

Kingdom of Saudi Arabia  
Ministry of Education  
Prince Sattam bin Abdulaziz University  
College of Science and Humanities - Al- Aflaj  
Department of computer science



المملكة العربية السعودية  
وزارة التعليم  
جامعة الأمير سطام بن عبد العزيز  
كلية العلوم والدراسات الإنسانية – الأفلاج  
قسم علوم الحاسب

# Arabic Spoken Language Identification System

## Submitted by:

Zeyad Sulalman Alhoti	438850187
Ibrahim Abdulmajeed Alsaif	439050466
Mohammed Ibrahim Alabdulhadi	441850756

## Supervised by:

Dr .Mohammed Alatiyyah

Department of Computer Science

Rajab,1443 H

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# Chapter 1

## Chapter1 : introduction

### 1.1 Problem statement(إبراهيم)

Many voice recognition applications are not specialized in recognizing the voice of the Quran reader, in this project we will solve the problem of these applications by collecting certain data about Quran readers and identifying them. Through voice recognition algorithms.

### 1.2 Proposed system(زياد)

The application contains many services available to users for free, and special work will be done to provide this application to meet the needs of users who are searching for the voice of a specific reciter and the verse in the Book of God Almighty, so that the process of searching and extracting the reader is a quick process in terms of the algorithms provided, and also It will provide some services such as the Noble Qur'an, hadiths of the Prophet, prayer times, morning and evening remembrances, and the direction of the qiblah.

### 1.3 Project plan(محمد)

In the section the tasks will be divided into weeks to complete this project according to a specific time plan

Task name	WEEK 1	WEEK 2	WEEK 3	WEEK 4	WEEK 5	WEEK 6	WEEK 7	WEEK 8	WEEK 9	WEEK 10	WEEK 11	WEEK 12	WEEK 13	WEEK 14	WEEK 15	WEEK 16
Chapter1 : introduction																
Chapter 2: Literature Review																
Chapter 3: requirements																
Chapter 4: System design																
Chapter 5: Conclusion																

### 1.4 conclusion

# Chapter 2

## Chapter 2: Literature Review

In this chapter, the steps taken by the researcher in studying and selecting research samples and the principles he followed in applying the research in its practical framework are reviewed. And previous studies that are related to the research topic, which number four research

### 2.1 introduction (محمد ال عبد الهادي)

in section 2.2 will talk about the application are similar to our application, and also in section 2.3 will talk about algorithm are used in Identification who speakers and also in section 2.4 will talk about what tools are used in Features extraction and also in section 2.5 will talk determine the proposal system are solve the problem and also in section 2.6 will be compared between similar to our application, in finally the chapter will write conclusion.

### 2.2 application (محمد ال عبد الهادي)

In this section, we will talk about the applications that are similar to our applications, and we will explore each application and its features

#### 2.2.1 Soundhound (محمد ال عبد الهادي)



SoundHound: has applied audio processing and machine learning on millions of songs to extract features that are characteristic of each song, this is used to identify who speakers, the application works with natural language understanding technology.

#### Features of the SoundHound App

- Immediately identifies the song.
- Extract words from audio.
- Getting to know the Quran reciter but not well

#### Disadvantages of the SoundHound app

- Doesn't always play the correct song
- Has a slight learning curve.
- Does not recognize the sound in Arabic well

### 2.2.2 Shazam(إبراهيم السيف)



#### **Definition of Shazam application:-**

Shazam is an application that can identify music, movies, TV shows and clips in general by taking a sample of the audio clip, and this is done using the device's microphone.

#### **Who are the users of the application?:-**

Users of the Shazam application are the ones who want to find the name of the music or audio track that was searched, the Shazam application allows them to find the name of the music or audio track that they want.

#### **Shazam application advantages and disadvantages:-**

- **Advantages:**
  - ❖ easy to use.
  - ❖ Easy to discover music.
  - ❖ Recognizes the voice in ten second.
- **Disadvantages:**
  - ❖ The user can not sing the song and search for it.
  - ❖ It is not easy to recognize the reader.

#### **Technology used in Shazam application:-**

The Shazam application uses the microphone of the mobile phone or the device in which the application is located to identify the audio clip, and Shazam uses fingerprint technology to puts it in a graph through which the audio clip is fragmented and searched in databases.

### 2.2.3 MusixMatch(زياد الحوطي)



#### **How does the program work and how does it work?**

A program that can use some algorithms to obtain music through the microphone, after which it is read and extracted the results from the sounds of the Qur'an, poem or music in general.

Who is using the app or who needs it?

Those who use the app or who need it are people who have some music and want to know more about it.

Features and Disadvantages:

-Some of the features

- Some words can be captured in offline mode.
- Tracking the fast download feature of the subscribed user.
- Can read static characters from within a page.

-Some of the Disadvantages

- Sometimes the lyrics are not accurate.
- Classical music instruments cannot be read.
- It may not be possible to get all the lyrics correctly.



#### 2.2.4 Rateel (محمد ال عبد الهادي)



Rateel : Application to identify the reader of the Qur'an, use the Application who want to search for the voice of the reciter of the Qur'an..

##### Features of the Rateel App

- Get to know the reciter of the Qur'an

##### Disadvantages of the Rateel app

- Does not recognize the reader in the short voice
- It takes a long time to get to know the reader
- Has a slight learning curve.





## 2.3 Algorithms

## 2.4 Features extraction

## 2.5 Proposal System

This system aims to identify and know the voice of the reciters in the Qur'an and make this application recognize quickly and correctly and make the application learn to help identify the new reader

## 2.6 Comparison of the Research

	SoundHound 	Shazam 	MusixMatch 	Rateel 
recognition speed	✓	✓	✓	
Arabic speaker recognition	✓	✓	✓	✓
Often recognized correctly		✓	✓	
recognition the reader of the Qur'an	✓	✓	✓	✓
high learning curve		✓		
easy to use.	✓	✓	✓	

## 2.7 Conclusion

# Chapter 3

## Chapter 3: requirements:(ابراهيم)

In this chapter, we will talk about the functional and non-functional requirements of the proposed system and user, what quality is required of the system, and what is the response time.

### 3.1 Functional requirements:(ابراهيم)

They are the features and functions of the system that the system developer must implement to enable the user to use the system as required. The functional requirements are divided into two parts:

- 1- User requirements.
- 2- System requirements.

In this section of the chapter we will talk about what are the user requirements and what are the system requirements.

#### 3.1.1 User requirements:(ابراهيم)

User requirements are what the user shall or should have to use the system as required, in this section we will review the points of the user requirements:

- 1- The user shall have the microphone.
- 2- The user shall be connected to the internet.
- 3- The user shall have small clip from the voice of his Quran reader.
- 4- The user must test specific Quran readers.
- 5- The user should test the system in a quiet place to capture the voice of the reader.

#### 3.1.2 System requirements

### **3.2 non - Functional requirements(محمد)**

In the non-functional requirements we talk about additional features of the program, such as Quality and response time, which are requirements for the overall quality of the program

#### **3.2.1 Quality**

It is the quality in extracting the correct and accurate reciter of the Qur'an.

#### **3.2.2 response time**

It is the response time of the program through sound and recognition of the reader.