

# Siri-The Intelligent Personal Assistant

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**Abstract** - Siri is Apple's personal assistant for iOS, macOS, tvOS and watchOS devices that customizes voice recognition and is powered by artificial intelligence (AI). Siri answers users' questions by speaking through the device's speaker and providing relevant information from certain applications like web search or calendar on the home screen. This paper attention on what Siri does, how she works, what makes her better than her competitors and what all she still needs to learn to become even stronger.

**Keywords:** Siri, iOS, macOS, tvOS, watchOS Apple Inc.

## I. INTRODUCTION

Siri is a virtual assistant that is part of the operating systems iOS, watchOS, macOS, HomePod and tvOS from Apple Inc. The assistant uses voice requests and a natural language user interface to answer questions, create references and perform actions by delegating requests to a number of Internet services. With continuous use, the software adapts to the use of the individual language, search queries and user preferences.

The returned results will be adjusted. SIRI is an artificial intelligence program that includes machine learning, natural language processing and a web search algorithm (Roush 2010).

Siri was born from the CALO project sponsored by DARPA and was initially developed by Dag Kittlaus and his team at SRI International as an iPhone application. Apple bought Siri in 2010. Siri is currently managed by Bill Stasior, vice president, Siri. The technology is combined in the iPhone, iPod touch and iPad as well as in the new home automation framework of Apple Home Kit.

Apple's Siri has been used primarily by people who cannot use smartphones the traditional way. It was launched under a different name, VoiceOver. VoiceOver is a similar product from Siri, Inc., designed for Parkinson's and visually impaired patients.

Apple purchased VoiceOver technology and reintroduced it as Siri in the main consumer market. Siri has been reintroduced with a new interface as part of iOS 5.

## II. TECHNOLOGY IDENTIFIED

### 2.1 Speech to text (STT) engine

The engine exchanges the user's voice for text. The voice can be an audio file or a user's voice stream.



Figure 1: Speech to text (STT)

### 2.2 Text to speech (TTS) engine

Convert text to speech. This is particularly useful when driving or cooking so that the user does not have to stop doing what he is doing to work with the voice assistant. It also plays a big role in the humanization of the assistant.

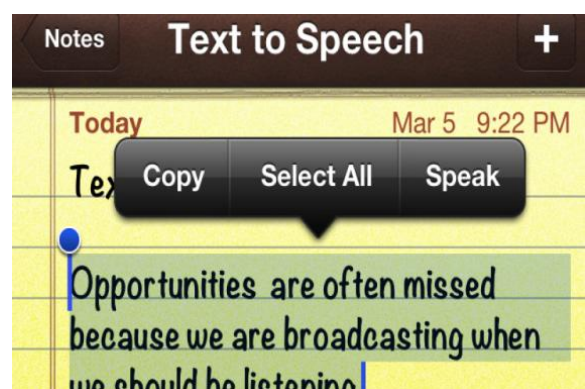


Figure 2: Text to speech (TTS)

### 2.3 Tagging (Intelligence)

Tagging helps a voice assistant understand what a user wants. For example, the user may ask, "Do I need an umbrella tonight?" The marking engine can then provide the information with a weather or calendar information tag.



Figure 3: Tagging

### 3.4 Noise reduction engine

There is hardly calm and perfect environment for voice requests, there will always be a barking car or dog. So the noise reduction engine not only eliminates white noise, but it also helps your assistant understand you.

### 3.5 Voice biometrics

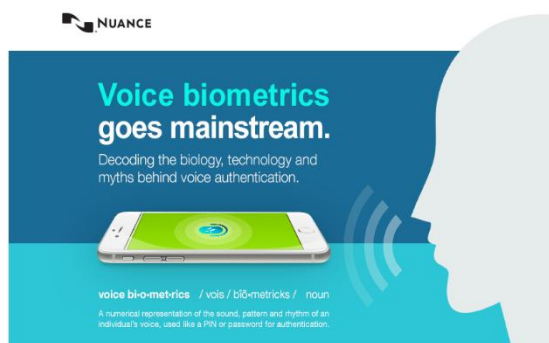


Figure 4: Voice biometrics

It is a form of authentication allowing your assistant to identify your voice and respond only to your commands. Siri actually has it, can teach you how to say the words "Hey Siri".

## III. COMPETITION

### 3.1 Google Now

Google Now was launched in 2012 and is a smart personal assistant to Google. It was first involved in Android 4.1, launched on July 9, 2012, and was first supported on the Google Nexus smartphone.

Google Now was found in the Google search option and can be used in a number of useful ways. Yes, it can create memories or answer basic questions like today's weather or the names of the movies that won the Oscar last year. In addition, Google Now is a virtual assistant that shows you relevant and up-to-date information as soon as you know more about yourself and how to use the phone.

### 3.2 Cortana

Windows 10 includes a collaborative personal assistant called Cortana. A digital assistant is set up with functions. For planning Cortana is the name of the interactive personal assistant built into Windows 10. You can give instructions and speak to them using your voice or typing.

Cortana, named after its fictional counterpart in the Halo video game series, takes notes, instructions, and offers calendar notifications and reminders. But its true exceptional functionality, and on which Microsoft relies deeply, is the possibility of having occasional conversations with the users. What Microsoft calls "chitchat".

### 3.3 Facebook arrives

And now the world's largest social network has added an IPA voice to its news service. Facebook Messenger is testing a new service called —M.David Marcus, director of Facebook Messenger, said: —M can actually do things for you. He can buy items, have gifts delivered to your loved ones, book restaurants, organize trips, appointments and much more.



Figure 5: Competitions

### 3.4 Google Assistant

Google has been integrating a voice search function in its applications for Android and iOS for some time. for assistance with the Chrome web browser. Amazon recently launched its new Echo speaker system, which includes the Alexa voice assistant. The Echo is currently only available in the United States. However, we spent a few days with the new iPhone SE, Windows Lumia 950 and the Google app to see how the different voice assistants handled a variety of requirements and commands.

### 3.5 Siri

Siri has made great strides in recent years and has become an awesome digital assistant that performs all kinds of tasks on your iOS devices, on the latest Apple TV and also on the Mac. This last step is long overdue: the absence of Siri on the Mac has been a glaring error for years, especially since Microsoft has been using its own Cortana language technology on Windows PCs since the launch of Windows 10 the year last. You can also use Cortana on the latest Lumia Windows phones, and there are other rivals lining up against Siri.

### IV. CONCLUSION

Siri supports a variety of user commands, including performing actions on the phone, checking basic information, scheduling events and reminders, managing device settings,

browsing the Internet, browsing areas, finding entertainment information and use iOS Combined Applications. For example, it can perform tasks on behalf of the user, or it can start obtaining user information like Google Now does, and then use that information to perform user tasks.

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