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Computer Information Systems and Industrial Management Khalid Saeed 2020-05-22 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.

Machine Learning Technologies and Applications C. Kiran Mai 2021-04-26 This book comprises the best deliberations with the theme "Machine Learning Technologies and Applications" in the "International Conference on Advances in Computer Engineering and Communication Systems (ICACECS 2020),"

organized by the Department of Computer Science and Engineering, VNR Vignana Jyothi Institute of Engineering and Technology. The book provides insights into the recent trends and developments in the field of computer science with a special focus on the machine learning and big data. The book focuses on advanced topics in artificial intelligence, machine learning, data mining and big data computing, cloud computing, Internet of things, distributed computing and smart systems.

Computer Vision – ACCV 2010 Ron Kimmel 2011-02-28 The four-volume set LNCS 6492-6495 constitutes the thoroughly refereed post-proceedings of the 10th Asian Conference on Computer Vision, ACCV 2009, held in Queenstown, New Zealand in November 2010. All together the four volumes present 206 revised papers selected from a total of 739 Submissions. All current issues in computer vision are addressed ranging from algorithms that attempt to automatically understand the content of images, optical methods coupled with computational techniques that enhance and improve images, and capturing and analyzing the world's geometry while preparing the higher level image and shape understanding. Novel gemometry techniques, statistical learning methods, and modern algebraic procedures are dealt with as well.

Learning OpenCV 4 Computer Vision with Python 3 Joseph Howse 2020-02-20 Updated for OpenCV 4 and Python 3, this book covers the latest on depth cameras, 3D tracking, augmented reality, and deep neural networks, helping you solve real-world computer vision problems with practical code Key Features Build powerful computer vision applications in concise code with OpenCV 4 and Python 3 Learn the fundamental concepts of image processing, object classification, and 2D and 3D tracking Train, use, and understand machine learning models such as Support Vector Machines (SVMs) and neural networks Book Description Computer vision is a rapidly evolving science, encompassing diverse applications and techniques. This book will not only help those who are getting started with computer vision but also experts in the domain. You'll be able to put theory into practice by building apps with OpenCV 4 and Python 3. You'll start by understanding OpenCV 4 and how to set it up with Python 3 on various platforms. Next, you'll learn how to perform basic operations such as reading, writing, manipulating, and displaying still images, videos, and camera feeds. From taking you through image processing, video analysis, and depth estimation and segmentation, to helping you gain practice by building a GUI app, this

book ensures you'll have opportunities for hands-on activities. Next, you'll tackle two popular challenges: face detection and face recognition. You'll also learn about object classification and machine learning concepts, which will enable you to create and use object detectors and classifiers, and even track objects in movies or video camera feed. Later, you'll develop your skills in 3D tracking and augmented reality. Finally, you'll cover ANNs and DNNs, learning how to develop apps for recognizing handwritten digits and classifying a person's gender and age. By the end of this book, you'll have the skills you need to execute real-world computer vision projects. What you will learn Install and familiarize yourself with OpenCV 4's Python 3 bindings Understand image processing and video analysis basics Use a depth camera to distinguish foreground and background regions Detect and identify objects, and track their motion in videos Train and use your own models to match images and classify objects Detect and recognize faces, and classify their gender and age Build an augmented reality application to track an image in 3D Work with machine learning models, including SVMs, artificial neural networks (ANNs), and deep neural networks (DNNs) Who this book is for If you are interested in learning computer vision, machine learning, and OpenCV in the context of practical real-world applications, then this book is for you. This OpenCV book will also be useful for anyone getting started with computer vision as well as experts who want to stay up-to-date with OpenCV 4 and Python 3. Although no prior knowledge of image processing, computer vision or machine learning is required, familiarity with basic Python programming is a must.

Learning OpenCV 4 Computer Vision with Python Joseph Howse 2020-02-20 Updated for OpenCV 4 and Python 3, this book covers the latest on depth cameras, 3D tracking, augmented reality, and deep neural networks, helping you solve real-world computer vision problems with practical code Key Features Build powerful computer vision applications in concise code with OpenCV 4 and Python 3 Learn the fundamental concepts of image processing, object classification, and 2D and 3D tracking Train, use, and understand machine learning models such as Support Vector Machines (SVMs) and neural networks Book Description Computer vision is a rapidly evolving science, encompassing diverse applications and techniques. This book will not only help those who are getting started with computer vision but also experts in the domain. You'll be able to put theory into practice by building apps with OpenCV 4 and Python 3. You'll start by understanding OpenCV 4 and how to set it up with Python 3 on various platforms. Next, you'll learn how to perform basic operations such as reading, writing, manipulating, and

displaying still images, videos, and camera feeds. From taking you through image processing, video analysis, and depth estimation and segmentation, to helping you gain practice by building a GUI app, this book ensures you'll have opportunities for hands-on activities. Next, you'll tackle two popular challenges: face detection and face recognition. You'll also learn about object classification and machine learning concepts, which will enable you to create and use object detectors and classifiers, and even track objects in movies or video camera feed. Later, you'll develop your skills in 3D tracking and augmented reality. Finally, you'll cover ANNs and DNNs, learning how to develop apps for recognizing handwritten digits and classifying a person's gender and age. By the end of this book, you'll have the skills you need to execute real-world computer vision projects. What you will learn Install and familiarize yourself with OpenCV 4's Python 3 bindings Understand image processing and video analysis basics Use a depth camera to distinguish foreground and background regions Detect and identify objects, and track their motion in videos Train and use your own models to match images and classify objects Detect and recognize faces, and classify their gender and age Build an augmented reality application to track an image in 3D Work with machine learning models, including SVMs, artificial neural networks (ANNs), and deep neural networks (DNNs) Who this book is for If you are interested in learning computer vision, machine learning, and OpenCV in the context of practical real-world applications, then this book is for you. This OpenCV book will also be useful for anyone getting started with computer vision as well as experts who want to stay up-to-date with OpenCV 4 and Python 3. Although no prior knowledge of image processing, computer vision or machine learning is required, familiarity with basic Python programming is a must.

New Solutions for an Old Challenge Ronny Merkel 2014-01-17 In criminal investigations, latent fingerprints are often considered as reliable means of identifying suspects. However, the evidential value of a print is strongly dependent on the knowledge of its age (the time which has passed since deposition). Suspects might admit their previous presence at a crime scene, but often claim to have been there prior to or after the crime. Especially in regard to public or highly-frequented crime scenes, prints might lose their evidential value in this case, potentially leading to dropped charges. Despite its high relevance, the challenge of estimating a latent print's age could not be adequately addressed for 80 years. In this thesis, non-invasive high-resolution capturing devices are for the first time applied to the age estimation challenge, replacing classical physical or chemical print development techniques. They allow to capture a

single print in regular time intervals and to systematically study its degradation behavior. Introducing automated processing methods in the form of a digital pipeline including preprocessing, feature extraction and age estimation techniques, objective age estimates are presented for the first time in this field. Maximum classification performances of different capturing devices between 76% and 86% are achieved for two-class problems. Furthermore, a qualitative influence model on the aging speed of latent prints is designed, forming a prerequisite for future studies.

Computational Aspects and Applications in Large-Scale Networks Valery A. Kalyagin 2018-08-24 Contributions in this volume focus on computationally efficient algorithms and rigorous mathematical theories for analyzing large-scale networks. Researchers and students in mathematics, economics, statistics, computer science and engineering will find this collection a valuable resource filled with the latest research in network analysis. Computational aspects and applications of large-scale networks in market models, neural networks, social networks, power transmission grids, maximum clique problem, telecommunication networks, and complexity graphs are included with new tools for efficient network analysis of large-scale networks. This proceeding is a result of the 7th International Conference in Network Analysis, held at the Higher School of Economics, Nizhny Novgorod in June 2017. The conference brought together scientists, engineers, and researchers from academia, industry, and government.

The Hundred-page Machine Learning Book Andriy Burkov 2019 Provides a practical guide to get started and execute on machine learning within a few days without necessarily knowing much about machine learning.The first five chapters are enough to get you started and the next few chapters provide you a good feel of more advanced topics to pursue.

Methodologies and Intelligent Systems for Technology Enhanced Learning, 11th International Conference 2022 State-of-the-art and novel methodologies and technologies allow researchers, designers, and domain experts to pursue technology-enhanced learning (TEL) solutions targeting not only cognitive processes but also motivational, personality, or emotional factors. The International Conference in Methodologies and Intelligent Systems for Technology-Enhanced Learning (MIS4TEL'21) is hosted by the University of

Salamanca and was held in Salamanca (Spain) from October 6-8, 2021. The annual appointment of MIS4TEL established itself as a consolidated fertile forum where scholars and professionals from the international community, with a broad range of expertise in the TEL field, share results and compare experiences. The calls for papers of the 11th edition of the conference welcomed novel research in TEL and expands on the topics of the previous editions: It solicited work from new research fields (ranging from artificial intelligence and agent-based systems to robotics, virtual reality, Internet of things and wearable solutions, among others) concerning methods and technological opportunities, and how they serve to create novel approaches to TEL, innovative TEL solutions, and valuable TEL experiences.

Modern Computer Vision with PyTorch V Kishore Ayyadevara 2020-11-27 Get to grips with deep learning techniques for building image processing applications using PyTorch with the help of code notebooks and test questions Key FeaturesImplement solutions to 50 real-world computer vision applications using PyTorchUnderstand the theory and working mechanisms of neural network architectures and their implementationDiscover best practices using a custom library created especially for this bookBook Description Deep learning is the driving force behind many recent advances in various computer vision (CV) applications. This book takes a hands-on approach to help you to solve over 50 CV problems using PyTorch1.x on real-world datasets. You'll start by building a neural network (NN) from scratch using NumPy and PyTorch and discover best practices for tweaking its hyperparameters. You'll then perform image classification using convolutional neural networks and transfer learning and understand how they work. As you progress, you'll implement multiple use cases of 2D and 3D multi-object detection, segmentation, human-pose-estimation by learning about the R-CNN family, SSD, YOLO, U-Net architectures, and the Detectron2 platform. The book will also guide you in performing facial expression swapping, generating new faces, and manipulating facial expressions as you explore autoencoders and modern generative adversarial networks. You'll learn how to combine CV with NLP techniques, such as LSTM and transformer, and RL techniques, such as Deep Q-learning, to implement OCR, image captioning, object detection, and a self-driving car agent. Finally, you'll move your NN model to production on the AWS Cloud. By the end of this book, you'll be able to leverage modern NN architectures to solve over 50 real-world CV problems confidently. What you will learnTrain a NN from scratch with NumPy and PyTorchImplement 2D and 3D multi-object detection and segmentationGenerate digits and DeepFakes

with autoencoders and advanced GANsManipulate images using CycleGAN, Pix2PixGAN, StyleGAN2, and SRGANCombine CV with NLP to perform OCR, image captioning, and object detectionCombine CV with reinforcement learning to build agents that play pong and self-drive a carDeploy a deep learning model on the AWS server using FastAPI and DockerImplement over 35 NN architectures and common OpenCV utilitiesWho this book is for This book is for beginners to PyTorch and intermediate-level machine learning practitioners who are looking to get well-versed with computer vision techniques using deep learning and PyTorch. If you are just getting started with neural networks, you'll find the use cases accompanied by notebooks in GitHub present in this book useful. Basic knowledge of the Python programming language and machine learning is all you need to get started with this book.

Handbook of Biometrics for Forensic Science Massimo Tistarelli 2017-02-01 This comprehensive handbook addresses the sophisticated forensic threats and challenges that have arisen in the modern digital age, and reviews the new computing solutions that have been proposed to tackle them. These include identity-related scenarios which cannot be solved with traditional approaches, such as attacks on security systems and the identification of abnormal/dangerous behaviors from remote cameras. Features: provides an in-depth analysis of the state of the art, together with a broad review of the available technologies and their potential applications; discusses potential future developments in the adoption of advanced technologies for the automated or semi-automated analysis of forensic traces; presents a particular focus on the acquisition and processing of data from real-world forensic cases; offers an holistic perspective, integrating work from different research institutions and combining viewpoints from both biometric technologies and forensic science.

Advances in Multimedia Information Processing – PCM 2014 Wei Tsang Ooi 2014-10-20 This book constitutes the refereed proceedings of the 15th Pacific Rim Conference on Multimedia, PCM 2014, held in Kuching, Malaysia, in December 2014. The 35 revised full papers and 6 short papers presented were carefully reviewed and selected from 84 submissions. The papers cover a wide range of topics in the area of multimedia content analysis, multimedia signal processing and communications, and multimedia applications and services. They have been organized into topical sections on video coding, annotation, image and photo, applications, people, image analysis and processing under extra help, nearest neighbor,

neural networks, and audio. Also included are sections with best papers and posters and demonstrations.

Future Data and Security Engineering Tran Khanh Dang 2019-11-22 This book constitutes the proceedings of the 6th International Conference on Future Data and Security Engineering, FDSE 2019, held in Nha Trang City, Vietnam, in November 2019. The 38 full papers and 14 short papers presented together with 2 papers of keynote speeches were carefully reviewed and selected from 159 submissions. The selected papers are organized into the following topical headings: Invited Keynotes, Advanced Studies in Machine Learning, Advances in Query Processing and Optimization, Big Data Analytics and Distributed Systems, Deep Learning and Applications, Cloud Data Management and Infrastructure, Security and Privacy Engineering, Authentication and Access Control, Blockchain and Cybersecurity, Emerging Data Management Systems and Applications, Short papers: Security and Data Engineering.

Pattern Recognition and Image Analysis Joao Miguel Sanches 2013-05-23 This book constitutes the refereed proceedings of the 6th Iberian Conference on Pattern Recognition and Image Analysis, IbPRIA 2013, held in Funchal, Madeira, Portugal, in June 2013. The 105 papers (37 oral and 68 poster ones) presented were carefully reviewed and selected from 181 submissions. The papers are organized in topical sections on computer vision, pattern recognition, image and signal, applications.

Knowledge Science, Engineering and Management Han Qiu 2021 This three-volume set constitutes the refereed proceedings of the 14th International Conference on Knowledge Science, Engineering and Management, KSEM 2021, held in Tokyo, Japan, in August 2021. The 164 revised full papers were carefully reviewed and selected from 492 submissions. The contributions are organized in the following topical sections: knowledge science with learning and AI; knowledge engineering research and applications; knowledge management with optimization and security.

International Conference on Artificial Intelligence and Sustainable Engineering Goutam Sanyal

Intelligent and Fuzzy Techniques for Emerging Conditions and Digital Transformation Cengiz Kahraman 2021-08-23 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.

Learning OpenCV 3 Adrian Kaehler 2016-12-14 "This book provides a working guide to the C++ Open Source Computer Vision Library (OpenCV) version 3.x and gives a general background on the field of computer vision sufficient to help readers use OpenCV effectively."--Preface.

Deep Learning for Biomedical Applications Utku Kose 2021-07-20 This book is a detailed reference on biomedical applications using Deep Learning. Because Deep Learning is an important actor shaping the future of Artificial Intelligence, its specific and innovative solutions for both medical and biomedical are very critical. This book provides a recent view of research works on essential, and advanced topics. The book offers detailed information on the application of Deep Learning for solving biomedical problems. It focuses on different types of data (i.e. raw data, signal-time series, medical images) to enable readers to understand the effectiveness and the potential. It includes topics such as disease diagnosis, image processing perspectives, and even genomics. It takes the reader through different sides of Deep Learning oriented solutions. The specific and innovative solutions covered in this book for both medical and biomedical applications are critical to scientists, researchers, practitioners, professionals, and educations who are working in the context of the topics.

Video Analytics for Audience Measurement Cosimo Distante 2014-10-30 This book constitutes the

refereed contest reports of the 1st International Workshop, VAAM 2014, held in Stockholm, Sweden, in August 2014. The 10 revised full papers presented were carefully reviewed and selected from 13 submissions. The aim of this workshop is to provide an overview of state of the art methods for audience measurements in retail and Digital Signage, end-users attraction, and stimulate the creation of appropriate benchmark dataset to be used as reference for the development of novel audience measurement algorithms. Papers are invited under the following topics: demographics and modeling consumer behaviour.

Data Engineering and Intelligent Computing Vikrant Bhateja 2021-05-04 This book features a collection of high-quality, peer-reviewed papers presented at the Fourth International Conference on Intelligent Computing and Communication (ICICC 2020) organized by the Department of Computer Science and Engineering and the Department of Computer Science and Technology, Dayananda Sagar University, Bengaluru, India, on 18–20 September 2020. The book is organized in two volumes and discusses advanced and multi-disciplinary research regarding the design of smart computing and informatics. It focuses on innovation paradigms in system knowledge, intelligence and sustainability that can be applied to provide practical solutions to a number of problems in society, the environment and industry. Further, the book also addresses the deployment of emerging computational and knowledge transfer approaches, optimizing solutions in various disciplines of science, technology and health care.

Programming Computer Vision with Python Jan Erik Solem 2012-06-19 If you want a basic understanding of computer vision's underlying theory and algorithms, this hands-on introduction is the ideal place to start. You'll learn techniques for object recognition, 3D reconstruction, stereo imaging, augmented reality, and other computer vision applications as you follow clear examples written in Python. Programming Computer Vision with Python explains computer vision in broad terms that won't bog you down in theory. You get complete code samples with explanations on how to reproduce and build upon each example, along with exercises to help you apply what you've learned. This book is ideal for students, researchers, and enthusiasts with basic programming and standard mathematical skills. Learn techniques used in robot navigation, medical image analysis, and other computer vision applications Work with image mappings and transforms, such as texture warping and panorama creation Compute 3D reconstructions from several

images of the same scene Organize images based on similarity or content, using clustering methods Build efficient image retrieval techniques to search for images based on visual content Use algorithms to classify image content and recognize objects Access the popular OpenCV library through a Python interface

Smart Computing Techniques and Applications Suresh Chandra Satapathy 2021-07-13 This book presents best selected papers presented at the 4th International Conference on Smart Computing and Informatics (SCI 2020), held at the Department of Computer Science and Engineering, Vasavi College of Engineering (Autonomous), Hyderabad, Telangana, India. It presents advanced and multi-disciplinary research towards the design of smart computing and informatics. The theme is on a broader front which focuses on various innovation paradigms in system knowledge, intelligence and sustainability that may be applied to provide realistic solutions to varied problems in society, environment and industries. The scope is also extended towards the deployment of emerging computational and knowledge transfer approaches, optimizing solutions in various disciplines of science, technology and health care.

Pattern Recognition and Image Analysis Jordi Vitria 2011-06-01 This volume constitutes the refereed proceedings of the 5th Iberian Conference on Pattern Recognition and Image Analysis, IbPRIA 2011, held in Las Palmas de Gran Canaria, Spain, in June 2011. The 34 revised full papers and 58 revised poster papers presented were carefully reviewed and selected from 158 submissions. The papers are organized in topical sections on computer vision; image processing and analysis; medical applications; and pattern recognition.

Computer Vision Projects with OpenCV and Python 3 Matthew Rever 2018-12-28 Gain a working knowledge of advanced machine learning and explore Python's powerful tools for extracting data from images and videos Key FeaturesImplement image classification and object detection using machine learning and deep learningPerform image classification, object detection, image segmentation, and other Computer Vision tasksCrisp content with a practical approach to solving real-world problems in Computer VisionBook 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 learnInstall and run major Computer Vision packages within PythonApply powerful support vector machines for simple digit classificationUnderstand deep learning with TensorFlowBuild a deep learning classifier for general imagesUse LSTMs for automated image captioningRead text from real-world imagesExtract human pose data from imagesWho 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.

Biometrics and ID Management Claus Vielhauer 2011-03 This book constitutes the thoroughly refereed proceedings of the COST 2101 International Workshop, BIOID 2011, held in Brandenburg (Havel), Germany, in March 2011. The 25 revised full papers presented were carefully reviewed and selected from numerous submissions and are completed by an introduction on COST. The papers are organized in topical main sections on theory and systems, handwriting authentication, speaker authentication, face recognition, multibiometric authentication, and on biometrics and forensics.

Machine Learning for OpenCV 4 Aditya Sharma 2019-09-06 A practical guide to understanding the core machine learning and deep learning algorithms, and implementing them to create intelligent image processing systems using OpenCV 4 Key FeaturesGain insights into machine learning algorithms, and implement them using OpenCV 4 and scikit-learnGet up to speed with Intel OpenVINO and its integration

with OpenCV 4Implement high-performance machine learning models with helpful tips and best practicesBook Description OpenCV is an opensource library for building computer vision apps. The latest release, OpenCV 4, offers a plethora of features and platform improvements that are covered comprehensively in this up-to-date second edition. You'll start by understanding the new features and setting up OpenCV 4 to build your computer vision applications. You will explore the fundamentals of machine learning and even learn to design different algorithms that can be used for image processing. Gradually, the book will take you through supervised and unsupervised machine learning. You will gain hands-on experience using scikit-learn in Python for a variety of machine learning applications. Later chapters will focus on different machine learning algorithms, such as a decision tree, support vector machines (SVM), and Bayesian learning, and how they can be used for object detection computer vision operations. You will then delve into deep learning and ensemble learning, and discover their real-world applications, such as handwritten digit classification and gesture recognition. Finally, you'll get to grips with the latest Intel OpenVINO for building an image processing system. By the end of this book, you will have developed the skills you need to use machine learning for building intelligent computer vision applications with OpenCV 4. What you will learnUnderstand the core machine learning concepts for image processingExplore the theory behind machine learning and deep learning algorithm designDiscover effective techniques to train your deep learning modelsEvaluate machine learning models to improve the performance of your modelsIntegrate algorithms such as support vector machines and Bayes classifier in your computer vision applicationsUse OpenVINO with OpenCV 4 to speed up model inferenceWho this book is for This book is for Computer Vision professionals, machine learning developers, or anyone who wants to learn machine learning algorithms and implement them using OpenCV 4. If you want to build real-world Computer Vision and image processing applications powered by machine learning, then this book is for you. Working knowledge of Python programming is required to get the most out of this book.

Face and Facial Expression Recognition from Real World Videos Qiang Ji 2015-03-18 This book constitutes the thoroughly refereed conference proceedings of the International Workshop on Face and Facial Expression Recognition from Real World Videos in conjunction with the 22nd International Conference on Pattern Recognition held in Stockholm, Sweden, in August 2014. The 11 revised full papers were carefully reviewed and selected from numerous submissions and cover topics such as Face

Recognition, Face Alignment, Facial Expression Recognition and Facial Images.

Deep Learning for Computer Vision Jason Brownlee 2019-04-04 Step-by-step tutorials on deep learning neural networks for computer vision in python with Keras.

Advances in Multimedia Modeling Klaus Schoeffmann 2012-01-03 This book constitutes the refereed proceedings of the 18th International Multimedia Modeling Conference, MMM 2012, held in Klagenfurt, Austria, in January 2012. The 38 revised regular papers, 12 special session papers, 15 poster session papers, and 6 demo session papers were carefully reviewed and selected from 142 submissions. The papers are organized in the following topical sections: annotation, annotation and interactive multimedia applications, event and activity, mining and mobile multimedia applications, search, summarization and visualization, visualization and advanced multimedia systems, and the special sessions: interactive and immersive entertainment and communication, multimedia preservation: how to ensure multimedia access over time, multi-modal and cross-modal search, and video surveillance.

Congress on Intelligent Systems Mukesh Saraswat 2022-08-01 This book is a collection of selected papers presented at the Second Congress on Intelligent Systems (CIS 2021), organized by Soft Computing Research Society and CHRIST (Deemed to be University), Bengaluru, India during September 4 – 5, 2021. It includes novel and innovative work from experts, practitioners, scientists and decision-makers from academia and industry. It covers topics such as Internet of Things, information security, embedded systems, real-time systems, cloud computing, big data analysis, quantum computing, automation systems, bio-inspired intelligence, cognitive systems, cyber physical systems, data analytics, data/web mining, data science, intelligence for security, intelligent decision making systems, intelligent information processing, intelligent transportation, artificial intelligence for machine vision, imaging sensors technology, image segmentation, convolutional neural network, image/video classification, soft computing for machine vision, pattern recognition, human computer interaction, robotic devices and systems, autonomous vehicles, intelligent control systems, human motor control, game playing, evolutionary algorithms, swarm optimization, neural network, deep learning, supervised learning, unsupervised learning, fuzzy logic, rough sets, computational optimization, and neuro fuzzy systems.

Advances in Computational Intelligence Ignacio Rojas 2021-08-21 This two-volume set LNCS 12861 and LNCS 12862 constitutes the refereed proceedings of the 16th International Work-Conference on Artificial Neural Networks, IWANN 2021, held virtually, in June 2021. The 85 full papers presented in this two-volume set were carefully reviewed and selected from 134 submissions. The papers are organized in topical sections on Deep Learning for Biomedicine, Intelligent Computing Solutions for SARS-CoV-2 Covid-19, Advanced Topics in Computational Intelligence, Biosignals Processing, Neuro-Engineering and much more.

Handbook of Signal Processing Systems Shuvra S. Bhattacharyya 2018-10-13 In this new edition of the Handbook of Signal Processing Systems, many of the chapters from the previous editions have been updated, and several new chapters have been added. The new contributions include chapters on signal processing methods for light field displays, throughput analysis of dataflow graphs, modeling for reconfigurable signal processing systems, fast Fourier transform architectures, deep neural networks, programmable architectures for histogram of oriented gradients processing, high dynamic range video coding, system-on-chip architectures for data analytics, analysis of finite word-length effects in fixed-point systems, and models of architecture. There are more than 700 tables and illustrations; in this edition over 300 are in color. This new edition of the handbook is organized in three parts. Part I motivates representative applications that drive and apply state-of-the art methods for design and implementation of signal processing systems; Part II discusses architectures for implementing these applications; and Part III focuses on compilers, as well as models of computation and their associated design tools and methodologies.

Mastering OpenCV with Practical Computer Vision Projects Daniel Lélis Baggio 2012-12-03 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.

Computer Vision and Augmented Reality in iOS Ahmed Fathi Bekhit 2021-12-08 Learn how computer

vision works, how augmented reality renders digital graphics into the physical world via an iPhone's camera, and how to incorporate these technologies into your own apps. This book shows you how to take full advantage of computer vision technologies. Interacting with other people online usually involves user-generated images and videos; whether it be "memes", short videos, or heavily-modified images. Before smart phones, generating this content required a professional using high-level image and video editing software. Not any more. This book will teach you to use computer vision in the most popular ways, such as for facial recognition, image to text analysis and, of course, recording a video of a dancing hot dog in your living room. Starting with the history of computer vision, image and video processing fundamentals, and an introduction to developing augmented reality applications, you'll learn to incorporate computer vision both in the content you create and the apps you develop for end users. Computer Vision and Augmented Reality in iOS reveals how every user with access to the Internet and a smart phone can easily generate heavily-modified images and videos. What You'll Learn Incorporate mathematics related to computer vision into your apps Host computer vision models remotely for mobile use Implement visual-inertial state estimation algorithms for mobile augmented reality Who This Book Is For Professionals or post graduate students in software development or engineering who have a basic understanding of how software development works and are interested in implementing computer vision into their development. It's recommended that readers already have a working knowledge of C++ and Swift.

Smart Systems Design, Applications, and Challenges Rodrigues, João M.F. 2020-02-28 Smart systems when connected to artificial intelligence (AI) are still closely associated with some popular misconceptions that cause the general public to either have unrealistic fears about AI or to expect too much about how it will change our workplace and life in general. It is important to show that such fears are unfounded, and that new trends, technologies, and smart systems will be able to improve the way we live, benefiting society without replacing humans in their core activities. Smart Systems Design, Applications, and Challenges provides emerging research that presents state-of-the-art technologies and available systems in the domains of smart systems and AI and explains solutions from an augmented intelligence perspective, showing that these technologies can be used to benefit, instead of replace, humans by augmenting the information and actions of their daily lives. The book addresses all smart systems that incorporate functions of sensing, actuation, and control in order to describe and analyze a situation and

make decisions based on the available data in a predictive or adaptive manner. Highlighting a broad range of topics such as business intelligence, cloud computing, and autonomous vehicles, this book is ideally designed for engineers, investigators, IT professionals, researchers, developers, data analysts, professors, and students.

Innovations in Computational Intelligence and Computer Vision Satyabrata Roy 2022-05-14 This book presents high-quality, peer-reviewed papers from the International Conference on "Innovations in Computational Intelligence and Computer Vision (ICICV 2021)," hosted by Manipal University Jaipur, Rajasthan, India, on August 5–6, 2021. Offering a collection of innovative ideas from researchers, scientists, academics, industry professionals and students, the book covers a variety of topics, such as artificial intelligence and computer vision, image processing and video analysis, applications and services of artificial intelligence and computer vision, interdisciplinary areas combining artificial intelligence and computer vision, and other innovative practices.

Artificial Intelligence Applications and Innovations Lazaros Iliadis 2014-09-15 This book constitutes the refereed proceedings of the 10th IFIP WG 12.5 International Conference on Artificial Intelligence Applications and Innovations, AIAI 2014, held in Rhodes, Greece, in September 2014. The 33 revised full papers and 29 short papers presented were carefully reviewed and selected from numerous submissions. They are organized in the following topical sections: learning-ensemble learning; social media and mobile applications of AI; hybrid-changing environments; agent (AGE); classification pattern recognition; genetic algorithms; image and video processing; feature extraction; environmental AI; simulations and fuzzy modeling; and data mining forecasting.

Mastering Computer Vision with TensorFlow 2.x Krishnendu Kar 2020-05-15 Apply neural network architectures to build state-of-the-art computer vision applications using the Python programming language Key FeaturesGain a fundamental understanding of advanced computer vision and neural network models in use todayCover tasks such as low-level vision, image classification, and object detectionDevelop deep learning models on cloud platforms and optimize them using TensorFlow Lite and the OpenVINO toolkitBook Description Computer vision allows machines to gain human-level understanding to visualize,

process, and analyze images and videos. This book focuses on using TensorFlow to help you learn advanced computer vision tasks such as image acquisition, processing, and analysis. You'll start with the key principles of computer vision and deep learning to build a solid foundation, before covering neural network architectures and understanding how they work rather than using them as a black box. Next, you'll explore architectures such as VGG, ResNet, Inception, R-CNN, SSD, YOLO, and MobileNet. As you advance, you'll learn to use visual search methods using transfer learning. You'll also cover advanced computer vision concepts such as semantic segmentation, image inpainting with GAN's, object tracking, video segmentation, and action recognition. Later, the book focuses on how machine learning and deep learning concepts can be used to perform tasks such as edge detection and face recognition. You'll then discover how to develop powerful neural network models on your PC and on various cloud platforms. Finally, you'll learn to perform model optimization methods to deploy models on edge devices for real-time inference. By the end of this book, you'll have a solid understanding of computer vision and be able to confidently develop models to automate tasks. What you will learnExplore methods of feature extraction and image retrieval and visualize different layers of the neural network modelUse TensorFlow for various visual search methods for real-world scenariosBuild neural networks or adjust parameters to optimize the performance of modelsUnderstand TensorFlow DeepLab to perform semantic segmentation on images and DCGAN for image inpaintingEvaluate your model and optimize and integrate it into your application to operate at scaleGet up to speed with techniques for performing manual and automated image annotationWho this book is for This book is for computer vision professionals, image processing professionals, machine learning engineers and AI developers who have some knowledge of machine learning and deep learning and want to build expert-level computer vision applications. In addition to familiarity with TensorFlow, Python knowledge will be required to get started with this book.

Computational Collective Intelligence Ngoc Thanh Nguyen 2019-08-28 This two-volume set (LNAI 11683 and LNAI 11684) constitutes the refereed proceedings of the 11th International Conference on Computational Collective Intelligence, ICCCI 2019, held in Hendaye France, in September 2019.The 117 full papers presented were carefully reviewed and selected from 204 submissions. The papers are grouped in topical sections on: knowledge engineering and semantic web; social networks and recommender systems; text processing and information retrieval; data mining methods and applications;

computer vision techniques; decision support and control systems; cooperative strategies for decision making and optimization; intelligent modeling and simulation approaches for real world systems; and innovations in intelligent systems.