Fingerprint Research Paper

An Introduction to Basic and Advanced Ridgeology
Postmortem Fingerprinting and Unidentified Human Remains
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An Introduction to Basic and Advanced Ridgeology Springer
A thumb print left at the scene of a grisly murder. Fingerprints taken from a getaway car used in a bank robbery. A palm print recovered from the shattered glass door of a burglarized home. Indeed, where crimes are committed, careless perpetrators will invariably leave behind the critical pieces of evidence—most likely in the form of fingerprints—needed to catch and convict them. But the science of fingerprint identification isn't always as cut and dry as detective novels and movies make it out to be. Quantitative-Qualitative Friction Ridge Analysis, a new book in the ongoing Practical Aspects of Criminal and Forensic Investigations series, examines the latest methods and techniques in the science of friction ridge identification, or ridgeology. David R. Ashbaugh examines every facet of the discipline, from the history of friction ridge identification and its earliest pioneers and researchers, to the scientific basis and the various steps of the identification process. The structure and growth of friction skin and how it can leave latent or visible prints are examined, as well as advanced identification methods in ridgeology, including Poroscopy, Edgeoscopy, Pressure Distortion and Complex or Problem Print Analysis. The book, which features several detailed illustrations and photographs, also includes a new method for Palmar Flexion Crease Identification (palm lines) designed by the author and which has helped solve several criminal cases where fingerprints were not available. For crime scene technicians, forensic identification specialists, or anyone else pursuing a career in forensic science, this book is arguably the definitive source in the science of friction ridge identification.
Postmortem Fingerprinting and Unidentified Human Remains Springer Nature
Scores of talented and dedicated people serve the forensic science community, performing vitally important work. However, they are often constrained by lack of adequate resources, sound policies, and national support. It is clear that change and advancements, both systematic and scientific, are needed in a number of forensic science disciplines to ensure the reliability of work, establish enforceable standards, and promote best practices with consistent application. Strengthening Forensic

Science in the United States: A Path Forward provides a detailed plan for addressing these needs and suggests the creation of a new government entity, the National Institute of Forensic Science, to establish and enforce standards within the forensic science community. The benefits of improving and regulating the forensic science disciplines are clear: assisting law enforcement officials, enhancing homeland security, and reducing the risk of wrongful conviction and exoneration. Strengthening Forensic Science in the United States gives a full account of what is needed to advance the forensic science disciplines, including upgrading of systems and organizational structures, better training, widespread adoption of uniform and enforceable best practices, and mandatory certification and accreditation programs. While this book provides an essential call-to-action for congress and policy makers, it also serves as a vital tool for law enforcement agencies, criminal prosecutors and attorneys, and forensic science educators.

Automated Fingerprint Identification Systems (AFIS) CRC Press

The idea of The Fingerprint Sourcebook originated during a meeting in April 2002. Individuals representing the fingerprint, academic, and scientific communities met in Chicago, Illinois, for a day and a half to discuss the state of fingerprint identification with a view toward the challenges raised by Daubert issues. The meeting was a joint project between the International Association for Identification (IAI) and West Virginia University (WVU). One recommendation that came out of that meeting was a suggestion to create a sourcebook for friction ridge examiners, that is, a single source of researched information regarding the subject. This sourcebook would provide educational, training, and research information for the international scientific community.

Biometric Recognition Springer Science & Business Media

A comprehensive review of the latest fingerprint development and imaging techniques With contributions from leading experts in the field, Fingerprint Development Techniques offers a comprehensive review of the key techniques used in the development and imaging of fingerprints. It includes a review of the properties of fingerprints, the surfaces that fingerprints are deposited on, and the interactions that can occur between fingerprints, surfaces and environments. Comprehensive in scope, the text explores the history of each process, the theory behind the way fingerprints are either developed or imaged, and information about the role of each of the chemical constituents in recommended formulations. The authors explain the methodology employed for carrying out comparisons of effectiveness of various development techniques that clearly demonstrate how to select the most effective approaches. The text also explores how techniques can be used in sequence and with techniques for recovering other forms of forensic evidence. In addition, the book offers a guide for the selection of fingerprint development techniques and includes information on the influence of surface contamination and exposure conditions. This important resource: Provides clear methodologies for conducting comparisons of fingerprint development technique effectiveness Contains in-depth assessment of fingerprint constituents and how they are utilized by development and imaging processes Includes background information on fingerprint chemistry Offers a comprehensive history, the theory, and the applications for a broader range of processes, including the roles of each constituent in reagent formulations Fingerprint Development Techniques offers a comprehensive guide to fingerprint development and imaging, building on much of the previously unpublished research of the Home Office Centre for Applied Science and Technology.

Advances in Biometrics National Academies Press

Fingerprint identification is the most efficient, rapid, and cost-effective forensic identification modality. Postmortem Fingerprinting and Unidentified Human Remains is a consolidated and thorough guide to the recovery, identification, and management of unidentified postmortem fingerprint records - topics from postmortem fingerprint processing to database submission and case management are discussed. Additionally, a postmortem processing workflow is described, which delineates various basic and advanced fingerprint recovery techniques used to acquire examination-quality records. Furthermore, Postmortem Fingerprinting and Unidentified Human Remains discusses the complexity of antemortem fingerprint databases and how to access each database for humanitarian purposes, bringing a modern value perspective to the topic.

Advances in Fingerprint Technology CRC Press

This book provides a thorough understanding of the integration of computational intelligence with information retrieval including content-based image retrieval using intelligent techniques, hybrid computational intelligence for pattern recognition, intelligent innovative systems, and protecting and analysing big data on cloud platforms. The book aims to investigate how computational intelligence frameworks are going to improve information retrieval systems. The emerging and promising state-of-the-art of human–computer interaction is the motivation behind this book. The book covers a wide range of topics, starting from the tools and languages of artificial intelligence to its philosophical implications, and thus provides a plethora of theoretical as well as experimental research, along with surveys and impact studies. Further, the book aims to showcase the basics of information retrieval and computational intelligence for beginners, as well as their integration, and challenge discussions for existing practitioners, including using hybrid application of augmented reality, computational intelligence techniques for recommendation systems in big data, and a fuzzy-based approach for characterization and identification of sentiments.

The Fingerprint Routledge

An authoritative survey of intelligent fingerprint-recognition concepts, technology, and systems is given. Editors and contributors are the leading researchers and applied R&D developers of this personal identification (biometric security) topic and technology. Biometrics and pattern recognition researchers and professionals will find the book an indispensable resource for current knowledge and technology in the field.

MHDW 2020 and 5G-PINE 2020, Neos Marmaras, Greece, June 5–7, 2020, Proceedings World Scientific

Fingerprints constitute one of the most important categories of physical evidence, and it is among the few that can be truly individualized. During the last two decades, many new and exciting developments have taken place in the field of fingerprint science, particularly in the realm of methods for developing latent prints and in the growth of imag

International Conference, ICB 2006, Hong Kong, China, January 5-7, 2006, Proceedings Nova Publishers

This book constitutes the refereed proceedings of the International Workshop on Multimedia Content Representation, Classification and Security, MRCS 2006. The book presents 100 revised papers together with 4 invited lectures. Coverage includes biometric recognition, multimedia content security, steganography, watermarking, authentication, classification for biometric recognition, digital watermarking, content analysis and representation, 3D object retrieval and classification, representation, analysis and retrieval in cultural heritage, content representation, indexing and retrieval, and more.

Automatic Fingerprint Recognition Systems Springer Science & Business Media

This title was first published in 2002: This field guide assesses two views of human error - the old view, in which human error becomes the cause of an incident or accident, or the new view, in which human error is merely a symptom of deeper trouble within the system. The two parts of this guide concentrate on each view, leading towards an appreciation of the new view, in which human error is the starting point of an investigation, rather than its conclusion. The second part of this guide focuses on the circumstances which unfold around people, which causes their assessments and actions to change accordingly. It shows how to "reverse engineer" human error, which, like any other componant, needs to be put back together in a mishap investigation.

Computational Intelligence for Information Retrieval Springer Research Paper (undergraduate) from the year 2014 in the subject Computer Science - Applied, Khulna University, course: Mathematics, language: English, abstract: Minutiae based feature extraction methods are used for fingerprint matching. This method is mainly depending on the characteristics of minutiae of the individuals. The minutiae are ridge endings or bifurcations on the fingerprints. Their coordinates and direction are most distinctive features to represent the fingerprint. Most fingerprint matching systems store only the minutiae template in the database for further usage. The conventional methods to utilize minutiae information are treating it as a point set and finding the matched points from different minutiae sets. This kind of minutiae-based fingerprint recognition/matching systems consists of two steps: minutiae extraction and minutiae matching. Image enhancement, histogram equalization, thinning, binarization, smoothing, block direction estimation, image segmantation, ROI extraction etc. are discussed in the minutiae extraction step. After the extraction of minutiae the false minutiae are removed from the extraction to get the accurate result. In the minutiae matching process, the minutiae features of a given fingerprint are compared with the minutiae template and the matched minutiae will be found out. The final template used for fingerprint matching is further utilized in the matching stage to enhance the system's performance. Two fingerprint images always give two different matrices, the matrix equalization method is also used for matching two fingerprint images after the final template.

Touchless Fingerprint Biometrics W. W. Norton & Company The past decade has seen a rapid growth in the demand for biometric-based - thentication solutions for a number of applications. With signi?cant advances in biometrictechnologyandanincreaseinthenumberofapplicationsincorporating biometrics, it is essential that we bring together researchers from academia and industry as well as practitioners to share ideas, problems and solutions for the development and successful deployment of state-of-the-art biometric systems. The InternationalConference onBiometric Authentication (ICBA 2004)was the?rst major gathering in the Asia-Paci?c region devoted to facilitating this interaction. We are pleased that this conference attracted a large number of high-quality research papers that will bene?t the international biometrics - search community. After a careful review of 157 submissions, 101 papers were acceptedeitherasoral(35)orposter(66)presentations. Inadditiontothesete- nical presentations, this conference also presented the results and summaries of threebiometric competitions: FingerprintVeri?cationCompetition (FVC 2004), Face Authentication Competition (FAC 2004), and Signature Veri?cation C- petition (SVC 2004). This conference provided a forum for the practitioners to discuss their practical experiences in applying the state-of-the-art biometric technologies which will further stimulate research in biometrics. We aregrateful to Jim L. Wayman, Edwin Rood, Raymond Wong, Jonathon Philips, andFrancisHoforacceptingourinvitationtogivekeynotetalksatICBA 2004. In addition, we would like to express our gratitude to all the contributors, reviewers, program committee and organizing committee members who made this a very successful conference. We also wish to acknowledge the Croucher Foundation, the International Association of Pattern Recognition, IEEE Hong Kong Section, the Hong Kong Polytechnic University, the National Natural S- ence Foundation in China, and Springer-Verlag for sponsoring this conference.

Trends in DNA Fingerprinting Research Academic Press Biometrics is a rapidly evolving field with applications ranging from accessing one's computer to gaining entry into a country. The deployment of large-scale biometric systems in both commercial and government applications has increased public awareness of this technology. Recent years have seen significant growth in biometric research resulting in the development of innovative sensors, new algorithms, enhanced test methodologies and novel applications. This book addresses this void by inviting some of the prominent researchers in Biometrics to contribute chapters describing the fundamentals as well as the latest innovations in their respective areas of expertise.

First International Conference, ICBA 2004, Hong Kong, China, July 15-17, 2004, Proceedings National Academies Press

Offering the first comprehensive analysis of touchless fingerprint-recognition technologies, Touchless Fingerprint Biometrics gives an overview of the state of the art and describes relevant industrial applications. It also presents new techniques to efficiently and effectively implement advanced solutions based on touchless fingerprinting.The most

Fingerprints and the Law Springer Nature

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

International Workshop, MRCS 2006, Istanbul, Turkey, September 11-13, 2006, Proceedings Springer Science & Business Media

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.

Proceedings of ICDSIA 2020 CRC Press

Biometrics is the study of methods for uniquely recognizing

humans based on one or more intrinsic physical or behavioral traits. After decades of research activities, biometrics, as a recognized scientific discipline, has advanced considerably both in practical technology and theoretical discovery to meet the increasing need of biometric deployments. In this book, the editors provide both a concise and accessible introduction to the field as well as a detailed coverage on the unique research problems with their solutions in a wide spectrum of biometrics research ranging from voice, face, fingerprint, iris, handwriting, human behavior to multimodal biometrics. The contributions also present the pioneering efforts and state-of-the-art results, with special focus on practical issues concerning system development. This book is a valuable reference for established researchers and it also gives an excellent introduction for beginners to understand the challenges.

Biometric Security Routledge

“A clear and crisply written account of machine intelligence, big data and the sharing economy. But McAfee and Brynjolfsson also wisely acknowledge the limitations of their futurology and avoid over-simplification.” —Financial Times In The Second Machine Age, Andrew McAfee and Erik Brynjolfsson predicted some of the far-reaching effects of digital technologies on our lives and businesses. Now they’ve written a guide to help readers make the most of our collective future. Machine | Platform | Crowd outlines the opportunities and challenges inherent in the science fiction technologies that have come to life in recent years, like self-driving cars and 3D printers, online platforms for renting outfits and scheduling workouts, or crowd-sourced medical research and financial instruments.

Data Science and Intelligent Applications Springer Science & Business Media

Since its publication, the first edition of Fingerprints and Other Ridge Skin Impressions has become a classic in the field. This second edition is completely updated, focusing on the latest technology and techniques—including current detection procedures, applicable processing and analysis methods—all while incorporating the expansive growth of literature on the topic since the publication of the original edition. Forensic science has been challenged in recent years as a result of errors, courts and other scientists contesting verdicts, and changes of a fundamental nature related to previous claims of infallibility and absolute individualization. As such, these factors represent a fundamental change in the way training, identifying, and reporting should be conducted. This book addresses these questions with a clear viewpoint as to where the profession—and ridge skin identification in particular—must go and what efforts and research will help develop the field over the next several years. The second edition introduces several new topics, including Discussion of ACE-V and research results from ACE-V studies Computerized marking systems to help examiners produce reports New probabilistic models and decision theories about ridge skin evidence interpretation, introducing Bayesnet tools Fundamental understanding of ridge mark detection techniques, with the introduction of new aspects such as nanotechnology, immunology and hyperspectral imaging Overview of reagent preparation and application Chapters cover all aspects of the subject, including the formation of friction ridges on the skin, the deposition of latent marks, ridge skin mark identification, the detection and enhancement of such marks, as well the recording of fingerprint evidence. The book serves as an essential reference for practitioners working in the field of fingermark detection and identification, as well as legal and police professionals and anyone studying forensic science with a view to understanding current thoughts and challenges in dactyloscopy.

Fingerprint Development Techniques Springer Nature

The FingerprintSourcebookCreateSpace

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