

Introduction To Biometrics English Edition

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Criminalistics Laboratory Manual Springer Nature

This book addresses the use of biometrics – including fingerprint identification, DNA identification and facial recognition – in the criminal justice system: balancing the need to ensure society is protected from harms, such as crime and terrorism, while also preserving individual rights. It offers a comprehensive discussion of biometric identification that includes a consideration of: basic scientific principles, their historical development, the perspectives of political philosophy, critical security and surveillance studies; but especially the relevant law, policy and regulatory issues. Developments in key jurisdictions where the technology has been implemented, including the United Kingdom, United States, Europe and Australia, are examined. This includes case studies relating to the implementation of new technology, policy, legislation, court judgements, and where available, empirical evaluations of the use of biometrics in criminal justice systems. Examples from non-western areas of the world are also considered. Accessibly written, this book will be of interest to undergraduate, postgraduate and research students, academic researchers, as well as professionals in government, security, legal and private sectors.

Handbook of Fingerprint Recognition Oxford University Press, USA

Work with common biometrics such as face, fingerprint, and iris recognition for business and personal use to ensure secure identification and authentication for fintech, homes, and computer systems Key FeaturesExplore the next iteration of identity protection and overcome real-world challengesUnderstand different biometric use cases to deploy a large-scale biometric systemCurated by renowned security ambassador and experienced author Lisa BockBook Description Biometric technologies provide a variety of robust and convenient methods to securely identify and authenticate an individual. Unlike a password or smart card, biometrics can identify an attribute that is not only unique to an individual, but also eliminates any possibility of duplication. Identity Management with Biometrics is a solid introduction for anyone who wants to explore biometric techniques, such as fingerprint, iris, voice, palm print, and facial recognition. Starting with an overview of biometrics, you'll learn the various uses and applications of biometrics in fintech, buildings, border control, and many other fields. You'll understand the characteristics of an optimal biometric system and then review different types of errors and discover the benefits of multi-factor authentication. You'll also get to grips with analyzing a biometric system for usability and accuracy and understand the process of implementation, testing, and deployment, along with addressing privacy concerns. The book outlines the importance of protecting biometric data by using encryption and shows you which factors to consider and how to analyze them before investing in biometric technologies. By the end of this book, you'll be well-versed with a variety of recognition processes and be able to make the right decisions when implementing biometric technologies. What you will learnReview the advantages and disadvantages of biometric technologyUnderstand the characteristics of an optimal biometric systemDiscover the uses of biometrics and where they are usedCompare different types of errors and see how to tune your systemUnderstand the benefits of multi-factor authenticationWork with commonly used biometrics such as face, fingerprint, and irisAnalyze a biometric system for usability and accuracyAddress privacy concerns and get a glimpse of the future of biometricsWho this book is for Identity Management with Biometrics is for IT managers, security professionals, students, teachers, and anyone involved in selecting, purchasing, integrating, or securing a biometric system. This book will help you understand how to select the right biometric system for your organization and walk you through the steps for implementing identity management and authentication. A basic understanding of biometric authentication techniques, such as fingerprint and facial recognition, and the importance of providing a secure method of authenticating an individual will help you make the most of the book.

Introducing Biometric Technology in Elections Springer Nature

Forest Biometrics presents the methods of mathematical statistics and biometrics that are significant to forestry. This book explores other fields related to forestry, which are explained with the help of a large number of practical examples. Organized into 25 chapters, this book starts with an overview of the variety of data that play a significant role in forest management, including the age of trees, the damage caused by storms, the fluctuation of timber prices, bark beetle infestation, and timber volume. This text then examines the factors that are responsible for a random distribution of the values in biological experimentation. Other chapters consider the important advantages of sample surveys compared to complete enumerations, include cheaper samples, wider applicability, quick results, and greater accuracy. The final chapter deals with the factors to be considered in determining the best time for harvesting of timber. This book is a valuable resource for students, research project leaders, and practical workers.

The Biometric Industry Report - Forecasts and Analysis to 2006 Duke University Press

A credible voter register gives legitimacy to the electoral process and helps prevent electoral fraud. However, voter registration remains a complex and contested task. It is one of the most important activities that an electoral management body needs to conduct, but it is also one of the most costly in terms of both time and resources. Many countries that face challenges in creating an accurate voter register are considering reforming their voter registration systems through the introduction of biometric technologies. The drive towards biometrics has been facilitated by its largely apolitical nature. Investing in high-tech solutions allows stakeholders to demonstrate their commitment to resolving electoral problems. At the same time, expectations on biometric solutions may be exaggerated. This guide provides an overview of key concepts and considerations for all stakeholders involved in discussions about the application of biometrics in elections, both for voter registration before an election and for voter verification at polling stations on election day.

Objective Biometric Methods for the Diagnosis and Treatment of Nervous System Disorders IGI Global

Machine Learning for Biometrics: Concepts, Algorithms and Applications highlights the fundamental concepts of machine learning, processing and analyzing data from biometrics and provides a review of intelligent and cognitive learning tools which can be adopted in this direction. Each chapter of the volume is supported by real-life case studies, illustrative examples and video demonstrations. The book elucidates various biometric concepts, algorithms and applications with machine intelligence solutions, providing guidance on best practices for new technologies such as e-health solutions, Data science, Cloud computing, and Internet of Things, etc. In each section, different machine learning concepts and algorithms are used, such as different object detection techniques, image enhancement techniques, both global and local feature extraction techniques, and classifiers those are commonly used data science techniques. These biometrics techniques can be used as tools in Cloud computing, Mobile computing, IOT based applications, and e-health care systems for secure login, device access control, personal recognition and surveillance. Covers different machine intelligence concepts, algorithms and applications in the field of cybersecurity, e-health monitoring, secure cloud computing and secure IOT based operations Explores advanced approaches to improve recognition performance of biometric systems with the use of recent machine intelligence techniques Introduces detection or segmentation techniques to detect biometric characteristics from the background in the input sample

Fingerprint No. 2 Rutgers University Press

Biometric recognition, or simply biometrics, is the science of establishing the identity of a person based on physical or behavioral attributes. It is a rapidly evolving field with applications ranging from securely accessing one's computer to gaining entry into a country. While the deployment of large-scale biometric systems in both commercial and government applications has increased the public awareness of this technology, "Introduction to Biometrics" is the first textbook to introduce

the fundamentals of Biometrics to undergraduate/graduate students. The three commonly used modalities in the biometrics field, namely, fingerprint, face, and iris are covered in detail in this book. Few other modalities like hand geometry, ear, and gait are also discussed briefly along with advanced topics such as multibiometric systems and security of biometric systems. Exercises for each chapter will be available on the book website to help students gain a better understanding of the topics and obtain practical experience in designing computer programs for biometric applications. These can be found at: <http://www.csee.wvu.edu/~ross/BiometricsTextBook/>. Designed for undergraduate and graduate students in computer science and electrical engineering, "Introduction to Biometrics" is also suitable for researchers and biometric and computer security professionals.

Fingerprints BoD - Books on Demand

Biometrics - the physiological and/or behavioural characteristics that can be used to verify the identity of an individual - are no longer just being used in high security locations; they are now in use in major, mainstream government and commercial applications. Since September 11, the heightened awareness of security issues is driving forward the adoption of biometrics within numerous application environments. Coupled with a dramatic decrease in the price of such systems and the formulation of comprehensive industry standards, the market looks set for rapid growth over the next 5 years. The second edition of The Biometric Industry Report - Forecasts and Analysis to 2006 examines the current use and future growth of biometrics. It analyses the trends in markets, technologies and industry structure and profiles the major players. The report provides key market statistics and forecasts essential for companies to plot their future growth strategies. For a PDF version of the report please call Sarah Proom on +44 (0) 1865 843181 for price details.

Identity Management with Biometrics Elsevier

Introduction to Computer Security draws upon Bishop's widely praised Computer Security: Art and Science, without the highly complex and mathematical coverage that most undergraduate students would find difficult or unnecessary. The result: the field's most concise, accessible, and useful introduction. Matt Bishop thoroughly introduces fundamental techniques and principles for modeling and analyzing security. Readers learn how to express security requirements, translate requirements into policies, implement mechanisms that enforce policy, and ensure that policies are effective. Along the way, the author explains how failures may be exploited by attackers--and how attacks may be discovered, understood, and countered. Supplements available including slides and solutions.

Biometric Authentication Elsevier

Biometric Systems provides practitioners with an overview of the principles and methods needed to build reliable biometric systems. It covers three main topics: key biometric technologies, design and management issues, and the performance evaluation of biometric systems for personal verification/identification. The four most widely used technologies are focused on - speech, fingerprint, iris and face recognition. Key features include: in-depth coverage of the technical and practical obstacles which are often neglected by application developers and system integrators and which result in shortfalls between expected and actual performance; and protocols and benchmarks which will allow developers to compare performance and track system improvements.

Advanced Biometric Technologies OUP Oxford

Could the story of mankind be far older than we have previously believed? Using tools as varied as archaeo-astronomy, geology, and computer analysis of ancient myths, Graham Hancock presents a compelling case to suggest that it is. Graham Hancock is featured in Ancient Apocalypse, a Netflix original docuseries. "A fancy piece of historical sleuthing . . . intriguing and entertaining and sturdy enough to give a long pause for thought."—Kirkus Reviews In Fingerprints of the Gods, Hancock embarks on a worldwide quest to put together all the pieces of the vast and fascinating jigsaw of mankind's hidden past. In ancient monuments as far apart as Egypt's Great Sphinx, the strange Andean ruins of Tihuanaco, and Mexico's awe-inspiring Temples of the Sun and Moon, he reveals

not only the clear fingerprints of an as-yet-unidentified civilization of remote antiquity, but also startling evidence of its vast sophistication, technological advancement, and evolved scientific knowledge. A record-breaking number one bestseller in Britain, *Fingerprints of the Gods* contains the makings of an intellectual revolution, a dramatic and irreversible change in the way that we understand our past—and so our future. And *Fingerprints of God* tells us something more. As we recover the truth about prehistory, and discover the real meaning of ancient myths and monuments, it becomes apparent that a warning has been handed down to us, a warning of terrible cataclysm that afflicts the Earth in great cycles at irregular intervals of time—a cataclysm that may be about to recur. “Readers will hugely enjoy their quest in these pages of inspired storytelling.”—The Times (UK)

Biometrics: a Very Short Introduction Academic Press

Focusing in particular on the European borders, this volume brings together an interdisciplinary group of academics to consider questions of immigration and the free movement of people, linking control within the state to the role of the police and internal security. The contributors all take as the point of departure the significance of European governmentality within the Foucauldian meaning as opposed to the European governance perspective which is already well represented in the literature. They discuss the relation between control of borders, introduction of biometrics and freedom. The book makes available in English an analysis of an important and politically highly charged field from a major French critical perspective. It draws on different disciplines including law, politics, international relations and philosophy.

Fingerprints of the Gods Springer Science & Business Media

An informative, engaging introduction to biometrics, how it's used, and why it matters

Design and Implementation of Healthcare Biometric Systems Routledge

This book highlights the field of selfie biometrics, providing a clear overview and presenting recent advances and challenges. It also discusses numerous selfie authentication techniques on mobile devices. Biometric authentication using mobile devices is becoming a convenient and important means of verifying identity for secured access and services such as telebanking and electronic transactions. In this context, face and ocular biometrics in the visible spectrum has gained increased attention from the research community. However, device mobility and operation in uncontrolled environments mean that facial and ocular images captured with mobile devices exhibit substantial degradation as a result of adverse lighting conditions, specular reflections and motion and defocus blur. In addition, low spatial resolution and the small sensor of front-facing mobile cameras further degrade the sample quality, reducing the recognition accuracy of face and ocular recognition technology when integrated into smartphones. Presenting the state of the art in mobile biometric research and technology, and offering an overview of the potential problems in real-time integration of biometrics in mobile devices, this book is a valuable resource for final-year undergraduate students, postgraduate students, engineers, researchers and academics in various fields of computer engineering.

Biometrics, Crime and Security Routledge

This book brings together aspects of statistics and machine learning to provide a comprehensive guide to evaluating, interpreting and understanding biometric data. It naturally leads to topics including data mining and prediction to be examined in detail. The book places an emphasis on the

various performance measures available for biometric systems, what they mean, and when they should and should not be applied. The evaluation techniques are presented rigorously, however they are always accompanied by intuitive explanations. This is important for the increased acceptance of biometrics among non-technical decision makers, and ultimately the general public.

Biometric Systems CRC Press

For many designers, creating things by hand is a reaction to too much computer-based design. Since the first *Fingerprint* was published, ideas that were once on the fringe have begun to thrive in the mainstream. From typography and illustration to book-making and film titles, elements of handcraft have soaked into everyday life. *Fingerprint No. 2* reflects the evolution of those ideas. In this second volume, you'll still find plenty of projects created entirely without the aid of computer technology. But you'll also discover how designers are beginning to incorporate the two aesthetics—handmade and digital—in order to best communicate their message. A third, hybrid aesthetic is emerging, one that marries the technologies of the past and future into a vibrant, exciting present. Look inside to discover 133 projects and exclusive visual essays from leading designers, including Robynne Raye, Stefan Bucher and Christian Helms. These pieces of work prove that handmade elements are not only vital to excellent design, but often result in exceptional design. Listen for the pulse, which cannot be faked, forged, or falsified. Look for the finger print. It is the key to design's success.

Encyclopedia of Information Science and Technology, Second Edition John Wiley & Sons

A breakthrough approach to improving biometrics performance
Constructing robust information processing systems for face and voice recognition
Supporting high-performance data fusion in multimodal systems
Algorithms, implementation techniques, and application examples
Machine learning: driving significant improvements in biometric performance
As they improve, biometric authentication systems are becoming increasingly indispensable for protecting life and property. This book introduces powerful machine learning techniques that significantly improve biometric performance in a broad spectrum of application domains. Three leading researchers bridge the gap between research, design, and deployment, introducing key algorithms as well as practical implementation techniques. They demonstrate how to construct robust information processing systems for biometric authentication in both face and voice recognition systems, and to support data fusion in multimodal systems. Coverage includes: How machine learning approaches differ from conventional template matching
Theoretical pillars of machine learning for complex pattern recognition and classification
Expectation-maximization (EM) algorithms and support vector machines (SVM)
Multi-layer learning models and back-propagation (BP) algorithms
Probabilistic decision-based neural networks (PDNNs) for face biometrics
Flexible structural frameworks for incorporating machine learning subsystems in biometric applications
Hierarchical mixture of experts and inter-class learning strategies based on class-based modular networks
Multi-cue data fusion techniques that integrate face and voice recognition
Application case studies

Biometric Recognition CRC Press

In *The Social Life of Biometrics*, biometrics is loosely defined as a discrete technology of identification that associates physical features with a legal identity. Author George Grinnell considers the social and cultural life of biometrics by examining what it is asked to do, imagined to do, and its intended and unintended effects. As a human-focused account of technology, the book

contends that biometrics needs to be understood as a mode of thought that informs how we live and understand one another; it is not simply a neutral technology of identification. Placing our biometric present in historical and cultural perspective, *The Social Life of Biometrics* examines a range of human experiences of biometrics. It features individual stories from locations as diverse as Turkey, Canada, Qatar, Six Nations territory in New York State, Iraq, the skies above New York City, a university campus and Nairobi to give cultural accounts of identification and look at the ongoing legacies of our biometric ambitions. It ends by considering the ethics surrounding biometrics and human identity, migration, movement, strangers, borders, and the nature of the body and its coherence. How has biometric thought structured ideas about borders, race, covered faces, migration, territory, citizenship, and international responsibility? What might happen if identity was less defined by the question of “who’s there?” and much more by the question “how do you live?”

Effective Physical Security Packt Publishing Ltd

Reflecting new discoveries in fingerprint science, Lee and Gaensslen's *Advances in Fingerprint Technology*, Third Edition has been completely updated with new material and nearly double the references contained in the previous edition. The book begins with a detailed review of current, widely used development techniques, as well as some older, histo

Encyclopedia of Cryptography and Security Springer Science & Business Media

This book examines the proliferation of surveillance technologies—such as facial recognition software and digital fingerprinting—that have come to pervade our everyday lives. Often developed as methods to ensure “national security,” these technologies are also routinely employed to regulate our personal information, our work lives, what we buy, and how we live. *Forest Biometrics* International Institute for Democracy and Electoral Assistance (International IDEA)

As one of the most promising biometric technologies, vein pattern recognition (VPR) is quickly taking root around the world and may soon dominate applications where people focus is key. Among the reasons for VPR's growing acceptance and use: it is more accurate than many other biometric methods, it offers greater resistance to spoofing, it focuses on people and their privacy, and has few negative cultural connotations. *Vein Pattern Recognition: A Privacy-Enhancing Biometric* provides a comprehensive and practical look at biometrics in general and at vein pattern recognition specifically. It discusses the emergence of this reliable but underutilized technology and evaluates its capabilities and benefits. The author, Chuck Wilson, an industry veteran with more than 25 years of experience in the biometric and electronic security fields, examines current and emerging VPR technology along with the myriad applications of this dynamic technology. Wilson explains the use of VPR and provides an objective comparison of the different biometric methods in use today—including fingerprint, eye, face, voice recognition, and dynamic signature verification. Highlighting current VPR implementations, including its widespread acceptance and use for identity verification in the Japanese banking industry, the text provides a complete examination of how VPR can be used to protect sensitive information and secure critical facilities. Complete with best-practice techniques, the book supplies invaluable guidance on selecting the right combination of biometric technologies for specific applications and on properly implementing VPR as part of an overall security system.