Advances in Computer Vision and Pattern Recognition

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Handbook of Biometrics for Forensic Science

Springer

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Preface

Forensic Biometrics is a relatively novel discipline with a long-standing history. Even though this assertion may seem contradictory, it is true that biometric samples have been used in forensic examination since many decades. However, the systematic adoption of biometric technologies for criminal investigations and the incorporation in forensic processes is relatively new. In this regard, a considerable effort has been performed in the past 4 years by the European Union COST Action IC1106 "Integrating Biometrics and Forensics for the Digital Age."

The COST IC1106 research consortium is composed of over 40 members, research institutions, and forensic laboratories mainly from Europe and also from Australia, China, and USA. Aim of the Action has been to promote synergies between the biometrics recognition and the forensics science communities. This was achieved by means of innovative networking and scientific exchange. Most of the chapters making this edited volume are the outcome of this scientific collaboration.

Today's digital era is providing not only new computing solutions to assist forensics but also new threats and challenges, which cannot be solved with traditional approaches. These include identity-related scenarios such as attacks on security systems and the identification of abnormal/dangerous behaviors from remote cameras. New identification technologies and pattern recognition algorithms offer ways to provide proof of identity in these cases.

This book is the outcome of a strong new interdisciplinary community, which is establishing and disseminating good practice, and is stimulating novelty and interdisciplinarity in exploiting scientific possibilities.

While this trend deserves a growing attention, a strong impact is expected in many forensic scenarios, including identification at sensitive border crossing, analysis of video traces from surveillance cameras, and providing proof of evidence in court cases. This book presents a wide and in-depth view of the most advanced biometric technologies applied and purposively developed to forensic cases.

A multiview approach is presented to the reader, with each chapter being designed to cover a different subject written by authors from different research institutions, and the objective of covering the subject from different perspectives.

This comprehensive, innovative, state-of-the-art volume is designed to form and inform professionals, young researchers, and graduate students in the most advanced forensic biometrics technologies.

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