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Jarvis the AI Personal Assistant

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Abstract: Personal voice assistants have become a ubiquitous part of modern life, with devices such as Amazon's Alexa, Google Home, and Apple's Siri offering a convenient and intuitive way to interact with technology. These intelligent assistants can perform a wide range of functions, from setting reminders and controlling smart home devices to conducting online searches and making phone calls. As the technology behind personal voice assistants continues to evolve, these systems are becoming increasingly sophisticated, using natural language processing and learning and respond to Despite the many benefits of personal voice assistants, there are also concerns around privacy and data security. These systems often collect and store sensitive user information, such as voice recordings and search history, raising questions about how this data is used and who has access to it. There have been several high-profile cases of personal voice assistant data being compromised, highlighting the need for robust security measures to protect user privacy.

This paper will explore the various aspects of personal voice assistants, from their technology and functionality to their impact on society and the potential risks and benefits associated with their use. We will begin by examining the history and evolution of personal voice assistants, tracing their development from early speech recognition systems to the sophisticated AI-powered assistants of today. We will then delve into the technology behind personal voice assistants, exploring the various approaches to natural language processing and machine learning that underpin these systems. Following this, we will explore the various functions and applications of personal voice assistants, from their use in smart homes and cars to their potential in healthcare and education. We will examine the ways in which personal voice assistants are changing the way we interact with technology, and the impact that this is having on our lives and communities.is not all positive. We will also consider the potential risks associated with personal voice assistants, including concerns around privacy and data security. We will explore the ways in which these systems collect and store user data, and the implications of this for user privacy and security. We will also examine the steps that can be taken to mitigate these risks, including the use of encryption and secure data storage.Finally, we will consider the future of personal voice assistants, exploring the ways in which these systems are likely to evolve in the coming years. We will

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consider the potential for new applications and use cases, and the role that personal voice assistants may play in shaping the future of technology and society.
In conclusion, personal voice assistants represent a significant development in the field of technology, offering a convenient and intuitive way to interact with digital systems. While there are certainly concerns around privacy and security, these risks can be mitigated through the use of robust encryption and secure data storage. As personal voice assistants continue to evolve and become more sophisticated, they are likely to become an even more integral part of our lives, shaping the way we interact with technology and each other.

Keywords: Siri, Alexa, Cortana, Google Assistant, Voice Assistant, Python's Speech Recognition.

1. INTRODUCTION

Personal voice assistants have become an increasingly popular technology recent years, offering a new way to interact with digital systems. These intelligent assistants use natural language processing and machine learning algorithms to respond to voice commands and perform a wide range of tasks, from setting reminders and controlling smart home devices to conducting online searches and making phone calls. The convenience and ease-of-use offered by personal voice assistants have made them a ubiquitous part of modern life, with devices such as Amazon's Alexa, Google Home, and Apple's Siri now found in homes and offices across the world.The development of personal voice assistants has been a long and complex process, with early attempts at speech recognition technology dating back to the 1950s. However, it is only in recent years that the technology has advanced to the point where personal voice assistants have become a viable consumer product. Advances in natural language processing and machine learning algorithms have enabled these systems to understand and respond to complex requests, making them more versatile and useful than ever before.One of the key benefits of personal voice assistants is their ability to simplify the way we interact with technology. Rather than relying on a physical interface such as a keyboard or mouse, users can simply speak to their device and receive a response. This makes personal voice assistants particularly useful for people with disabilities or those who struggle with traditional interfaces. It can also be a time-saver, allowing users to perform tasks such as setting reminders or conducting online searches while they are engaged in other activities.

Another benefit of personal voice assistants is their integration with other technologies. Many personal voice assistants can be used to control smart home devices, such as lighting and heating systems, or to play music through wireless speakers. This integration can create a seamless and intuitive user experience, allowing users to control multiple devices with a single voice command. Despite the many benefits of personal voice assistants, there are also concerns around privacy and data security. These systems often collect and store sensitive user information, such as voice recordings and search history, raising questions about how this data is used and who has access to it. There have been several high-profile cases of personal voice assistant data being compromised, highlighting the need for robust security measures to protect user privacy. In this paper, we will explore the various aspects of personal voice assistants, from their technology and functionality to their impact on society and the potential

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Literature Survey

There are different approaches had been presented by different researchers. Some of the methods have been presented in this section:

Bassam A, Raja N. et al, expounded on proclamation and discourse which is generally critical. In the correspondence among human and machine game plan was finished through simple sign which is changed over by discourse sign to advanced wave. This innovation is greatly used, it has boundless purposes and license machines to answer properly and every time to client voices, likewise offers valuable and valued offices. Discourse Acknowledgment Framework (SRS) is rising bit by bit and has endless applications. The examination has uncovered the outline of the methodology; it is a basic model.

B. S. Atal and L. R. Rabiner et al, made sense of in regards to discourse examination, and result is consistently finished in blend with pitch examination. The exploration portrayed an example acknowledgment strategy for deciding if a given cut of a discourse sign ought to be classified as voiced discourse, unvoiced discourse, or quiet, contingent upon aspects completed on signal. The primary limitation of the method is the prerequisite for practice the calculation on definite arrangement of aspects picked, and for the particular recording conditions .

Radha and C. Vimala et al, made sense of that most broad method of correspondence among people is discourse. As this is the greatest possible level of procedure, people would indistinguishable from use discourse to interrelate with machines as well. Along these lines, independent discourse recognizable proof has a great deal of notoriety. Most strategies for discourse acknowledgment resemble Dynamic Time Traveling (DTW), Well. For the component mining of discourse Mel Recurrence Cepstrum Coefficients (MFCC) has been used which offers a gathering of trademark vectors of discourse waveform. Earlier review has presented MFCC to be more exact and genuine than rest trademark mining approaches in the discourse acknowledgment. The work has been finished on MATLAB and investigational

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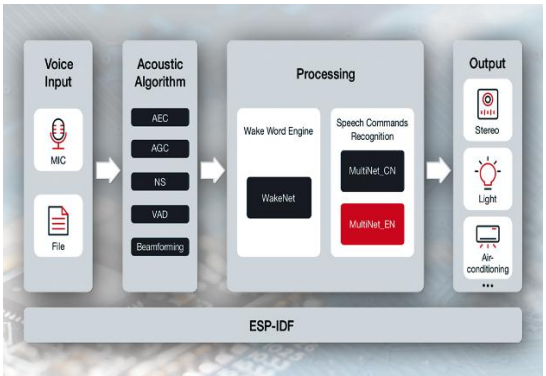
results portray that framework is fit for recognizing words at acceptably extraordinary exactness .

Python is an Uh oh (Article Arranged Programming) based, significant level, deciphered programming language. It is a vigorous, exceptionally helpful language zeroed in on fast application improvement (RAD). Python helps in simple composition and execution of codes. Python can execute a similar rationale with as much as 1/fifth code when contrasted with other Oh no dialects. Python gives an enormous rundown of advantages to P.G.MOZE School OF Designing WAGHOLI, PUNE Page | 9 all. The use of Python is with the end goal that it can't be restricted to just a single action. Its developing ubiquity has permitted it to go into probably the most well known and complex cycles like Man-made consciousness (computer based intelligence), AI (ML), regular language handling, information science and so forth. Python has a great deal of libraries for each need of this task. For JIA, libraries utilized are discourse acknowledgment to perceive voice, Pyttsx for text to discourse, selenium for web robotization and so on. Python is sensibly effective. Effectiveness is generally not an issue for little models. On the off chance that your Python code isn't sufficiently proficient, an overall method to further develop it is to figure out the thing is taking most the time, and carry out only that part more effectively in some lower-level language. This will bring about considerably less programming and more effective code (since you will have additional opportunity to enhance) than composing everything in a low-level language.

T. Schultz and A. Waiel et al, made sense of about the spreading of discourse innovation items all over the planet, the faithfulness to novel objective dialects ends up being a valuable concern. As an importance, the examination accentuations on the question of how to port colossal jargon unending discourse acknowledgment (LVCSR) frameworks in a quick and efficient way. All the more especially the exploration needs to assess acoustic models for a clever objective language through discourse data from various source dialects, however just limited information from the objective language ID results utilizing language-reliant, free and language-versatile acoustic models are portrayed and pondered in the structure of Worldwide Telephone project which looks at LVCSR techniques in 15 dialects.

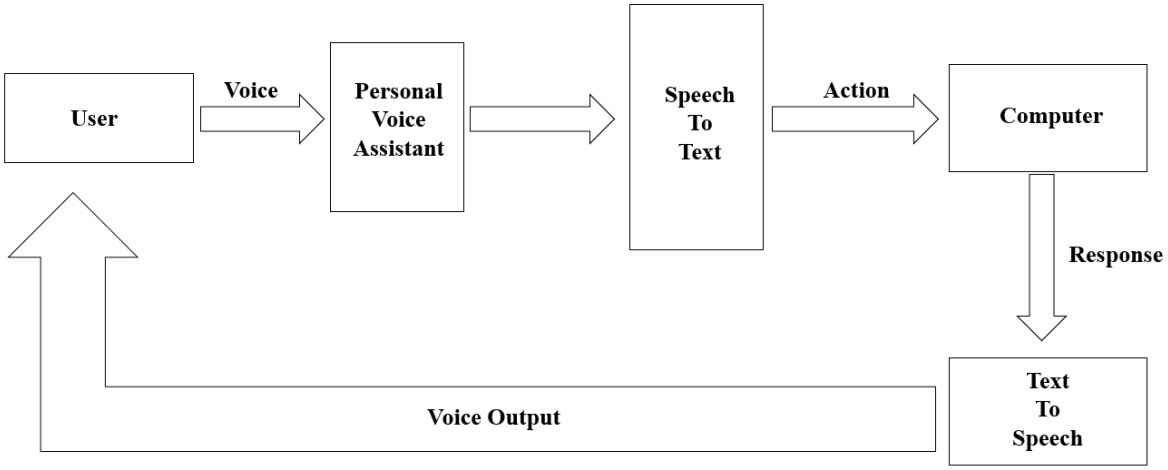
System Architecture

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.



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2. CONCLUSIONS

We have computerised various administrations using a single line order thanks to this voice partner. It makes the great majority of the client's tasks easier, including web browsing, retrieving weather gauge details, language guidance, and clinical-related queries. We want to turn our project into a complete server right hand that can function in place of an overall server organisation. Plans for the future include connecting Jarvis to a portable device using React Local to provide a synchronised experience between the two connected devices. Additionally, Jarvis is designed to eventually include automatic arrangement supporting flexible beanstalk, reinforcement documents, and all duties performed by a server head in general.

3. REFERENCE

1. Abhay Dekate, Chaitanya Kulkarni, Rohan Killedar , "Study of Voice Controlled Personal Assistant Device" International Journal of Computer Trends and Technology (IJCTT)– December 2016.
2. Gaurav Agrawal, Harsh Gupta, Divyanshu Jain, Chinmay Jain, Prof. Ronak Jain "DESKTOP VOICE ASSISTANT" International Research Journal of Modernization in Engineering Technology and Science --May-2020.
3. Prajyot Mane , Shubham Sonone , Nachiket Gaikwad and Prof. Jyoti Ramteke "Smart Personal Assistant using Machine Learning" ICECDS-201

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