

Dlib Vs Opencv Face Detection Ny Hub Usa Buzz

Gain a working knowledge of advanced machine learning and explore Python's powerful tools for extracting data from images and videos Key Features Implement image classification and object detection using machine learning and deep learning Perform image classification, object detection, image segmentation, and other Computer Vision tasks Crisp content with a practical approach to solving real-world problems in Computer Vision Book Description Python is the ideal programming language for rapidly prototyping and developing production-grade codes for image processing and Computer Vision with its robust syntax and wealth of powerful libraries. This book will help you design and develop production-grade Computer Vision projects tackling real-world problems. With the help of this book, you will learn how to set up Anaconda and Python for the major OSes with cutting-edge third-party libraries for Computer Vision. You'll learn state-of-the-art techniques for classifying images, finding and identifying human postures, and detecting faces within videos. You will use powerful machine learning tools such as OpenCV, Dlib, and TensorFlow to build exciting projects such as classifying handwritten digits, detecting facial features, and much more. The book also covers some advanced projects, such as reading text from license plates from real-world images using Google's Tesseract software, and tracking human body poses using DeeperCut within TensorFlow. By the end of this book, you will have the expertise required to build your own Computer Vision projects using Python and its associated libraries. What you will learn Install and run major Computer Vision packages within Python Apply powerful support vector machines for simple digit classification Understand deep learning with TensorFlow Build a deep learning classifier for general images Use LSTMs for automated image captioning Read text from real-world images Extract human pose data from images Who this book is for Python programmers and machine learning developers who wish to build exciting Computer Vision projects using the power of machine learning and OpenCV will find this book useful. The only prerequisite for this book is that you should have a sound knowledge of Python programming.

This two-volume set constitutes the refereed proceedings of the 15th International Conference on Universal Access in Human-Computer Interaction, UAHCI 2021, held as part of the 23rd International Conference, HCI International 2021, held as a virtual event, in July 2021. The total of 1276 papers and 241 posters included in the 39 HCII 2021 proceedings volumes was carefully reviewed and selected from 5222 submissions. UAHCI 2021 includes a total of 84 papers; they focus on topics related to universal access methods, techniques and practices, studies on accessibility, design for all, usability, UX and technology acceptance, emotion and behavior recognition for universal access, accessible media, access to learning and education, as well universal access to virtual and intelligent assistive environments.

This book presents on the latest research findings, and innovative research methods and development techniques related to the emerging areas of broadband and wireless computing from both theoretical and practical perspectives. Information networking is evolving rapidly with various kinds of networks with different characteristics emerging and being integrated into heterogeneous networks. As a result, a number of interconnection problems can occur at different levels of the communicating entities and communication networks' hardware and software design. These networks need to manage an increasing usage demand, provide support for a significant number of services, guarantee their QoS, and optimize the network resources. The success of all-IP networking and wireless technology has changed the way of life for people around the world, and the advances in electronic integration and wireless communications will pave the way for access to the wireless networks on the fly. This in turn means that all electronic devices will be able to exchange the information with each other in a ubiquitous way whenever necessary.

"This book focuses on new and original research ideas and findings in three broad areas: computing, analytics, and networking and their potential applications in the various domains of engineering - an emerging, interdisciplinary area in which a wide range of theories and methodologies are being investigated and developed to tackle complex and challenging real-world problems. The book also features keynote presentations and papers from the International Conference on Computing Analytics and Networking (ICCAN 2019), which offers an open forum for scientists, researchers and technocrats in academia and industry from around the globe to present and share state-of-the-art concepts, prototypes, and innovative research ideas in diverse fields. Providing inspiration for postgraduate students and young researchers working in the field of computer science & engineering, the book also discusses hardware technologies and future communication technologies, making it useful for those in the field of electronics." -- Prové de l'editor.

Over 50 problems solved with classical algorithms + ML / DL models KEY FEATURES ? Problem-driven approach to practice image processing. ? Practical usage of popular Python libraries: Numpy, Scipy, scikit-image, PIL and SimpleITK. ? End-to-end demonstration of popular facial image processing challenges using MTCNN and Microsoft's Cognitive Vision APIs. DESCRIPTION This book starts with basic Image Processing and manipulation problems and demonstrates how to solve them with popular Python libraries and modules. It then concentrates on problems based on Geometric image transformations and problems to be solved with Image hashing. Next, the book focuses on solving problems based on Sampling, Convolution, Discrete Fourier transform, Frequency domain filtering and image restoration with deconvolution. It also aims at solving Image enhancement problems using different algorithms such as spatial filters and create a super resolution image using SRGAN. Finally, it explores popular facial image processing problems and solves them with Machine learning and Deep learning models using popular python ML / DL libraries. WHAT YOU WILL LEARN ? Develop strong grip on the fundamentals of Image Processing and Image Manipulation. ? Solve popular Image Processing problems using Machine Learning and Deep Learning models. ? Working knowledge on Python libraries including numpy, scipy and scikit-image. ? Use popular Python Machine Learning packages such as scikit-learn, Keras and pytorch. ? Live

implementation of Facial Image Processing techniques such as Face Detection / Recognition / Parsing dlib and MTCNN. WHO THIS BOOK IS FOR This book is designed specially for computer vision users, machine learning engineers, image processing experts who are looking for solving modern image processing/computer vision challenges. TABLE OF CONTENTS 1. Chapter 1: Basic Image & Video Processing 2. Chapter 2: More Image Transformation and Manipulation 3. Chapter 3: Sampling, Convolution and Discrete Fourier Transform 4. Chapter 4: Discrete Cosine / Wavelet Transform and Deconvolution 5. Chapter 5: Image Enhancement 6. Chapter 6: More Image Enhancement 7. Chapter 7: Facial Image Processing

This book constitutes the proceedings of the 19th International Conference on Computer Information Systems and Industrial Management Applications, CISIM 2020, held in Bialystok, Poland, in October 2020. Due to the COVID-19 pandemic the conference has been postponed to October 2020. The 40 full papers presented together with 5 abstracts of keynotes were carefully reviewed and selected from 62 submissions. The main topics covered by the chapters in this book are biometrics, security systems, multimedia, classification and clustering, industrial management. Besides these, the reader will find interesting papers on computer information systems as applied to wireless networks, computer graphics, and intelligent systems. The papers are organized in the following topical sections: biometrics and pattern recognition applications; computer information systems and security; industrial management and other applications; machine learning and high performance computing; modelling and optimization.

This 2-volume set constitutes the refereed proceedings of the 9th Iberian Conference on Pattern Recognition and Image Analysis, IbPRIA 2019, held in Madrid, Spain, in July 2019. The 99 papers in these volumes were carefully reviewed and selected from 137 submissions. They are organized in topical sections named: Part I: best ranked papers; machine learning; pattern recognition; image processing and representation. Part II: biometrics; handwriting and document analysis; other applications.

The book is a compilation of selected papers from 2020 International Conference on Electrical and Electronics Engineering (ICEEE 2020) held in National Power Training Institute HQ (Govt. of India) on February 21 – 22, 2020. The work focuses on the current development in the fields of electrical and electronics engineering like power generation, transmission and distribution, renewable energy sources and technology, power electronics and applications, robotics, artificial intelligence and IoT, control, and automation and instrumentation, electronics devices, circuits and systems, wireless and optical communication, RF and microwaves, VLSI, and signal processing. The book is beneficial for readers from both academia and industry.

Each chapter in the book is an individual project and each project is constructed with step-by-step instructions, clearly explained code, and includes the necessary screenshots. You should have basic OpenCV and C/C++ programming experience before reading this book, as it is aimed at Computer Science graduates, researchers, and computer vision experts widening their expertise.

Third edition of International Conference on Intelligent Computing and Optimization and as a premium fruit, this book, pursue to gather research leaders, experts and scientists on Intelligent Computing and Optimization to share knowledge, experience and current research achievements. Conference and book provide a unique opportunity for the global community to interact and share novel research results, explorations and innovations among colleagues and friends. This book is published by SPRINGER, Advances in Intelligent Systems and Computing. Ca. 100 authors submitted full papers to ICO'2020. That global representation demonstrates the growing interest of the research community here. The book covers innovative and creative research on sustainability, smart cities, meta-heuristics optimization, cyber-security, block chain, big data analytics, IoTs, renewable energy, artificial intelligence, Industry 4.0, modeling and simulation. We editors thank all authors and reviewers for their important service. Best high-quality papers have been selected by the International PC for our premium series with SPRINGER. .

This book contains a collection of high-quality papers describing the results of relevant investigations and cutting-edge technologies, aimed at improving key aspects of real life, including major challenges such as the development of smart cities, smart buildings, smart grids, and the reduction of the impact of human activities on the environment. Sustainability requires the use of green technologies and techniques and good practices. Artificial intelligence seems to be an appropriate approach to optimize the use of resources. The main focus of this book is the dissemination of novel and innovative technologies, techniques and applications of artificial intelligence, computing and information and communications technologies, and new digital services such as digital marketing, smart tourism, smart agriculture, green and renewable energy sources. Besides, this book focuses on nurturing energy trends including renewable energies, smart grids, human activity impact, communication, behaviour, and social development, and quality of life improvement fields based on the innovative use of sensors, big data and the Internet of things (IoT), telecommunications and machine learning.

This book constitutes the proceedings of the 7th International Conference on Future Data and Security Engineering, FDSE 2020, which was supposed to be held in Quy Nhon, Vietnam, in November 2020, but the conference was held virtually due to the COVID-19 pandemic. The 24 full papers (of 53 accepted full papers) presented together with 2 invited keynotes were carefully reviewed and selected from 161 submissions. The other 29 accepted full and 8 short papers are included in CCIS 1306. The selected papers are organized into the following topical headings: security issues in big data; big data analytics and distributed systems; advances in big data query processing and optimization; blockchain and applications; industry 4.0 and smart city: data analytics and security; advanced studies in machine learning for security; and emerging data management systems and applications.

This book aims at informing on new trends, challenges and solutions, in the multidisciplinary field of biomedical engineering. It covers traditional biomedical engineering topics, as well as innovative applications such as artificial intelligence in health care, tissue engineering, neurotechnology and wearable devices. Further topics include mobile health and electroporation-based technologies, as well as new treatments in medicine. Gathering the proceedings of the 8th European Medical and Biological Engineering Conference (EMBEC 2020), held on November 29 - December 3, 2020, in Portorož, Slovenia, this book bridges fundamental and clinically-oriented research, emphasizing the role of education, translational research and commercialization of new ideas in biomedical engineering. It aims at inspiring and fostering communication and collaboration between engineers, physicists, biologists, physicians and other professionals dealing with cutting-edge themes in and advanced technologies serving the broad field of biomedical engineering.

Build, create, and deploy your computer vision application with OpenCV

About This Book* This book provides hands-on examples that cover the major features that are part of any important Computer Vision application* It explores important algorithms that allow you to recognize faces, identify objects, track camera movements, and much more* We share best practices and tips so you appreciate the power of OpenCV

Who This Book Is ForThis is the perfect book for anyone who wants to dive into the exciting world of image processing and computer vision. This book is aimed at programmers with a working knowledge of C++. Prior knowledge of OpenCV or Computer Vision/Machine Learning is not required.

What You Will Learn* Explore the steps involved in building a typical computer vision/machine learning application* Understand the relevance of OpenCV at every stage of building an application* Harness the vast amount of information that lies hidden in images into the apps you build* Incorporate visual information in your apps to create more appealing software* Get acquainted with how large-scale and popular image editing apps such as Instagram work behind the scenes* Get a glimpse of how the image filters in apps can be recreated using simple operations in OpenCV* Appreciate how difficult it is for a computer program to perform tasks that are trivial for human beings* Get to know how to develop applications that perform face detection, gender detection from facial images, and handwritten character (digit) recognition

In DetailComputer vision and machine learning concepts are frequently used in practical computer vision based projects. If you're a novice, this book provides the steps involved in building and deploying an end-to-end application in the domain of computer vision using OpenCV/C++.It starts with instructions on how to install the library and ends with you having developed an application that does something tangible and useful in computer vision/machine learning.

At the outset, we explain how to install OpenCV and demonstrate how to run some simple programs. You will start with images (the building blocks of image processing applications), and see how they are stored and processed by OpenCV. You'll get comfortable with OpenCV specific jargon (Mat Point, Scalar, and so on), and get to know how to traverse images and perform basic pixel-wise operations.

Building upon this, we introduce slightly more advanced image processing concepts such as filtering, thresholding, and edge detection. In the latter parts, the book touches upon more complex and ubiquitous concepts such as face detection (using Haar cascade classifiers), interest point detection algorithms, and feature descriptors. You will now begin to appreciate the true power of the library in how it reduces mathematically non-trivial algorithms to a single line of code!

The concluding sections will touch upon OpenCV's Machine Learning module. You will witness not only how OpenCV helps you pre-process and extract features from images that are relevant to the problems you are trying to solve, but also how to use Machine Learning algorithms that work on these features to make intelligent predictions!

The two-volume set LNCS 10273 and 10274 constitutes the refereed proceedings of the thematic track on Human Interface and the Management of Information, held as part of the 19th HCI International 2017, in Vancouver, BC, Canada, in July 2017. HCII 2017 received a total of 4340 submissions, of which 1228 papers were accepted for publication after a careful reviewing process. The 102 papers presented in these volumes were organized in topical sections as follows: Part I: Visualization Methods and Tools; Information and Interaction Design; Knowledge and Service Management; Multimodal and Embodied Interaction. Part II: Information and Learning; Information in Virtual and Augmented Reality; Recommender and Decision Support Systems; Intelligent Systems; Supporting Collaboration and User Communities; Case Studies.

The LNCS journal Transactions on Large-Scale Data- and Knowledge-Centered Systems focuses on data management, knowledge discovery, and knowledge processing, which are core and hot topics in computer science. Since the 1990s, the Internet has become the main driving force behind application development in all domains. An increase in the demand for resource sharing (e.g., computing resources, services, metadata, data sources) across different sites connected through networks has led to an evolution of data- and knowledge-management systems from centralized systems to decentralized systems enabling large-scale distributed applications providing high scalability. This, the 45th issue of Transactions on Large-Scale Data- and Knowledge-Centered Systems, contains eight revised selected regular papers. Topics covered include data analysis, information extraction, blockchains, and big data.

This book provides a platform to understand Internet of things with Raspberry Pi and the basic knowledge of the programming and interfacing of the devices and designed systems. It broadly covers introduction to Internet of Things and enabling technologies, interfacing with Raspberry Pi and Arduino and interfacing with Raspberry Pi GPIO. Internet of Things with Raspberry pi and Arduino is aimed at senior undergraduate, graduate students and professionals in electrical engineering, computer engineering including robotics.

This book reports on research and developments in human-technology interaction. A special emphasis is given to human-computer interaction, and its implementation for a wide range of purposes such as healthcare, aerospace, telecommunication, and education, among others. The human aspects are analyzed in detail. Timely studies on human-centered design, wearable technologies, social and affective computing, augmented, virtual and mixed reality simulation, human rehabilitation and biomechanics represent the core of the book. Emerging technology applications in business, security, and infrastructure are also critically examined, thus offering a timely, scientifically-grounded, but also professionally-oriented snapshot of the current state of the field. The book is based on contributions presented at the 3rd International Conference on Human Interaction and Emerging Technologies: Future Applications, IHiet 2020, held on August 27-29, 2020. It offers a timely survey and a practice-oriented reference guide to researchers and professionals dealing with design and/or management of the new generation of service systems.

This book constitutes the refereed proceedings of the 15th International Conference on Augmented Cognition, AC 2021, held as part of the 23rd International Conference, HCI International 2021, held as a virtual event, in July 2021. The total of 1276 papers and 241 posters included in the 39 HCII 2021 proceedings volumes was carefully reviewed and selected from 5222 submissions. AC 2021 includes a total of 32 papers; they were organized in topical sections named: BCI and brain activity measurement physiological measuring and human performance; modelling human cognition; and augmented cognition in complex environments.?

This book features high-quality research papers presented at the 2nd International Conference on Computational Intelligence in Pattern Recognition (CIPR 2020), held at the Institute of Engineering and Management, Kolkata, West Bengal, India, on 4–5 January 2020. It includes practical development experiences in various areas of data analysis and pattern recognition, focusing on soft computing technologies, clustering and classification algorithms, rough set and fuzzy set theory, evolutionary computations, neural science and neural network systems, image processing, combinatorial pattern matching, social network analysis, audio and video data analysis, data mining in dynamic environments, bioinformatics, hybrid computing, big data analytics

and deep learning. It also provides innovative solutions to the challenges in these areas and discusses recent developments.

This book constitutes the proceedings of the Third Workshop on Video Analytics for Audience Measurement, VAAM 2016, and the Second International Workshop on Face and Facial Expression Recognition from Real World Videos, FFER 2016, held at the 23rd International Conference on Pattern Recognition, ICPR 2016, in Cancun, Mexico, in December 2016. The 11 papers presented in this volume were carefully reviewed and selected from 13 submissions. They deal with: re-identification; consumer behavior analysis; utilizing pupillary response for task difficulty measurement; logo detection; saliency prediction; classification of facial expressions; face recognition; face verification; age estimation; super resolution; pose estimation; and pain recognition.

Step-by-step tutorials on deep learning neural networks for computer vision in python with Keras.

This book is a collection of high-quality peer-reviewed research papers presented in the Third International Conference on Computing Informatics and Networks (ICIN 2020) organized by the Department of Computer Science and Engineering (CSE), Bhagwan Parshuram Institute of Technology (BPIT), Delhi, India, during 29-30 July 2020. The book discusses a wide variety of industrial, engineering and scientific applications of the emerging techniques. Researchers from academic and industry present their original work and exchange ideas, information, techniques and applications in the field of artificial intelligence, expert systems, software engineering, networking, machine learning, natural language processing and high-performance computing.

This book constitutes the thoroughly refereed proceedings of the 13th International Conference on Image Analysis and Recognition, ICIAR 2016, held in Póvoa de Varzim, Portugal, in July 2016. The 79 revised full papers and 10 short papers presented were carefully reviewed and selected from 167 submissions. The papers are organized in the following topical sections: Advances in Data Analytics and Pattern Recognition with Applications, Image Enhancement and Restoration, Image Quality Assessment, Image Segmentation, Pattern Analysis and Recognition, Feature Extraction, Detection and Recognition, Matching, Motion and Tracking, 3D Computer Vision, RGB-D Camera Applications, Visual Perception in Robotics, Biometrics, Biomedical Imaging, Brain Imaging, Cardiovascular Image Analysis, Image Analysis in Ophthalmology, Document Analysis, Applications, and Obituaries. The chapter 'Morphological Separation of Clustered Nuclei in Histological Images' is published open access under a CC BY 4.0 license at link.springer.com.

The book proposes new technologies and discusses innovative solutions to various problems in the field of communication, circuits, and systems, as reflected in high-quality papers presented at International Conference on Communication, Circuits, and Systems (IC3S 2020) held at KIIT, Bhubaneswar, India from 16-18 October 2020. It brings together new works from academicians, scientists, industry professionals, scholars, and students together to exchange research outcomes and open up new horizons in the areas of signal processing, communications, and devices.

The goal of Intelligent video surveillance systems is to efficiently extract useful information from a considerable number of videos collected by surveillance cameras by automatically detecting, tracking and recognizing objects of interest, and understanding and analyzing their activities. Video surveillance has a huge amount of applications, from public to private places. These applications require monitoring indoor and outdoor scenes. Nowadays, there are a considerable number of digital surveillance cameras collecting a huge amount of data on a daily basis. Researchers are urged to develop intelligent systems to efficiently extract and visualize useful information from this big data source. The exponential effort on the development of new algorithms and systems for video surveillance is confirmed by the amount of effort invested in projects and companies, the creation on new startups worldwide and, not less important, in the quantity and quality of the manuscripts published in a considerable number of journals and conferences worldwide. This book is an outcome of research done by several researchers who have highly contributed to the field of Video Surveillance. The main goal is to present recent advances in this important topic for the Image Processing community.

We are delighted to introduce the proceedings of the 12th EAI International Conference on Mobile Multimedia Communications (MobiMedia 2019). This conference has brought researchers, developers and practitioners around the world who are developing multimedia services and applications in mobile environments. Developing and leveraging multimedia services and applications in mobile environment requires adopting an interdisciplinary approach where multimedia, networking and physical layer issues are addressed jointly. Content features analysis and coding, media access control, multimedia flow and error control, cross-layer optimization, Quality of Experience (QoE), media cloud as well as mobility management and security protocols are research challenges that need to be carefully examined when designing new mobile media architectures. We also need to put a great effort in designing applications that take into account the way the user perceives the overall quality of the provided service. Within this scope, MobiMedia is intended to provide a unique international forum for researchers from industry and academia, working on multimedia coding, mobile communications and networking fields, to study new technologies, applications and standards. Original unpublished contributions are solicited that can improve the knowledge and practice in the integrated design of efficient technologies and the relevant provision of advanced mobile multimedia applications

This book presents recent research in intelligent and fuzzy techniques. Emerging conditions such as pandemic, wars, natural disasters and various high technologies force people for significant changes in business and social life. The adoption of digital technologies to transform services or businesses, through replacing non-digital or manual processes with digital processes or replacing older digital technology with newer digital technologies through intelligent systems is the main scope of this book. It focuses on revealing the reflection of digital transformation in our business and social life under emerging conditions through intelligent and fuzzy systems. The latest intelligent and fuzzy methods and techniques on digital transformation are introduced by theory and applications. The intended readers are intelligent and fuzzy systems researchers, lecturers, M.Sc. and Ph.D. students studying digital transformation. Usage of ordinary fuzzy sets and their extensions, heuristics and metaheuristics from optimization to machine learning, from quality management to risk management makes the book an excellent source for researchers.

This book gathers the proceedings of the 8th International Conference on Frontiers of Intelligent Computing: Theory and Applications (FICTA 2020), held at NIT Surathkal, Karnataka, India, on 4–5 January 2020. In these proceedings, researchers, scientists, engineers and practitioners share new ideas and lessons learned in the field of intelligent computing theories with prospective applications in various engineering disciplines. The respective papers cover broad areas of the information and decision sciences, and

world problems. By the end of this book, you'll be proficient in utilizing the capabilities of the Python ecosystem to implement various image processing techniques effectively. What you will learn Implement supervised and unsupervised machine learning algorithms for image processing Use deep neural network models for advanced image processing tasks Perform image classification, object detection, and face recognition Apply image segmentation and registration techniques on medical images to assist doctors Use classical image processing and deep learning methods for image restoration Implement text detection in images using Tesseract, the optical character recognition (OCR) engine Understand image enhancement techniques such as gradient blending Who this book is for This book is for image processing engineers, computer vision engineers, software developers, machine learning engineers, or anyone who wants to become well-versed with image processing techniques and methods using a recipe-based approach. Although no image processing knowledge is expected, prior Python coding experience is necessary to understand key concepts covered in the book.

This book provides the state-of-the-art intelligent methods and techniques for solving real-world problems along with a vision of the future research. The fifth 2020 Future Technologies Conference was organized virtually and received a total of 590 submissions from academic pioneering researchers, scientists, industrial engineers, and students from all over the world. The submitted papers covered a wide range of important topics including but not limited to computing, electronics, artificial intelligence, robotics, security and communications and their applications to the real world. After a double-blind peer review process, 210 submissions (including 6 poster papers) have been selected to be included in these proceedings. One of the meaningful and valuable dimensions of this conference is the way it brings together a large group of technology geniuses in one venue to not only present breakthrough research in future technologies, but also to promote discussions and debate of relevant issues, challenges, opportunities and research findings. The authors hope that readers find the book interesting, exciting and inspiring

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