

Preface

The use of computers to recognize humans from physical and behavioral traits dates back to the digital computer evolution of the 1960s. But even after decades of research and hundreds of major deployments, the field of biometrics remains fresh and exciting as new technologies are developed and old technologies are improved and fielded in new applications. World-wide over the past few years, there has been a marked increase in both government and private sector interest in large-scale biometric deployments for accelerating human-machine processes, efficiently delivering human services, fighting identity fraud and even combating terrorism. The purpose of this book is to explore the current state of the art in biometric *systems* and it is the system aspect that we have wished to emphasize.

By their nature, biometric technologies sit at the exact boundary of the human-machine interface. But like all technologies, by themselves they can provide no value until deployed in a *system* with support hardware, network connections, computers, policies and procedures, all tuned together to work with *people* to improve some real business process within a social structure.

In this book, we bring together some of the most respected and experienced international researchers and practitioners in the field to look closely at biometric systems from many disciplinary angles. We focus on the technologies of fingerprint, iris, face and speaker recognition, how those technologies have evolved, how they work, and how well they work as determined in recent test programs. We look at the challenges of designing and deploying biometrics in people-centered systems, particularly when those systems become large. We conclude with discussions on the legal and privacy issues of biometric deployments from both European and US perspectives. We hope you find this book valuable in understanding both the historical accomplishments and remaining challenges in this fascinating field.

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Biometric Systems

Technology, Design and Performance Evaluation

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