ADVANCED DIGITAL VOICE ASSISTANT WITH VOICE RECOGNITION INTELLIGENCE

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Abstract— Virtual assistant is boon for everybody during this new era of 21st century. It has paved way for a replacement technology where we will ask inquiries to machine and may interact with IV As people do with humans. This new technology attracted almost whole world in some ways like smart phones, laptops, computers etc. a number of the many VPs are like Siri, Google Assistant, Cortana, and Alexa. Voice recognition, contextual understanding and human interaction are the problems which aren't solved yet during this IVAs. So, to unravel those issues 100 users participated a survey for this research and shared their experiences. All users' task was to ask questions from the survey to all or any personal assistants and from their experiences this research paper came up with the particular results. Consistent with that results many services were covered by these assistants but still there are some improvements required in voice recognition, contextual understanding and hand free interaction. After addressing these improvements in IVAs will certainly increased its use is that the main goal for this research paper This application is along these lines created in order that it can oversee content need to by user, analyze the voice properties and choose the direction in voice. We also present a completely unique approach that uses pitch feature of voice within the interest of identifying the speaker's gender with as little speech as possible. We also investigate the cross comparison of three different algorithm such GMM, HMM, SVM of a model trained on English speakers. And finding the simplest suitable algorithm for this kind of approach work.

Keywords— Artificial Intelligence, NLP, Automation, cross-lingual method, Gender Recognition.

INTRODUCTION

One of the objectives of Artificial Intelligent (AI) **is that the** acknowledgment of characteristic exchange among people and machines. as **lately** , the dialogue systems, also **referred to as** interactive conversational systems are the fastest growing area in Artificial knowledge. Numerous organizations have utilized the dialogue systems technology **to line** up **differing types** of Virtual Personal Assistants(VPAs) **in sight** of their applications and areas. **during this** paper we build up a Virtual Voice Assistant for Desktop. **it's** very time consuming and hard to doing their typical day by day task. Along these lines, **it might** be extremely useful if this assignment will perform naturally by a bot. Human voice **provides a** significant hints in communication. Spoken discourse frameworks are canny operators **which will** assist clients with completing tasks all the more proficiently by means of spoken associations [1]. **it's** a program **which will** talk(communicate) with people in regular language and react that in characteristic language in Voice. This venture encourages the client to robotize their **a day** schedule task utilizing voice order. **during this** manner to evade inconvenience of doing **a piece** physically **instead of** simply **provides a** voice direction and **it'll** do naturally for you. A voice assistant or intelligent individual assistant **may be a** product specialist **which will** perform assignments or administrations for **a private hooked in to** verbal directions **for instance** by deciphering human discourse and react by means of blended voices. Clients can pose their partners' inquires, control home computerization gadgets, and media playback by means of voice [2]. The Ultron is **fit** robotizing and overseeing undertakings, **for instance** , open browser, website, search on Google, search on Wikipedia, send email, dispatch application, discloses to you flow whether and temperature of practically any city, reveals to you current time, greeting you, play tune by distinguishing ebb and flow mind-set, convert voice to content, convert content into voice, make an interpretation of anything into any language, mechanize my Facebook talk, Telegram bot, **able to** cause correspondence in LAN, to computerize PC activity with **the top** goal that Shutdown, Restart, Lock

gadget, Close tabs, and **ready to** make **turn** my phone. The Ultron also **ready to** Identifying the gender of a speaker from speech **features a sort of** applications **starting from** speech analytic s to personalizing human-machine interactions. Mostly this voice assistant approach **is extremely** helpful for blind peoples and person with disabilities.

While gender identification in previous work has explored **the utilization** of the statistical properties of the speaker's pitch features. **during this** paper, we also explore the impact of using spectral features in conjunction with pitch features on identifying gender. **during this** paper, we compare and contrast the modeling choices when training a gender identifier using prosodic versus spectral feature streams, summary statistics versus complete feature trajectory and numerical versus categorical representation of input features. We also explore the cross-lingual robustness of our three classifiers algorithm are SVM, GMM, HMM by evaluating the performance of our "The Free ST **American English** Corpus data-set (SLR45)".
Finally, we investigate the impact **of various** algorithms including male **and feminine** speech and demonstrate an improved accuracy on a benchmark on SLR45 data and compared against previous results on this data and finding **the simplest** algorithm which properly fit into Voice Gender Recognition approach. **generally** , a speech and voice recognition system **are often** used for gender identification. A natural voice recognition system **is that the** human ear. The human ear has **a superb** mechanism **which may** efficiently distinguish the gender by voice and speech **supported** attributes like frequency and loudness.

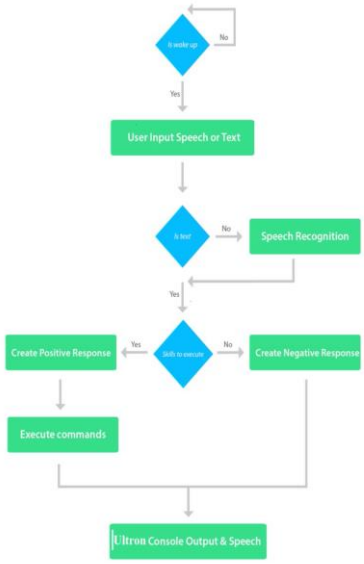


Fig (a): Design System

Literature Survey

NAME OF PAPER	ALGORITHM / TECHNOLOGY	TOOLS USED / SIMULATOR USED	PLATFORM	FUTURE SCOPE
An Intelligent Virtual Assistant using Raspberry pi [1]	Using raspberry pi	It works over Wi-Fi and use Hardware to Automate Home using Internet of Things.	Python	The Voice Command System has an enormous scope in the future. Like Siri, Google Now and Cortana become popular in the mobile industry.
Intelligent Automated Assistance System.[2]	Using Raspberry pi, IOT, home automation, Artificial Intelligence, Cloud Computing	The device will be an assistant for the user who can give reply to user wide number of queries either as voice or through its display.	Python,AWS Alexa Voice Service	In future it can create a way for connected homes using Internet of Things, Voice Command System, and Computer Vision.
ReeMiE – Intelligent Personal Assistant [3]	Using Raspberry pi, IOT, Face recognition and Intelligent Natural Language Processing.	In this paper they purposed an implementation of a secure biometric based personal assistant system.	Python, Flask	Personal assistant has huge purview of scope in the areas of centralized control over devices using internet of things.
Personal Assistant with Voice Recognition Intelligence [4]	Uses "Google Voice Search" service and android phone	It works on their Voice Commands It also has the capability of recognizing the voice commands without internet connection.	Android	PARI is language barrier independent which active responds to user's voice commands So in future we can add languages
Personal Virtual Assistant Using NODE MCU [5]	It Use natural language processing (NLP) to match user text or voice input to executable commands.	In this paper they proposed system and provide a wide variety of services, and particularly those from Amazon, Alexa and Google Assistant.	Python, NODE MCU	This system provides central point of communication for reducing time son In future this system can be implemented almost in every sector like finance, marketing, health care, education, entertainment.

METHOD OF VOICE ASSISTANT

Speech Recognition

Google Speech Recognition: It uses AI GMM algorithms to acknowledge spoken voice sentence. First it records the client voice and believes and cross matches spoken information with put away voice information on the server. Customer application fires up and prompts client to incorporate utilizing Google Speech Recognition. Information is shipped to the Google server for handling and content is returned to customer. Information content is passed to the regular language preparing (NLP) server for processing utilizing HTTP (Hypertext Transfer Protocol) POST At that time the server performs NLP.

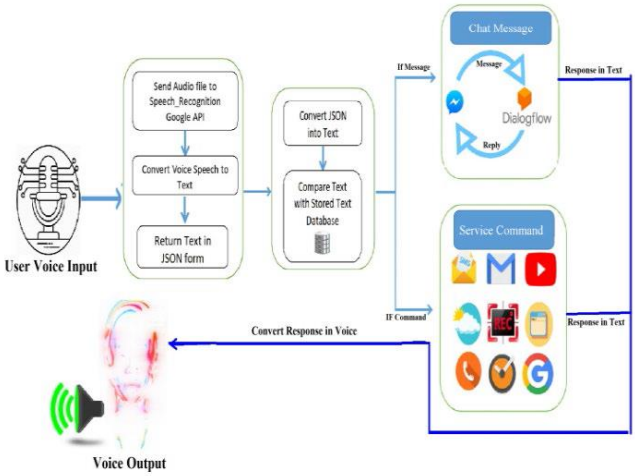


Fig (b) : Architecture of Voice Assistant

GMM Algorithm

The Gaussian Mixture Model (GMM) may be a parametric likelihood thickness work which is represented as a weighted entirety of Gaussian segment densities. It's utilized as parametric model of likelihood conveyance of estimating highlights in biometric frameworks. Gaussian Mixture Model (GMM) is employed as a classifier to seem at the highlights separated from the MFCC with the stored layouts. Gaussian Mixture Model is spoken to by its Gaussian conveyance and every Gaussian dispersion is decided by its mean, fluctuation and weight of the Gaussian appropriation. Gaussian Mixture thickness is weighted.

HMM Algorithm

Speech is essentially a non-stationary sign. At the purpose once we talk, our articulatory mechanical assembly tweaks the gaseous tension and stream to make a discernible arrangement of sounds. While the ghastly substance of a selected sound may incorporate frequencies up to a couple of thousand Hertz, our articulatory arrangement changes on the request for around 10 times each second. Discourse demonstrating therefore includes the investigation of the brief time-frame ghastly properties of individual sounds, and portrayal of the while changes within the articulatory setup prompting diverse discourse sounds. The brief timeframe properties of a private sound are often advantageously spoken to by a ghostly estimation vector got by means of such standard strategies as estimation of the discrete (quick) Fourier change (FFT), the straight expectation technique (LPC) and autoregressive/moving normal (ARMA) models [1,2,10,27,28].

MODULES

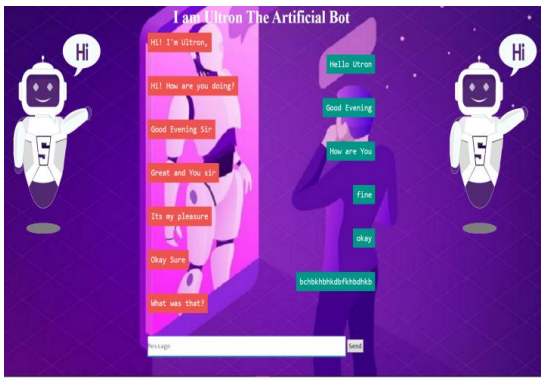
Login Module

This module Client ***able to*** login into the framework ***to urge*** to different administrations of Ultron. Login Module is an entryway module ***that allows*** clients to ***check in*** .***you'll*** include this module any module tab ***to allow*** clients to ***check in*** to the framework. It shows the essential beginning up page with some perception impact till framework prepare.

Chat-Bot Module

This Framework may be a web application which provides answer to the inquiry of the understudy. Understudies simply got to question through the bot which is employed for visiting. Understudies can visit utilizing any organization there's no particular arrangement the client must follow. The Framework utilizes worked in man-made reasoning to answer the query.With this module interface client able to speak with Ultron in to such an extent that it permits visiting interface on localhost and Wire stage where you'll chat with Ultron and obtain react the approaching messages utilizing Man-made brainpower.Visit Bots are goliath step in changing CMS to up and coming age of Computerized encounters and commitment. This Module assists arrangement With voicing and Text Based Talk Bot that

collaborates with client as a typical layer among Drupal and NLP.



Search Module

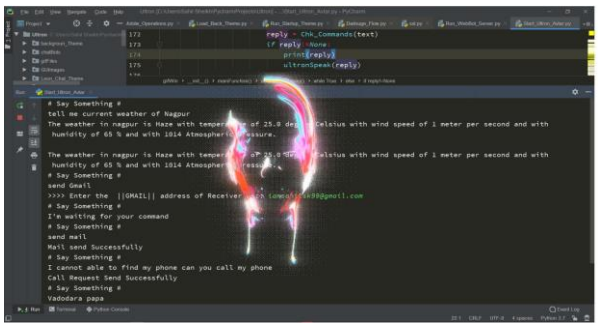
This module is employed to permit to use the service of searching operation using voice command such it allows Google Search, Wikipedia Search, Youtube song search, Whether for-casting, etc

Mobile Module

This module is familiar with performing day by day task. It permits client to choose a choice sending messages naturally and from this module we will able to send gmail message too and furthermore able to discover and find your telephone by deciding on decision thereon.

Desktop Automation Module

This module ***is employed*** to automate your PC ***such*** it perform operation like opening any apps, get time and date, make desktop lock, shutdown, restart , close tabs, minimize window, maximize tabs, TTS, etc automatically by just given simple voice command.



CONCLUSIONS

In this , we've introduced the system design and use instances of Voice Assistant, an all inclusive voice control associate on Desktop.

The commitments of Voice Assistant are twofold. Initially, it's the voice control application that provides improvements to all or any applications running on a framework by orchestrating directions set from on-screen setting.

The advantage of voice directions over multi-contact while collaborating with a screen non-outwardly is that it doesn't expect focuses to be found and during this manner keeps far away from the problems with pointing .

It spares time. this technique gives the visually impaired individuals with a capacity content to discourse on the off chance that they have to urge substance of the report put away in their framework based robot stage and shrewd pc worked control and observing framework are presented.

This provides simplicity of activity. The Perusing of SMS, E-mail, and News are often conceivable by machine.

Such quite system is extremely helpful for blind peoples.

We also are also providing an approach where system can ready to detect gender of person from voice and comparing the three different machine learning algorithm and finding the simplest method best for such operation.

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