

HUMAN BEHAVIOUR
RECOGNITION,
IDENTIFICATION,
AND COMPUTER
INTERACTION

Edited by

Othman Omran Khalifa, B.Sc., M.Sc., Ph.D.,
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International Islamic University Malaysia

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Chapter 31

Arabic Automatic Continuous Speech Recognition Systems

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31.1. Introduction

Arabic language is the largest Semitic language which is still in existence and one of the six official languages of the United Nations (UN). The number of first language speakers of Arabic exceeds 250 million, whereas its number of second language speakers can reach four times the number of first language speakers. It is the official language in 21 countries situated in Levant, Gulf, and Africa. Arabic language is ranked as fourth after Mandarin, Spanish and English in terms of the number of first language speakers [1]. In spite of its importance, its research is lacking in many aspects and research effort on Arabic ASR still requires more emphasis worldwide. Standard Arabic and Dialectal Arabic (DA) are the two major forms of Arabic language. Standard Arabic includes both the Classical Arabic (CA) and the Modern Standard Arabic (MSA). On the other hand, DA which varies from one country to another and includes the daily spoken Arabic language deviates from the Standard Arabic and sometimes more than one dialect can be found within a country [1].

MSA is the current formal linguistic standard of Arabic language, which is widely taught in schools and universities, and often used in the office and the media. MSA is also considered as the only acceptable form of Arabic language for all native speakers [1].

As recently, the research community has witnessed an improvement in the performance of ASR systems, there is an increasingly widespread use of this technology for several languages of the world. Similarly, research interests have grown significantly in the past few years for Arabic ASR research. It is noticed that Arabic ASR research is not only conducted and investigated by researchers in the Arab world, but also by many others located in different parts of the world especially the western countries.