program or application that uses artificial intelligence (AI) and natural language processing (NLP) to interact with users and perform a range of tasks. It can be thought of as a digital assistant that provides administrative, organizational, and even personal support to users.

A virtual assistant can perform a variety of tasks, including scheduling appointments, sending emails, setting reminders, answering questions, making phone calls, and even conducting research. It is designed to mimic human conversation and can understand and respond to voice or text commands. VAs can be accessed through various devices, such as smartphones, tablets, or smart speakers.

Virtual assistants use AI and machine learning algorithms to improve their responses over time. They can learn from previous interactions with users, allowing them to provide more accurate and personalized responses to users' requests. This makes them a valuable tool for businesses, entrepreneurs, and individuals who want to save time and increase productivity.

In summary, virtual assistants are digital assistants that use AI and natural language processing to interact with users and perform a range of tasks. They can be accessed through various devices and are designed to improve productivity and save time. With the advancements in AI and machine learning, virtual assistants are expected to become even more sophisticated in the future, making them an indispensable tool for businesses and individuals alike.

2. OBJECTIVE

The objective of having a virtual assistant (VA) is to improve productivity, efficiency, and convenience for businesses and individuals.

Here are some specific objectives of having a virtual assistant:

1. Timesaving: Virtual assistants are designed to automate repetitive and time-consuming tasks, such as scheduling meetings, responding to emails, and organizing files. By delegating these tasks to a virtual assistant, individuals and businesses can save time and focus on higher-priority tasks.
2. Increased productivity: By offloading routine tasks to a virtual assistant, individuals and businesses can improve productivity and achieve more in less time. Virtual assistants are available 24/7 and can work on multiple tasks simultaneously, which makes them an effective tool for improving productivity.
3. Cost savings: Hiring a virtual assistant is often more cost-effective than hiring a full- time employee. Virtual assistants are typically paid on an hourly basis or per task, which means that businesses and individuals only pay for the work that is actually performed.
4. Improved accuracy: Virtual assistants are programmed to perform tasks with a high degree of accuracy and attention to detail. This can help reduce errors and mistakes, which can be costly and time-consuming to correct.
5. Better customer service: Virtual assistants can be used to provide better customer service by responding to customer inquiries, providing information, and resolving issues quickly and efficiently.
6. Scalability: Virtual assistants can be scaled up or down depending on the needs of the business or individual. This means that they can handle increased workloads during peak periods, and be scaled back during slower periods.

In summary, the objective of having a virtual assistant is to improve productivity, efficiency, and convenience for businesses and individuals. By automating routine tasks and delegating work to a virtual assistant, individuals and organizations can save time, improve accuracy, and focus on higher-priority tasks.

3. SCOPE

The scope of using a virtual assistant can be quite broad, depending on the needs of the individual or organization. Here are a few examples of the ways in which virtual assistants can be used:

1. Administrative tasks: Virtual assistants can help with various administrative tasks, such as answering emails, scheduling appointments, managing calendars, making travel arrangements, and data entry.
2. Customer service: Virtual assistants can handle customer inquiries and complaints, process orders, and provide support via phone, email, or chat.
3. Social media management: Virtual assistants can help manage social media accounts by creating content, scheduling posts, responding to comments and messages, and analyzing engagement metrics.
4. Research: Virtual assistants can conduct research on various topics, such as market trends, competitors, industry news, and product reviews.
5. Content creation: Virtual assistants can create content such as blog posts, articles, videos, and graphics.
6. Personal tasks: Virtual assistants can assist with personal tasks such as making appointments, arranging for household services, managing finances, and booking travel.
7. Project management: Virtual assistants can help with project management tasks such as creating timelines, delegating tasks, and tracking progress.

Overall, the scope of using a virtual assistant is quite broad, and can range from simple administrative tasks to more complex project management and research tasks. By delegating these tasks to a virtual assistant, individuals and organizations can free up time and focus on more important tasks.

PURPOSE

A voice assistant is a digital assistant that uses voice recognition, natural language processing and speech synthesis to provide aid to users through desktop and voice recognition. Voice assistants are built on artificial intelligence (AI), machine learning and voice recognition technology. As the end user interacts with the digital assistant, the AI programming uses sophisticated algorithms to learn from data input and better itself at predicting the user's needs. Some assistants are built with more advanced cognitive computing technologies which will allow a digital assistant to understand and carry out multi- step requests with numerous interactions and perform more tasks Digital assistants can be contrasted with another application of consumer-facing AI called smart advisors. Smart advisor programs are knowledge-oriented, while digital assistants are task oriented, although some perform both roles. Popular voice assistants currently include Apple's Siri, Amazon's Alexa, Google Now, Google Assistant and Microsoft's Cortana.

ACHIEVEMENTS

The result of this project is an effective and efficient system that will help the user to save the data with the advantage of data backup. It makes the working a lot more easier. It has made the management system a lot more convenient than before. It also helps us to reduce the use of paper.It is also user- friendly. It provides access to data easily and very quick. It helps us to save time, efforts and resources.

PYTHON

➢ What is Python?

Python is a popular programming language. It was created by Guido van Rossum, and released in 1991.
It is used for:

- web development (server-side),
- software development,
- mathematics,
- system scripting.

➢ What can Python do?

- Python can be used on a server to create web applications.
- Python can be used alongside software to create workflows.
- Python can connect to database systems. It can also read and modify files.
- Python can be used to handle big data and perform complex mathematics.
- Python can be used for rapid prototyping, or for production- ready software development.

➢ Why Python?

- Python works on different platforms (Windows, Mac, Linux, Raspberry Pi, etc).
- Python has a simple syntax similar to the English language.
- Python has syntax that allows developers to write programs with fewer lines than some other programming languages.
- Python runs on an interpreter system, meaning that code can be executed as soon as it is written. This means that prototyping can be very quick.
- Python can be treated in a procedural way, an object-orientated way or a functional way.

➢ Good to know :

- The most recent major version of Python is Python 3, which we shall be using in this tutorial. However, Python 2, although not being updated with anything other than security updates, is still quite popular.
- In this tutorial Python will be written in a text editor. It is possible to write Python in an Integrated

Development Environment, such as Thonny, Pycharm, Netbeans or Eclipse which are particularly useful when managing larger collections of Python files.

➢ Python Syntax compared to other programming languages :

- Python was designed for readability, and has some similarities to the English language with influence from mathematics.
- Python uses new lines to complete a command, as opposed to other programming languages which often use semicolons or parentheses.

- Python relies on indentation, using whitespace, to define scope; such as the scope of loops, functions and classes. Other programming languages often use curly-brackets for this purpose.

➢ 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.

➢ Pyttsx3
- Pyttsx3 stands for Python Text to Speech. It is a cross-platform Python wrapper for text-to-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.

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