

Contents

Part I Pre-processing

- 1 An Assessment of Arabic Handwriting Recognition Technology 3**
Sargur N. Srihari and Gregory Ball
- 2 Layout Analysis of Arabic Script Documents 35**
Syed Saqib Bukhari, Faisal Shafait, and Thomas M. Breuel
- 3 A Multi-stage Approach to Arabic Document Analysis 55**
Eugene Borovikov and Ilya Zavorin
- 4 Pre-processing Issues in Arabic OCR 79**
Zhixin Shi, Srirangaraj Setlur, and Venu Govindaraju
- 5 Segmentation of Ancient Arabic Documents 103**
Abdel Belaïd and Nazih Ouwayed
- 6 Features for HMM-Based Arabic Handwritten Word Recognition Systems 123**
Laurence Likforman-Sulem, Ramy Al Hajj Mohammad, Chafic Mokbel, Fares Menasri, Anne-Laure Bianne-Bernard, and Christopher Kermorvant

Part II Recognition

- 7 Printed Arabic Text Recognition 147**
Irfan Ahmed, Sabri A. Mahmoud, and Mohammed Tanvir Parvez
- 8 Handwritten Arabic Word Recognition Using the *IFN/ENIT-database* 169**
Mario Pechwitz, Haikal El Abed, and Volker Märgner
- 9 RWTH OCR: A Large Vocabulary Optical Character Recognition System for Arabic Scripts 215**
Philippe Dreuw, David Rybach, Georg Heigold, and Hermann Ney

10	Arabic Handwriting Recognition Using Bernoulli HMMs	255
	Ihab Alkhoury, Adrià Giménez, and Alfons Juan	
11	Handwritten Farsi Word Recognition Using Hidden Markov Models	273
	Puntis Jifroodian Haghighi and Ching Y. Suen	
12	Offline Arabic Handwriting Recognition with Multidimensional Recurrent Neural Networks	297
	Alex Graves	
13	Application of Fractal Theory in Farsi/Arabic Document Analysis	315
	Saeed Mozaffari	
14	Multi-stream Markov Models for Arabic Handwriting Recognition	335
	Yousri Kessentini, Thierry Paquet, and AbdelMajid Ben Hamadou	
15	Toward Distributed Cursive Writing OCR Systems Based on a Combination of Complementary Approaches	351
	Maher Khemakhem and Abdelfettah Belghith	

Part III Evaluation

16	Data Collection and Annotation for Arabic Document Analysis . . .	375
	Ilya Zavorin and Eugene Borovikov	
17	Arabic Handwriting Recognition Competitions	395
	Volker Märgner and Haikal El Abed	
18	Benchmarking Strategy for Arabic Screen-Rendered Word Recognition	423
	Fouad Slimane, Slim Kanoun, Jean Hennebert, Rolf Ingold, and Adel M. Alimi	

Part IV Applications

19	A Robust Word Spotting System for Historical Arabic Manuscripts	453
	Mohamed Cheriet and Reza Farrahi Moghaddam	
20	Arabic Text Recognition Using a Script-Independent Methodology: A Unified HMM-Based Approach for Machine-Printed and Handwritten Text	485
	Premkumar Natarajan, Rohit Prasad, Huaigu Cao, Krishna Subramanian, Shirin Saleem, David Belanger, Shiv Vitaladevuni, Matin Kamali, and Ehry MacRostie	

21	Arabic Handwriting Recognition Using VDHMM and Over-segmentation	507
	Amlan Kundu and Tom Hines	
22	Online Arabic Databases and Applications	541
	Houcine Boubaker, Abdelkarim Elbaati, Najiba Tagougui, Haikal El Abed, Monji Kherallah, and Adel M. Alimi	
23	On-line Arabic Handwritten Word Recognition Based on HMM and Combination of On-line and Off-line Features	559
	Sherif Abdelazeem, Hesham M. Eraqi, and Hany Ahmed	
	Index	587

Guide to OCR for Arabic Scripts

Märgner, V.; El Abed, H. (Eds.)

2012, XX, 592 p., Hardcover

ISBN: 978-1-4471-4071-9