

Linear Discriminant Analysis Tutorial

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Introduction to EEG- and Speech-Based Emotion Recognition Priyanka A. Abhang 2016-03-23

Introduction to EEG- and Speech-Based Emotion Recognition Methods examines the background, methods, and utility of using electroencephalograms (EEGs) to detect and recognize different emotions. By incorporating these methods in brain-computer interface (BCI), we can achieve more natural, efficient communication between humans and computers. This book discusses how emotional states can be recognized in EEG images, and how this is useful for BCI applications. EEG and speech processing methods are explored, as are the technological basics of how to operate and record EEGs. Finally, the authors include information on EEG-based emotion recognition, classification, and a proposed EEG/speech fusion method for how to most accurately detect emotional states in EEG recordings. Provides detailed insight on the science of emotion and the brain signals underlying this phenomenon Examines emotions as a multimodal entity, utilizing a bimodal emotion recognition system of EEG and speech data Details the implementation of techniques used for acquiring as well as analyzing EEG and speech signals for emotion recognition

ARTIFICIAL INTELLIGENCE PARAG KULKARNI 2015-02-26 There has been a movement over the years to make machines intelligent. With the advent of modern technology, AI has become the core part of day-to-day life. But it is accentuated to have a book that keeps abreast of all the state-of-the-art concepts (pertaining to AI) in simplified, explicit and elegant way, expounding on ample examples so that the beginners are able to comprehend the subject with ease. The book on Artificial Intelligence, dexterously divided into 21 chapters, fully satisfies all these pressing needs. It is intended to put each and every concept related to intelligent system in front of the readers in the most simplified way so that while understanding the basic concepts, they will develop thought process that can contribute to the building of advanced intelligent systems.

Various cardinal landmarks pertaining to the subject such as problem solving, search techniques, intelligent agents, constraint satisfaction problems, knowledge representation, planning, machine learning, natural language processing, pattern recognition, game playing, hybrid and fuzzy systems, neural network-based learning and future work and trends in AI are now under the single umbrella of this book, thereby showing a nice blend of theoretical and practical aspects. With all the latest information incorporated and several pedagogical attributes included, this textbook is an invaluable learning tool for the undergraduate and postgraduate students of computer science and engineering, and information technology.

KEY FEATURES

- Highlights a clear and concise presentation through adequate study material
- Follows a systematic approach to explicate fundamentals as well as recent advances in the area
- Presents ample relevant problems in the form of multiple choice questions, concept review questions, critical thinking exercise and project work
- Incorporates various case studies for major topics as well as numerous industrial examples

Nondestructive Evaluation of Food Quality Shyam N. Jha 2010-11-30 Numerous works on non-destructive testing of food quality have been reported in the literature. Techniques such as Near InfraRed (NIR) spectroscopy, color and visual spectroscopy, electronic nose and tongue, computer vision (image analysis), ultrasound, x-ray, CT and magnetic resonance imaging are some of the most applied for that purpose and are described in this book. Aspects such as theory/basics of the techniques, practical applications (sampling, experimentation, data analysis) for evaluation of quality attributes of food and some recent works reported in

literature are presented and discussed. This book is particularly interesting for new researchers in food quality and serves as an updated state-of-the-art report for those already familiar with the field.

ICIDSSD 2020 M. Afshar Alam 2021-03-03 The International Conference on ICT for Digital, Smart, and Sustainable Development (ICIDSSD'20) aims to provide an annual platform for the researchers, academicians, and professionals from across the world. ICIDSSD'20, held at Jamia Hamdard, New Delhi, India, is the second international conference of this series of conferences to be held annually. The conference majorly focuses on the recent developments in the areas relating to Information and Communication Technologies and contributing to Sustainable Development. ICIDSSD'20 has attracted research papers pertaining to an array of exciting research areas. The selected papers cover a wide range of topics including but not limited to Sustainable Development, Green Computing, Smart City, Artificial Intelligence, Big Data, Machine Learning, Cloud Computing, IoT, ANN, Cyber Security, and Data Science. Papers have primarily been judged on originality, presentation, relevance, and quality of work. Papers that clearly demonstrate results have been preferred. We thank our esteemed authors for having shown confidence in us and entrusting us with the publication of their research papers. The success of the conference would not have been possible without the submission of their quality research works. We thank the members of the International Scientific Advisory Committee, Technical Program Committee and members of all the other committees for their advice, guidance, and efforts. Also, we are grateful to our technical partners and sponsors, viz. HNF, EAI, ISTE, AICTE, IIC, CSI, IETE, Department of Higher Education, MHRD and DST for sponsorship and assistance.

Condition Monitoring with Vibration Signals Asoke K. Nandi 2019-12-23 Provides an extensive, up-to-date treatment of techniques used for machine condition monitoring Clear and concise throughout, this accessible book is the first to be wholly devoted to the field of condition monitoring for rotating machines using vibration signals. It covers various feature extraction, feature selection, and classification methods as well as their applications to machine vibration datasets. It also presents new methods including machine learning and compressive sampling, which help to improve safety, reliability, and performance. Condition Monitoring with Vibration Signals: Compressive Sampling and Learning Algorithms for Rotating Machines starts by introducing readers to Vibration Analysis Techniques and Machine Condition Monitoring (MCM). It then offers readers sections covering: Rotating Machine Condition Monitoring using Learning Algorithms; Classification Algorithms; and New Fault Diagnosis Frameworks designed for MCM. Readers will learn signal processing in the time-frequency domain, methods for linear subspace learning, and the basic principles of the learning method Artificial Neural Network (ANN). They will also discover recent trends of deep learning in the field of machine condition monitoring, new feature learning frameworks based on compressive sampling, subspace learning techniques for machine condition monitoring, and much more. Covers the fundamental as well as the state-of-the-art approaches to machine condition monitoring guiding readers from the basics of rotating machines to the generation of knowledge using vibration signals Provides new methods, including machine learning and compressive sampling, which offer significant improvements in accuracy with reduced computational costs Features learning algorithms that can be used for fault diagnosis and prognosis Includes previously and recently developed dimensionality reduction techniques and classification algorithms

Condition Monitoring with Vibration Signals: Compressive Sampling and Learning Algorithms for Rotating

Machines is an excellent book for research students, postgraduate students, industrial practitioners, and researchers.

Applications of Artificial Intelligence for Smart Technology Swarnalatha, P. 2020-10-30 As global communities are attempting to transform into more efficient and technologically-advanced metropolises, artificial intelligence (AI) has taken a firm grasp on various professional fields. Technology used in these industries is transforming by introducing intelligent techniques including machine learning, cognitive computing, and computer vision. This has raised significant attention among researchers and practitioners on the specific impact that these smart technologies have and what challenges remain. Applications of Artificial Intelligence for Smart Technology is a pivotal reference source that provides vital research on the implementation of advanced technological techniques in professional industries through the use of AI. While highlighting topics such as pattern recognition, computational imaging, and machine learning, this publication explores challenges that various fields currently face when applying these technologies and examines the future uses of AI. This book is ideally designed for researchers, developers, managers, academicians, analysts, students, and practitioners seeking current research on the involvement of AI in professional practices.

Machine Learning Paradigms: Theory and Application Aboul Ella Hassanien 2018-12-08 The book focuses on machine learning. Divided into three parts, the first part discusses the feature selection problem. The second part then describes the application of machine learning in the classification problem, while the third part presents an overview of real-world applications of swarm-based optimization algorithms. The concept of machine learning (ML) is not new in the field of computing. However, due to the ever-changing nature of requirements in today's world it has emerged in the form of completely new avatars. Now everyone is talking about ML-based solution strategies for a given problem set. The book includes research articles and expository papers on the theory and algorithms of machine learning and bio-inspiring optimization, as well as papers on numerical experiments and real-world applications.

Image Analysis and Recognition Aurélio Campilho 2020-06-19 This two-volume set LNCS 12131 and LNCS 12132 constitutes the refereed proceedings of the 17th International Conference on Image Analysis and Recognition, ICIAR 2020, held in Póvoa de Varzim, Portugal, in June 2020. The 54 full papers presented together with 15 short papers were carefully reviewed and selected from 123 submissions. The papers are organized in the following topical sections: image processing and analysis; video analysis; computer vision; 3D computer vision; machine learning; medical image and analysis; analysis of histopathology images; diagnosis and screening of ophthalmic diseases; and grand challenge on automatic lung cancer patient management. Due to the corona pandemic, ICIAR 2020 was held virtually only.

Advances in Artificial Intelligence and Data Engineering Niranjana N. Chiplunkar 2020-08-13 This book presents selected peer-reviewed papers from the International Conference on Artificial Intelligence and Data Engineering (AIDE 2019). The topics covered are broadly divided into four groups: artificial intelligence, machine vision and robotics, ambient intelligence, and data engineering. The book discusses recent technological advances in the emerging fields of artificial intelligence, machine learning, robotics, virtual reality, augmented reality, bioinformatics, intelligent systems, cognitive systems, computational intelligence, neural networks, evolutionary computation, speech processing, Internet of Things, big data challenges, data mining, information retrieval, and natural language processing. Given its scope, this book can be useful for students, researchers, and professionals interested in the growing applications of artificial intelligence and data engineering.

Hybrid Intelligent Systems Ana Maria Madureira 2019-03-20 This book highlights recent research on Hybrid Intelligent Systems and their various practical applications. It presents 56 selected papers from the 18th International Conference on Hybrid Intelligent Systems (HIS 2018), which was held at the Instituto Superior de Engenharia do Porto (ISEP), Porto, Portugal from December 13 to 15, 2018. A premier conference in the field of Artificial Intelligence, HIS 2018 brought together researchers, engineers and practitioners whose work involves intelligent systems and their applications in industry. Including contributions by authors from over 30 countries, the book offers a valuable reference guide for all researchers, students and practitioners in the fields of Computer Science and Engineering.

Sensor-Actuator Supported Implicit Interaction in Driver Assistance Systems Andreas Riemer

2011-06-07 Andreas Riemer studies the influence of implicit interaction using vibro-tactile actuators as additional sensory channels for car-driver feedback and pressure sensor arrays for implicit information transmission from the driver toward the vehicle. The results of his experiments suggest the use of both vibro-tactile notifications and pressure sensor images to improve vehicle handling performance and to decrease the driver's cognitive workload.

Sensor Signal and Information Processing III Wai Lok Woo 2021-02-05 In the current age of information explosion, newly invented technological sensors and software are now tightly integrated with our everyday lives. Many sensor processing algorithms have incorporated some forms of computational intelligence as part of their core framework in problem-solving. These algorithms have the capacity to generalize and discover knowledge for themselves and to learn new information whenever unseen data are captured. The primary aim of sensor processing is to develop techniques to interpret, understand, and act on information contained in the data. The interest of this book is in developing intelligent signal processing in order to pave the way for smart sensors. This involves the mathematical advancement of nonlinear signal processing theory and its applications that extend far beyond traditional techniques. It bridges the boundary between theory and application, developing novel theoretically inspired methodologies targeting both longstanding and emergent signal processing applications. The topics range from phishing detection to integration of terrestrial laser scanning, and from fault diagnosis to bio-inspired filtering. The book will appeal to established practitioners, along with researchers and students in the emerging field of smart sensor signal processing.

XXVI Brazilian Congress on Biomedical Engineering Rodrigo Costa-Felix 2019-05-15 This volume presents the proceedings of the Brazilian Congress on Biomedical Engineering (CBEB 2018). The conference was organised by the Brazilian Society on Biomedical Engineering (SBEB) and held in Armação de Buzios, Rio de Janeiro, Brazil from 21-25 October, 2018. Topics of the proceedings include these 11 tracks: • Bioengineering • Biomaterials, Tissue Engineering and Artificial Organs • Biomechanics and Rehabilitation • Biomedical Devices and Instrumentation • Biomedical Robotics, Assistive Technologies and Health Informatics • Clinical Engineering and Health Technology Assessment • Metrology, Standardization, Testing and Quality in Health • Biomedical Signal and Image Processing • Neural Engineering • Special Topics • Systems and Technologies for Therapy and Diagnosis

3D Imaging, Analysis and Applications Yonghuai Liu 2020-09-11 This textbook is designed for postgraduate studies in the field of 3D Computer Vision. It also provides a useful reference for industrial practitioners; for example, in the areas of 3D data capture, computer-aided geometric modelling and industrial quality assurance. This second edition is a significant upgrade of existing topics with novel findings. Additionally, it has new material covering consumer-grade RGB-D cameras, 3D morphable models, deep learning on 3D datasets, as well as new applications in the 3D digitization of cultural heritage and the 3D phenotyping of crops. Overall, the book covers three main areas: ● 3D imaging, including passive 3D imaging, active triangulation 3D imaging, active time-of-flight 3D imaging, consumer RGB-D cameras, and 3D data representation and visualisation; ● 3D shape analysis, including local descriptors, registration, matching, 3D morphable models, and deep learning on 3D datasets; and ● 3D applications, including 3D face recognition, cultural heritage and 3D phenotyping of plants. 3D computer vision is a rapidly advancing area in computer science. There are many real-world applications that demand high-performance 3D imaging and analysis and, as a result, many new techniques and commercial products have been developed. However, many challenges remain on how to analyse the captured data in a way that is sufficiently fast, robust and accurate for the application. Such challenges include metrology, semantic segmentation, classification and recognition. Thus, 3D imaging, analysis and their applications remain a highly-active research field that will continue to attract intensive attention from the research community with the ultimate goal of fully automating the 3D data capture, analysis and inference pipeline.

Handbook of Research on Machine Learning Innovations and Trends Hassanien, Aboul Ella 2017-04-03 Continuous improvements in technological applications have allowed more opportunities to develop automated systems. This not only leads to higher success in smart data analysis, but it increases the overall probability of technological progression. The Handbook of Research on Machine Learning Innovations and Trends is a key resource on the latest advances and research regarding the vast range of advanced systems and applications involved in machine intelligence. Highlighting multidisciplinary studies on decision

theory, intelligent search, and multi-agent systems, this publication is an ideal reference source for professionals and researchers working in the field of machine learning and its applications.

Gut Microbiota in the Occurrence, Development and Treatment of Gut-Brain Disorders Zongxin Ling 2022-01-31

Machine Learning Made Easy with R N. Lewis 2017-05-07 Finally, A Blueprint for Machine Learning with R! Machine Learning Made Easy with R offers a practical tutorial that uses hands-on examples to step through real-world applications using clear and practical case studies. Through this process it takes you on a gentle, fun and unhurried journey to creating machine learning models with R. Whether you are new to data science or a veteran, this book offers a powerful set of tools for quickly and easily gaining insight from your data using R. **NO EXPERIENCE REQUIRED:** This book uses plain language rather than a ton of equations; I'm assuming you never did like linear algebra, don't want to see things derived, dislike complicated computer code, and you're here because you want to try successful machine learning algorithms for yourself. **YOUR PERSONAL BLUE PRINT:** Through a simple to follow intuitive step by step process, you will learn how to use the most popular machine learning algorithms using R. Once you have mastered the process, it will be easy for you to translate your knowledge to assess your own data. **THIS BOOK IS FOR YOU IF YOU WANT:** Focus on explanations rather than mathematical derivation Practical illustrations that use real data. Illustrations to deepen your understanding. Worked examples in R you can easily follow and immediately implement. Ideas you can actually use and try on your own data. **TAKE THE SHORTCUT:** This guide was written for people just like you. Individuals who want to get up to speed as quickly as possible. **to: YOU'LL LEARN HOW TO:** Unleash the power of Decision Trees. Develop hands on skills using k-Nearest Neighbors. Design successful applications with Naive Bayes. Deploy Linear Discriminant Analysis. Explore Support Vector Machines. Master Linear and logistic regression. Create solutions with Random Forests. Solve complex problems with Boosting. Gain deep insights via K-Means clustering. Acquire tips to enhance model performance. For each machine learning algorithm, every step in the process is detailed, from preparing the data for analysis, to evaluating the results. These steps will build the knowledge you need to apply them to your own data science tasks. Using plain language, this book offers a simple, intuitive, practical, non-mathematical, easy to follow guide to the most successful ideas, outstanding techniques and usable solutions available using R. Everything you need to get started is contained within this book. Machine Learning Made Easy with R is your very own hands on practical, tactical, easy to follow guide to mastery. Buy this book today and accelerate your progress!

Data Preparation for Machine Learning Jason Brownlee 2020-06-30 Data preparation involves transforming raw data in to a form that can be modeled using machine learning algorithms. Cut through the equations, Greek letters, and confusion, and discover the specialized data preparation techniques that you need to know to get the most out of your data on your next project. Using clear explanations, standard Python libraries, and step-by-step tutorial lessons, you will discover how to confidently and effectively prepare your data for predictive modeling with machine learning.

Corpus Methods for Semantics Dylan Glynn 2014-11-06 This volume seeks to advance and popularise the use of corpus-driven quantitative methods in the study of semantics. The first part presents state-of-the-art research in polysemy and synonymy from a Cognitive Linguistic perspective. The second part presents and explains in a didactic manner each of the statistical techniques used in the first part of the volume. A handbook both for linguists working with statistics in corpus research and for linguists in the fields of polysemy and synonymy.

[In-Depth Tutorials: Deep Learning Using Scikit-Learn, Keras, and TensorFlow with Python GUI](#) Vivian Siahaan 2021-06-05 **BOOK 1: LEARN FROM SCRATCH MACHINE LEARNING WITH PYTHON GUI** In this book, you will learn how to use NumPy, Pandas, OpenCV, Scikit-Learn and other libraries to how to plot graph and to process digital image. Then, you will learn how to classify features using Perceptron, Adaline, Logistic Regression (LR), Support Vector Machine (SVM), Decision Tree (DT), Random Forest (RF), and K-Nearest Neighbor (KNN) models. You will also learn how to extract features using Principal Component Analysis (PCA), Linear Discriminant Analysis (LDA), Kernel Principal Component Analysis (KPCA) algorithms and use them in machine learning. In Chapter 1, you will learn: Tutorial Steps To Create A Simple GUI Application, Tutorial Steps to Use Radio Button, Tutorial Steps to Group Radio Buttons, Tutorial Steps to Use CheckBox Widget, Tutorial Steps to Use Two CheckBox Groups, Tutorial Steps to Understand Signals and Slots, Tutorial Steps to

Convert Data Types, Tutorial Steps to Use Spin Box Widget, Tutorial Steps to Use ScrollBar and Slider, Tutorial Steps to Use List Widget, Tutorial Steps to Select Multiple List Items in One List Widget and Display It in Another List Widget, Tutorial Steps to Insert Item into List Widget, Tutorial Steps to Use Operations on Widget List, Tutorial Steps to Use Combo Box, Tutorial Steps to Use Calendar Widget and Date Edit, and Tutorial Steps to Use Table Widget. In Chapter 2, you will learn: Tutorial Steps To Create A Simple Line Graph, Tutorial Steps To Create A Simple Line Graph in Python GUI, Tutorial Steps To Create A Simple Line Graph in Python GUI: Part 2, Tutorial Steps To Create Two or More Graphs in the Same Axis, Tutorial Steps To Create Two Axes in One Canvas, Tutorial Steps To Use Two Widgets, Tutorial Steps To Use Two Widgets, Each of Which Has Two Axes, Tutorial Steps To Use Axes With Certain Opacity Levels, Tutorial Steps To Choose Line Color From Combo Box, Tutorial Steps To Calculate Fast Fourier Transform, Tutorial Steps To Create GUI For FFT, Tutorial Steps To Create GUI For FFT With Some Other Input Signals, Tutorial Steps To Create GUI For Noisy Signal, Tutorial Steps To Create GUI For Noisy Signal Filtering, and Tutorial Steps To Create GUI For Wav Signal Filtering. In Chapter 3, you will learn: Tutorial Steps To Convert RGB Image Into Grayscale, Tutorial Steps To Convert RGB Image Into YUV Image, Tutorial Steps To Convert RGB Image Into HSV Image, Tutorial Steps To Filter Image, Tutorial Steps To Display Image Histogram, Tutorial Steps To Display Filtered Image Histogram, Tutorial Steps To Filter Image With CheckBoxes, Tutorial Steps To Implement Image Thresholding, and Tutorial Steps To Implement Adaptive Image Thresholding. You will also learn: Tutorial Steps To Generate And Display Noisy Image, Tutorial Steps To Implement Edge Detection On Image, Tutorial Steps To Implement Image Segmentation Using Multiple Thresholding and K-Means Algorithm, Tutorial Steps To Implement Image Denoising, Tutorial Steps To Detect Face, Eye, and Mouth Using Haar Cascades, Tutorial Steps To Detect Face Using Haar Cascades with PyQt, Tutorial Steps To Detect Eye, and Mouth Using Haar Cascades with PyQt, Tutorial Steps To Extract Detected Objects, Tutorial Steps To Detect Image Features Using Harris Corner Detection, Tutorial Steps To Detect Image Features Using Shi-Tomasi Corner Detection, Tutorial Steps To Detect Features Using Scale-Invariant Feature Transform (SIFT), and Tutorial Steps To Detect Features Using Features from Accelerated Segment Test (FAST). In Chapter 4, In this tutorial, you will learn how to use Pandas, NumPy and other libraries to perform simple classification using perceptron and Adaline (adaptive linear neuron). The dataset used is Iris dataset directly from the UCI Machine Learning Repository. You will learn: Tutorial Steps To Implement Perceptron, Tutorial Steps To Implement Perceptron with PyQt, Tutorial Steps To Implement Adaline (ADaptive Llinear NEuron), and Tutorial Steps To Implement Adaline with PyQt. In Chapter 5, you will learn how to use the scikit-learn machine learning library, which provides a wide variety of machine learning algorithms via a user-friendly Python API and to perform classification using perceptron, Adaline (adaptive linear neuron), and other models. The dataset used is Iris dataset directly from the UCI Machine Learning Repository. You will learn: Tutorial Steps To Implement Perceptron Using Scikit-Learn, Tutorial Steps To Implement Perceptron Using Scikit-Learn with PyQt, Tutorial Steps To Implement Logistic Regression Model, Tutorial Steps To Implement Logistic Regression Model with PyQt, Tutorial Steps To Implement Logistic Regression Model Using Scikit-Learn with PyQt, Tutorial Steps To Implement Support Vector Machine (SVM) Using Scikit-Learn, Tutorial Steps To Implement Decision Tree (DT) Using Scikit-Learn, Tutorial Steps To Implement Random Forest (RF) Using Scikit-Learn, and Tutorial Steps To Implement K-Nearest Neighbor (KNN) Using Scikit-Learn. In Chapter 6, you will learn how to use Pandas, NumPy, Scikit-Learn, and other libraries to implement different approaches for reducing the dimensionality of a dataset using different feature selection techniques. You will learn about three fundamental techniques that will help us to summarize the information content of a dataset by transforming it onto a new feature subspace of lower dimensionality than the original one. Data compression is an important topic in machine learning, and it helps us to store and analyze the increasing amounts of data that are produced and collected in the modern age of technology. You will learn the following topics: Principal Component Analysis (PCA) for unsupervised data compression, Linear Discriminant Analysis (LDA) as a supervised dimensionality reduction technique for maximizing class separability, Nonlinear dimensionality reduction via Kernel Principal Component Analysis (KPCA). You will learn: Tutorial Steps To Implement Principal Component Analysis (PCA), Tutorial Steps To Implement Principal Component Analysis (PCA) Using Scikit-Learn, Tutorial Steps To Implement Principal Component Analysis (PCA) Using Scikit-Learn with PyQt, Tutorial Steps To Implement Linear Discriminant Analysis (LDA), Tutorial Steps To Implement

Linear Discriminant Analysis (LDA) with Scikit-Learn, Tutorial Steps To Implement Linear Discriminant Analysis (LDA) Using Scikit-Learn with PyQt, Tutorial Steps To Implement Kernel Principal Component Analysis (KPCA) Using Scikit-Learn, and Tutorial Steps To Implement Kernel Principal Component Analysis (KPCA) Using Scikit-Learn with PyQt. In Chapter 7, you will learn how to use Keras, Scikit-Learn, Pandas, NumPy and other libraries to perform prediction on handwritten digits using MNIST dataset. You will learn: Tutorial Steps To Load MNIST Dataset, Tutorial Steps To Load MNIST Dataset with PyQt, Tutorial Steps To Implement Perceptron With PCA Feature Extractor on MNIST Dataset Using PyQt, Tutorial Steps To Implement Perceptron With LDA Feature Extractor on MNIST Dataset Using PyQt, Tutorial Steps To Implement Perceptron With KPCA Feature Extractor on MNIST Dataset Using PyQt, Tutorial Steps To Implement Logistic Regression (LR) Model With PCA Feature Extractor on MNIST Dataset Using PyQt, Tutorial Steps To Implement Logistic Regression (LR) Model With LDA Feature Extractor on MNIST Dataset Using PyQt, Tutorial Steps To Implement Logistic Regression (LR) Model With KPCA Feature Extractor on MNIST Dataset Using PyQt, Tutorial Steps To Implement , Tutorial Steps To Implement Support Vector Machine (SVM) Model With LDA Feature Extractor on MNIST Dataset Using PyQt, Tutorial Steps To Implement Support Vector Machine (SVM) Model With KPCA Feature Extractor on MNIST Dataset Using PyQt, Tutorial Steps To Implement Decision Tree (DT) Model With PCA Feature Extractor on MNIST Dataset Using PyQt, Tutorial Steps To Implement Decision Tree (DT) Model With LDA Feature Extractor on MNIST Dataset Using PyQt, Tutorial Steps To Implement Decision Tree (DT) Model With KPCA Feature Extractor on MNIST Dataset Using PyQt, Tutorial Steps To Implement Random Forest (RF) Model With PCA Feature Extractor on MNIST Dataset Using PyQt, Tutorial Steps To Implement Random Forest (RF) Model With LDA Feature Extractor on MNIST Dataset Using PyQt, Tutorial Steps To Implement Random Forest (RF) Model With KPCA Feature Extractor on MNIST Dataset Using PyQt, Tutorial Steps To Implement K-Nearest Neighbor (KNN) Model With PCA Feature Extractor on MNIST Dataset Using PyQt, Tutorial Steps To Implement K-Nearest Neighbor (KNN) Model With LDA Feature Extractor on MNIST Dataset Using PyQt, and Tutorial Steps To Implement K-Nearest Neighbor (KNN) Model With KPCA Feature Extractor on MNIST Dataset Using PyQt. BOOK 2: THE PRACTICAL GUIDES ON DEEP LEARNING USING SCIKIT-LEARN, KERAS, AND TENSORFLOW WITH PYTHON GUI In this book, you will learn how to use TensorFlow, Keras, Scikit-Learn, OpenCV, Pandas, NumPy and other libraries to implement deep learning on recognizing traffic signs using GTSRB dataset, detecting brain tumor using Brain Image MRI dataset, classifying gender, and recognizing facial expression using FER2013 dataset In Chapter 1, you will learn to create GUI applications to display line graph using PyQt. You will also learn how to display image and its histogram. In Chapter 2, you will learn how to use TensorFlow, Keras, Scikit-Learn, Pandas, NumPy and other libraries to perform prediction on handwritten digits using MNIST dataset with PyQt. You will build a GUI application for this purpose. In Chapter 3, you will learn how to perform recognizing traffic signs using GTSRB dataset from Kaggle. There are several different types of traffic signs like speed limits, no entry, traffic signals, turn left or right, children crossing, no passing of heavy vehicles, etc. Traffic signs classification is the process of identifying which class a traffic sign belongs to. In this Python project, you will build a deep neural network model that can classify traffic signs in image into different categories. With this model, you will be able to read and understand traffic signs which are a very important task for all autonomous vehicles. You will build a GUI application for this purpose. In Chapter 4, you will learn how to perform detecting brain tumor using Brain Image MRI dataset provided by Kaggle (<https://www.kaggle.com/navoneel/brain-mri-images-for-brain-tumor-detection>) using CNN model. You will build a GUI application for this purpose. In Chapter 5, you will learn how to perform classifying gender using dataset provided by Kaggle (<https://www.kaggle.com/cashutosh/gender-classification-dataset>) using MobileNetV2 and CNN models. You will build a GUI application for this purpose. In Chapter 6, you will learn how to perform recognizing facial expression using FER2013 dataset provided by Kaggle (<https://www.kaggle.com/nicolejyt/facialexpressionrecognition>) using CNN model. You will also build a GUI application for this purpose. BOOK 3: STEP BY STEP TUTORIALS ON DEEP LEARNING USING SCIKIT-LEARN, KERAS, AND TENSORFLOW WITH PYTHON GUI In this book, you will learn how to use TensorFlow, Keras, Scikit-Learn, OpenCV, Pandas, NumPy and other libraries to implement deep learning on classifying fruits, classifying cats/dogs, detecting furnitures, and classifying fashion. In Chapter 1, you will learn to create GUI applications to display line graph using PyQt. You will also learn how to display image and its histogram.

Then, you will learn how to use OpenCV, NumPy, and other libraries to perform feature extraction with Python GUI (PyQt). The feature detection techniques used in this chapter are Harris Corner Detection, Shi-Tomasi Corner Detector, and Scale-Invariant Feature Transform (SIFT). In Chapter 2, you will learn how to use TensorFlow, Keras, Scikit-Learn, OpenCV, Pandas, NumPy and other libraries to perform classifying fruits using Fruits 360 dataset provided by Kaggle (<https://www.kaggle.com/moltean/fruits/code>) using Transfer Learning and CNN models. You will build a GUI application for this purpose. In Chapter 3, you will learn how to use TensorFlow, Keras, Scikit-Learn, OpenCV, Pandas, NumPy and other libraries to perform classifying cats/dogs using dataset provided by Kaggle (<https://www.kaggle.com/chetankv/dogs-cats-images>) using Using CNN with Data Generator. You will build a GUI application for this purpose. In Chapter 4, you will learn how to use TensorFlow, Keras, Scikit-Learn, OpenCV, Pandas, NumPy and other libraries to perform detecting furnitures using Furniture Detector dataset provided by Kaggle (<https://www.kaggle.com/akkithetechie/furniture-detector>) using VGG16 model. You will build a GUI application for this purpose. In Chapter 5, you will learn how to use TensorFlow, Keras, Scikit-Learn, OpenCV, Pandas, NumPy and other libraries to perform classifying fashion using Fashion MNIST dataset provided by Kaggle (<https://www.kaggle.com/zalando-research/fashionmnist/code>) using CNN model. You will build a GUI application for this purpose. BOOK 4: Project-Based Approach On DEEP LEARNING Using Scikit-Learn, Keras, And TensorFlow with Python GUI In this book, implement deep learning on detecting vehicle license plates, recognizing sign language, and detecting surface crack using TensorFlow, Keras, Scikit-Learn, OpenCV, Pandas, NumPy and other libraries. In Chapter 1, you will learn how to use TensorFlow, Keras, Scikit-Learn, OpenCV, Pandas, NumPy and other libraries to perform detecting vehicle license plates using Car License Plate Detection dataset provided by Kaggle (<https://www.kaggle.com/andrewmvd/car-plate-detection/download>). In Chapter 2, you will learn how to use TensorFlow, Keras, Scikit-Learn, OpenCV, Pandas, NumPy and other libraries to perform sign language recognition using Sign Language Digits Dataset provided by Kaggle (<https://www.kaggle.com/ardamavi/sign-language-digits-dataset/download>). In Chapter 3, you will learn how to use TensorFlow, Keras, Scikit-Learn, OpenCV, Pandas, NumPy and other libraries to perform detecting surface crack using Surface Crack Detection provided by Kaggle (<https://www.kaggle.com/arunrk7/surface-crack-detection/download>). BOOK 5: Hands-On Guide To IMAGE CLASSIFICATION Using Scikit-Learn, Keras, And TensorFlow with PYTHON GUI In this book, implement deep learning-based image classification on detecting face mask, classifying weather, and recognizing flower using TensorFlow, Keras, Scikit-Learn, OpenCV, Pandas, NumPy and other libraries. In Chapter 1, you will learn how to use TensorFlow, Keras, Scikit-Learn, OpenCV, Pandas, NumPy and other libraries to perform detecting face mask using Face Mask Detection Dataset provided by Kaggle (<https://www.kaggle.com/omkargurav/face-mask-dataset/download>). In Chapter 2, you will learn how to use TensorFlow, Keras, Scikit-Learn, OpenCV, Pandas, NumPy and other libraries to perform how to classify weather using Multi-class Weather Dataset provided by Kaggle (<https://www.kaggle.com/pratik2901/multiclass-weather-dataset/download>). In Chapter 3, you will learn how to use TensorFlow, Keras, Scikit-Learn, OpenCV, Pandas, NumPy and other libraries to perform how to recognize flower using Flowers Recognition dataset provided by Kaggle (<https://www.kaggle.com/alxmamaev/flowers-recognition/download>). BOOK 6: Step by Step Tutorial IMAGE CLASSIFICATION Using Scikit-Learn, Keras, And TensorFlow with PYTHON GUI In this book, implement deep learning-based image classification on classifying monkey species, recognizing rock, paper, and scissor, and classify airplane, car, and ship using TensorFlow, Keras, Scikit-Learn, OpenCV, Pandas, NumPy and other libraries. In Chapter 1, you will learn how to use TensorFlow, Keras, Scikit-Learn, OpenCV, Pandas, NumPy and other libraries to perform how to classify monkey species using 10 Monkey Species dataset provided by Kaggle (<https://www.kaggle.com/slothkong/10-monkey-species/download>). In Chapter 2, you will learn how to use TensorFlow, Keras, Scikit-Learn, OpenCV, Pandas, NumPy and other libraries to perform how to recognize rock, paper, and scissor using 10 Monkey Species dataset provided by Kaggle (<https://www.kaggle.com/sanikamal/rock-paper-scissors-dataset/download>). In Chapter 3, you will learn how to use TensorFlow, Keras, Scikit-Learn, OpenCV, Pandas, NumPy and other libraries to perform how to classify airplane, car, and ship using Multiclass-image-dataset-airplane-car-ship dataset provided by Kaggle

(<https://www.kaggle.com/abtabm/multiclassimagedatasetairplanecar>).

Futuristic Research Trends and Applications of Internet of Things Bhawana Rudra 2022-08-09 The Internet of Things (IoT) is an interconnection of several devices, networks, technologies, and human resources to achieve a common goal. A variety of IoT-based applications are being used in different sectors and have succeeded in providing huge benefits to the users. As a revolution, IoT overtook the entire global landscape with its presence in almost every sector, including smart cities, smart grid, intelligent transportation, healthcare, education, and so on. This technological revolution also moved to the machines, converting them into intelligent computers that can make real-time decisions and communicate with each other, forming an Internet of Systems/Machines. The use of secure light-weight protocols will help us in developing environment-friendly and energy-efficient IoT systems. IoT is an emerging and recent area of research, adopted for many applications, and there is a need to investigate further challenges in all aspects of it. This book will provide information on fundamentals, architectures, communication protocols, use of AI, existing applications, and emerging research trends in IoT. It follows a theoretical approach to describe the fundamentals for beginners as well as a practical approach with the implementation of case studies for intermediate and advanced readers. The book will be beneficial for academicians, researchers, developers, and engineers who work in or are interested in fields related to IoT. This book serves as a reference for graduate and postgraduate courses in computer science, computer engineering, and information technology streams.

Biotechnology: Concepts, Methodologies, Tools, and Applications Management Association, Information Resources 2019-06-07 Biotechnology can be defined as the manipulation of biological process, systems, and organisms in the production of various products. With applications in a number of fields such as biomedical, chemical, mechanical, and civil engineering, research on the development of biologically inspired materials is essential to further advancement. Biotechnology: Concepts, Methodologies, Tools, and Applications is a vital reference source for the latest research findings on the application of biotechnology in medicine, engineering, agriculture, food production, and other areas. It also examines the economic impacts of biotechnology use. Highlighting a range of topics such as pharmacogenomics, biomedical engineering, and bioinformatics, this multi-volume book is ideally designed for engineers, pharmacists, medical professionals, practitioners, academicians, and researchers interested in the applications of biotechnology.

Essentials of Bio-Statistics: An overview with the help of Software EDITOR IJSMI 2018-08-19 This book intends to provide an overview of biostatistics concepts and methodology through the use of statistical software. It helps clinicians, health care and biomedical professionals who need to have basic knowledge of biostatistics as they come across clinical data related to patient, drug and dosage requirement, treatment modalities in day to day life and they are required to take clinical and health care decisions based on the data. This book covers basic concepts involved in the field of Biostatistics such as descriptive statistics, inferential statistics, correlation and regression along with the advanced concepts such as factor analysis, cluster analysis, discriminant analysis and survival analysis. Each topic is explained with the help of R statistical package (open source package). One important note that the book will not discuss about the formulas and equations involved in the statistical concepts and the author assumes that the readers have basic understanding of excel as the sample dataset is used in the book are mostly excel based datasets and also have some clinical background.

Engineering Applications of Neural Networks Chrisina Jayne 2016-08-18 This book constitutes the refereed proceedings of the 17th International Conference on Engineering Applications of Neural Networks, EANN 2016, held in Aberdeen, UK, in September 2016. The 22 revised full papers and three short papers presented together with two tutorials were carefully reviewed and selected from 41 submissions. The papers are organized in topical sections on active learning and dynamic environments; semi-supervised modeling; classification applications; clustering applications; cyber-physical systems and cloud applications; time-series prediction; learning-algorithms.

Communication Technologies, Information Security and Sustainable Development Faisal Karim Shaikh 2014-09-10 This book constitutes the thoroughly refereed proceedings of the Third International Multi-topic Conference on Communications, Technologies, Information Security and Sustainable Development, IMTIC 2013, held in Jamshoro, Pakistan, in December 2013. The 27 revised papers presented in this volume were

carefully reviewed and selected from 140 submissions. The topics presented had a reasonable balance between theory and practice in multi-disciplined topics including wireless sensor networks, cloud computing, wireless communication, antenna design, signal processing, software engineering, image processing, bioinformatics and telemedicine, neural networks, automation and control, and green renewable energy. **Guide to Vulnerability Analysis for Computer Networks and Systems** Simon Parkinson 2018-09-04 This professional guide and reference examines the challenges of assessing security vulnerabilities in computing infrastructure. Various aspects of vulnerability assessment are covered in detail, including recent advancements in reducing the requirement for expert knowledge through novel applications of artificial intelligence. The work also offers a series of case studies on how to develop and perform vulnerability assessment techniques using start-of-the-art intelligent mechanisms. Topics and features: provides tutorial activities and thought-provoking questions in each chapter, together with numerous case studies; introduces the fundamentals of vulnerability assessment, and reviews the state of the art of research in this area; discusses vulnerability assessment frameworks, including frameworks for industrial control and cloud systems; examines a range of applications that make use of artificial intelligence to enhance the vulnerability assessment processes; presents visualisation techniques that can be used to assist the vulnerability assessment process. In addition to serving the needs of security practitioners and researchers, this accessible volume is also ideal for students and instructors seeking a primer on artificial intelligence for vulnerability assessment, or a supplementary text for courses on computer security, networking, and artificial intelligence.

Bioinformatics and Biomedical Engineering Ignacio Rojas 2020-04-30 This volume constitutes the proceedings of the 8th International Work-Conference on IWBBIO 2020, held in Granada, Spain, in May 2020. The total of 73 papers presented in the proceedings, was carefully reviewed and selected from 241 submissions. The papers are organized in topical sections as follows: Biomarker Identification; Biomedical Engineering; Biomedical Signal Analysis; Bio-Nanotechnology; Computational Approaches for Drug Design and Personalized Medicine; Computational Proteomics and Protein-Protein Interactions; Data Mining from UV/VIS/NIR Imaging and Spectrophotometry; E-Health Technology, Services and Applications; Evolving Towards Digital Twins in Healthcare (EDITH); High Performance in Bioinformatics; High-Throughput Genomics: Bioinformatic Tools and Medical Applications; Machine Learning in Bioinformatics; Medical Image Processing; Simulation and Visualization of Biological Systems.

Informatics Engineering and Information Science, Part IV Azizah Abd Manaf 2011-11-10 This 4-Volume-Set, CCIS 0251 - CCIS 0254, constitutes the refereed proceedings of the International Conference on Informatics Engineering and Information Science, ICIEIS 2011, held in Kuala Lumpur, Malaysia, in November 2011. The 210 revised full papers presented together with invited papers in the 4 volumes were carefully reviewed and selected from numerous submissions. The papers are organized in topical sections on e-learning, information security, software engineering, image processing, algorithms, artificial intelligence and soft computing, e-commerce, data mining, neural networks, social networks, grid computing, biometric technologies, networks, distributed and parallel computing, wireless networks, information and data management, web applications and software systems, multimedia, ad hoc networks, mobile computing, as well as miscellaneous topics in digital information and communications.

Master Machine Learning Algorithms Jason Brownlee 2016-03-04 You must understand the algorithms to get good (and be recognized as being good) at machine learning. In this Ebook, finally cut through the math and learn exactly how machine learning algorithms work, then implement them from scratch, step-by-step.

Data-driven Analytics for Sustainable Buildings and Cities Xingxing Zhang 2021-09-11 This book explores the interdisciplinary and transdisciplinary fields of energy systems, occupant behavior, thermal comfort, air quality and economic modelling across levels of building, communities and cities, through various data analytical approaches. It highlights the complex interplay of heating/cooling, ventilation and power systems in different processes, such as design, renovation and operation, for buildings, communities and cities. Methods from classical statistics, machine learning and artificial intelligence are applied into analyses for different building/urban components and systems. Knowledge from this book assists to accelerate sustainability of the society, which would contribute to a prospective improvement through data analysis in the liveability of both built and urban environment. This book targets a broad readership with specific

experience and knowledge in data analysis, energy system, built environment and urban planning. As such, it appeals to researchers, graduate students, data scientists, engineers, consultants, urban scientists, investors and policymakers, with interests in energy flexibility, building/city resilience and climate neutrality.

Advances In Pattern Recognition - Proceedings Of The 6th International Conference Pinakpani Pal 2006-12-18 This volume contains the latest in the series of ICAPR proceedings on the state-of-the-art of different facets of pattern recognition. These conferences have already carved out a unique position among events attended by the pattern recognition community. The contributions tackle open problems in the classic fields of image and video processing, document analysis and multimedia object retrieval as well as more advanced topics in biometrics speech and signal analysis. Many of the papers focus both on theory and application driven basic research pattern recognition.

Blockchain Applications for Healthcare Informatics Sudeep Tanwar 2022-05-20 Blockchain Applications for Healthcare Informatics: Beyond 5G offers a comprehensive survey of 5G-enabled technology in healthcare applications. This book investigates the latest research in blockchain technologies and seeks to answer some of the practical and methodological questions surrounding privacy and security in healthcare. It explores the most promising aspects of 5G for healthcare industries, including how hospitals and healthcare systems can do better. Chapters investigate the detailed framework needed to maintain security and privacy in 5G healthcare services using blockchain technologies, along with case studies that look at various performance evaluation metrics, such as privacy preservation, scalability and healthcare legislation. Introduces the basic architecture and taxonomy of 5G-enabled blockchain technology Analyzes issues and challenges surrounding 5G-enabled blockchain-based systems in healthcare Investigates blockchain-based healthcare applications such as telemedicine, telesurgery, remote patient monitoring, networking of the Internet of Medical Things, and augmented and virtual reality tools for training in complex medical scenarios Includes case studies and real-world examples in each chapter to demonstrate the adoption of 5G-enabled blockchain technology across various healthcare domains

Web Technologies Research and Development - APWeb 2005 Yanchun Zhang 2005-03-22 This book constitutes the refereed proceedings of the 7th Asia-Pacific Web Conference, APWeb 2005, held in Shanghai, China in March/April 2005. The 71 revised full papers and 22 revised short papers presented together with 6 keynote papers and 22 invited demo papers were carefully reviewed and selected from 420 submissions. The papers are organized in topical sections on classification and clustering, topic and concept discovery, text search and document generation, Web search, mobile computing and P2P, XML, integration and collaboration, data mining and analysis, Web browsing and navigation, spatial data, stream data processing, Web services, ontologies, change management, personalization, performance and optimization, Web caching, data grid, multimedia, object recognition and information extraction, visualization and user interfaces, and delivery and networks.

Tutorials in Biostatistics, Tutorials in Biostatistics Ralph B. D'Agostino 2005-12-13 The Tutorials in Biostatistics have become a very popular feature of the prestigious Wiley journal, Statistics in Medicine (SIM). The introductory style and practical focus make them accessible to a wide audience including medical practitioners with limited statistical knowledge. This book represents the second of two volumes presenting the best tutorials published in SIM, focusing on statistical modeling of complex data. Topics include clustered data, hierarchical models, mixed models, genetic modeling, and meta-analysis. Each tutorial is focused on a medical problem, has been fully peer-reviewed and edited, and is authored by leading researchers in biostatistics. Many articles include an appendix on the latest developments since publication in the journal and additional references. This will appeal to statisticians working in medical research, as well as statistically-minded clinicians, biologists, epidemiologists and geneticists. It will also appeal to graduate students of biostatistics.

Intelligent Communication and Automation Systems Kamal Kumar Sharma 2021-04-19 This comprehensive reference text discusses concepts of intelligence communication and automation system in a single volume. The text discusses the role of artificial intelligence in communication engineering, the role of machine learning in communication systems, and applications of image and video processing in communication. It covers important topics including smart sensing systems, intelligent hardware design, low power system design using AI techniques, intelligent signal processing for biomedical applications, intelligent

robotic systems, and network security applications. The text will be useful for senior undergraduate and graduate students in different areas including electrical engineering, and electronics and communications engineering.

Proceedings of the 22nd Engineering Applications of Neural Networks Conference Lazaros Iliadis 2021-06-23 This book contains the proceedings of the 22nd EANN "Engineering Applications of Neural Networks" 2021 that comprise of research papers on both theoretical foundations and cutting-edge applications of artificial intelligence. Based on the discussed research areas, emphasis is given in advances of machine learning (ML) focusing on the following algorithms-approaches: Augmented ML, autoencoders, adversarial neural networks, blockchain-adaptive methods, convolutional neural networks, deep learning, ensemble methods, learning-federated learning, neural networks, recurrent - long short-term memory. The application domains are related to: Anomaly detection, bio-medical AI, cyber-security, data fusion, e-learning, emotion recognition, environment, hyperspectral imaging, fraud detection, image analysis, inverse kinematics, machine vision, natural language, recommendation systems, robotics, sentiment analysis, simulation, stock market prediction.

Proceedings of the International Conference on Advanced Intelligent Systems and Informatics 2018 Aboul Ella Hassanien 2018-08-28 This book presents the proceedings of the 4th International Conference on Advanced Intelligent Systems and Informatics 2018 (AIS2018), which took place in Cairo, Egypt from September 1 to 3, 2018. This international and interdisciplinary conference, which highlighted essential research and developments in the field of informatics and intelligent systems, was organized by the Scientific Research Group in Egypt (SRGE). The book is divided into several main sections: Intelligent Systems; Robot Modeling and Control Systems; Intelligent Robotics Systems; Machine Learning Methodology and Applications; Sentiment Analysis and Arabic Text Mining; Swarm Optimizations and Applications; Deep Learning and Cloud Computing; Information Security, Hiding, and Biometric Recognition; and Data Mining, Visualization and E-learning.

LEARN FROM SCRATCH MACHINE LEARNING WITH PYTHON GUI Vivian Siahaan 2021-03-03 In this book, you will learn how to use NumPy, Pandas, OpenCV, Scikit-Learn and other libraries to how to plot graph and to process digital image. Then, you will learn how to classify features using Perceptron, Adaline, Logistic Regression (LR), Support Vector Machine (SVM), Decision Tree (DT), Random Forest (RF), and K-Nearest Neighbor (KNN) models. You will also learn how to extract features using Principal Component Analysis (PCA), Linear Discriminant Analysis (LDA), Kernel Principal Component Analysis (KPCA) algorithms and use them in machine learning. In Chapter 1, you will learn: Tutorial Steps To Create A Simple GUI Application, Tutorial Steps to Use Radio Button, Tutorial Steps to Group Radio Buttons, Tutorial Steps to Use CheckBox Widget, Tutorial Steps to Use Two CheckBox Groups, Tutorial Steps to Understand Signals and Slots, Tutorial Steps to Convert Data Types, Tutorial Steps to Use Spin Box Widget, Tutorial Steps to Use ScrollBar and Slider, Tutorial Steps to Use List Widget, Tutorial Steps to Select Multiple List Items in One List Widget and Display It in Another List Widget, Tutorial Steps to Insert Item into List Widget, Tutorial Steps to Use Operations on Widget List, Tutorial Steps to Use Combo Box, Tutorial Steps to Use Calendar Widget and Date Edit, and Tutorial Steps to Use Table Widget. In Chapter 2, you will learn: Tutorial Steps To Create A Simple Line Graph, Tutorial Steps To Create A Simple Line Graph in Python GUI, Tutorial Steps To Create A Simple Line Graph in Python GUI: Part 2, Tutorial Steps To Create Two or More Graphs in the Same Axis, Tutorial Steps To Create Two Axes in One Canvas, Tutorial Steps To Use Two Widgets, Tutorial Steps To Use Two Widgets, Each of Which Has Two Axes, Tutorial Steps To Use Axes With Certain Opacity Levels, Tutorial Steps To Choose Line Color From Combo Box, Tutorial Steps To Calculate Fast Fourier Transform, Tutorial Steps To Create GUI For FFT, Tutorial Steps To Create GUI For FFT With Some Other Input Signals, Tutorial Steps To Create GUI For Noisy Signal, Tutorial Steps To Create GUI For Noisy Signal Filtering, and Tutorial Steps To Create GUI For Wav Signal Filtering. In Chapter 3, you will learn: Tutorial Steps To Convert RGB Image Into Grayscale, Tutorial Steps To Convert RGB Image Into YUV Image, Tutorial Steps To Convert RGB Image Into HSV Image, Tutorial Steps To Filter Image, Tutorial Steps To Display Image Histogram, Tutorial Steps To Display Filtered Image Histogram, Tutorial Steps To Filter Image With CheckBoxes, Tutorial Steps To Implement Image Thresholding, and Tutorial Steps To Implement Adaptive Image Thresholding. You will also learn: Tutorial Steps To Generate And Display Noisy Image, Tutorial Steps To Implement Edge Detection On

Image, Tutorial Steps To Implement Image Segmentation Using Multiple Thresholding and K-Means Algorithm, Tutorial Steps To Implement Image Denoising, Tutorial Steps To Detect Face, Eye, and Mouth Using Haar Cascades, Tutorial Steps To Detect Face Using Haar Cascades with PyQt, Tutorial Steps To Detect Eye, and Mouth Using Haar Cascades with PyQt, Tutorial Steps To Extract Detected Objects, Tutorial Steps To Detect Image Features Using Harris Corner Detection, Tutorial Steps To Detect Image Features Using Shi-Tomasi Corner Detection, Tutorial Steps To Detect Features Using Scale-Invariant Feature Transform (SIFT), and Tutorial Steps To Detect Features Using Features from Accelerated Segment Test (FAST). In Chapter 4, in this tutorial, you will learn how to use Pandas, NumPy and other libraries to perform simple classification using perceptron and Adaline (adaptive linear neuron). The dataset used is Iris dataset directly from the UCI Machine Learning Repository. You will learn: Tutorial Steps To Implement Perceptron, Tutorial Steps To Implement Perceptron with PyQt, Tutorial Steps To Implement Adaline (ADaptive Linear NEuron), and Tutorial Steps To Implement Adaline with PyQt. In Chapter 5, you will learn how to use the scikit-learn machine learning library, which provides a wide variety of machine learning algorithms via a user-friendly Python API and to perform classification using perceptron, Adaline (adaptive linear neuron), and other models. The dataset used is Iris dataset directly from the UCI Machine Learning Repository. You will learn: Tutorial Steps To Implement Perceptron Using Scikit-Learn, Tutorial Steps To Implement Perceptron Using Scikit-Learn with PyQt, Tutorial Steps To Implement Logistic Regression Model, Tutorial Steps To Implement Logistic Regression Model with PyQt, Tutorial Steps To Implement Logistic Regression Model Using Scikit-Learn with PyQt, Tutorial Steps To Implement Support Vector Machine (SVM) Using Scikit-Learn, Tutorial Steps To Implement Decision Tree (DT) Using Scikit-Learn, Tutorial Steps To Implement Random Forest (RF) Using Scikit-Learn, and Tutorial Steps To Implement K-Nearest Neighbor (KNN) Using Scikit-Learn. In Chapter 6, you will learn how to use Pandas, NumPy, Scikit-Learn, and other libraries to implement different approaches for reducing the dimensionality of a dataset using different feature selection techniques. You will learn about three fundamental techniques that will help us to summarize the information content of a dataset by transforming it onto a new feature subspace of lower dimensionality than the original one. Data compression is an important topic in machine learning, and it helps us to store and analyze the increasing amounts of data that are produced and collected in the modern age of technology. You will learn the following topics: Principal Component Analysis (PCA) for unsupervised data compression, Linear Discriminant Analysis (LDA) as a supervised dimensionality reduction technique for maximizing class separability, Nonlinear dimensionality reduction via Kernel Principal Component Analysis (KPCA). You will learn: 6.1 Tutorial Steps To Implement Principal Component Analysis (PCA), Tutorial Steps To Implement Principal Component Analysis (PCA) Using Scikit-Learn, Tutorial Steps To Implement Principal Component Analysis (PCA) Using Scikit-Learn with PyQt, Tutorial Steps To Implement Linear Discriminant Analysis (LDA), Tutorial Steps To Implement Linear Discriminant Analysis (LDA) with Scikit-Learn, Tutorial Steps To Implement Linear Discriminant Analysis (LDA) Using Scikit-Learn with PyQt, Tutorial Steps To Implement Kernel Principal Component Analysis (KPCA) Using Scikit-Learn, and Tutorial Steps To Implement Kernel Principal Component Analysis (KPCA) Using Scikit-Learn with PyQt. In Chapter 7, you will learn how to use Keras, Scikit-Learn, Pandas, NumPy and other libraries to perform prediction on handwritten digits using MNIST dataset. You will learn: Tutorial Steps To Load MNIST Dataset, Tutorial Steps To Load MNIST Dataset with PyQt, Tutorial Steps To Implement Perceptron With PCA Feature Extractor on MNIST Dataset Using PyQt, Tutorial Steps To Implement Perceptron With LDA Feature Extractor on MNIST Dataset Using PyQt, Tutorial Steps To Implement Perceptron With KPCA Feature Extractor on MNIST Dataset Using PyQt, Tutorial Steps To Implement Logistic Regression (LR) Model With PCA Feature Extractor on MNIST Dataset Using PyQt, Tutorial Steps To Implement Logistic Regression (LR) Model With LDA Feature Extractor on MNIST Dataset Using PyQt, Tutorial Steps To Implement Logistic Regression (LR) Model With KPCA Feature Extractor on MNIST Dataset Using PyQt, Tutorial Steps To Implement , Tutorial Steps To Implement Support Vector Machine (SVM) Model With LDA Feature Extractor on MNIST Dataset Using PyQt, Tutorial Steps To Implement Support Vector Machine (SVM) Model With KPCA Feature Extractor on MNIST Dataset Using PyQt, Tutorial Steps To Implement Decision Tree (DT) Model With PCA Feature Extractor on MNIST Dataset Using PyQt, Tutorial Steps To Implement Decision Tree (DT) Model With LDA Feature Extractor on MNIST Dataset Using PyQt, Tutorial Steps To Implement Decision Tree (DT) Model With KPCA Feature Extractor on MNIST Dataset Using PyQt,

Tutorial Steps To Implement Random Forest (RF) Model With PCA Feature Extractor on MNIST Dataset Using PyQt, Tutorial Steps To Implement Random Forest (RF) Model With LDA Feature Extractor on MNIST Dataset Using PyQt, Tutorial Steps To Implement Random Forest (RF) Model With KPCA Feature Extractor on MNIST Dataset Using PyQt, Tutorial Steps To Implement K-Nearest Neighbor (KNN) Model With PCA Feature Extractor on MNIST Dataset Using PyQt, Tutorial Steps To Implement K-Nearest Neighbor (KNN) Model With LDA Feature Extractor on MNIST Dataset Using PyQt, and Tutorial Steps To Implement K-Nearest Neighbor (KNN) Model With KPCA Feature Extractor on MNIST Dataset Using PyQt.

Proceedings of the International Conference on Advanced Intelligent Systems and Informatics

2017 About Ella Hassanien 2017-08-30 This book gathers the proceedings of the 3rd International Conference on Advanced Intelligent Systems and Informatics 2017 (AIS2017), which took place in Cairo, Egypt from September 9 to 11, 2017. This international and interdisciplinary conference, which highlighted essential research and developments in the field of informatics and intelligent systems, was organized by the Scientific Research Group in Egypt (SRGE). The book's content is divided into five main sections: Intelligent Language Processing, Intelligent Systems, Intelligent Robotics Systems, Informatics, and the Internet of Things.

SEVEN BOOKS IN ONE: Sinyal Digital, Citra Digital, Machine Learning, Deep Learning, dan Data Science dengan Python GUI

Vivian Siahaan 2021-07-24 BUKU 1: Konsep dan Implementasi Pemrograman Python Buku ini merupakan buku teks pemrograman komputer menggunakan Python yang difokuskan untuk pembelajaran efektif. Sengaja dirancang untuk pelbagai tingkat ketertarikan dan kemampuan pembelajar, buku ini cocok untuk siswa SMA/SMK, mahasiswa, insinyur, dan bahkan peneliti dalam berbagai disiplin ilmu. Tidak ada pengalaman pemrograman yang diperlukan, dan hanya sedikit kemampuan aljabar tingkat sekolah menengah atas yang diperlukan. Buku ini memang dirancang untuk mengambil rute tradisional, dengan lebih dahulu menekankan sintaksis-sintaksis dasar, struktur-struktur kendali, fungsi, dekomposisi prosedural, dan struktur data built-in seperti list, set, dan kamus (dictionary). Panduan langkah-demi-langkah di dalamnya diharapkan bisa membantu kepercayaan diri pembaca untuk menjadi programmer yang bisa menyelesaikan permasalahan-permasalahan pemrograman. Sejumlah contoh disediakan untuk mendemonstrasikan bagaimana menerapkan konsep-konsep yang telah disajikan terhadap sejumlah tantangan pemrograman. Pada Bab 1, Anda akan diajari mengenal IDE Spyder untuk memprogram Python dan mengetahui sintaksis dasar dari program sederhana Python. Pada Bab 2, Anda akan belajar: Mendefinisikan dan menggunakan variabel dan konstanta; Memahami sejumlah watak dan keterbatasan bilangan integer (bilangan bulat) dan titik-mengambang (bilangan pecahan); Memahami pentingnya komentar dan tataletak kode; Menulis ekspresi aritmatik dan statemen penugasan; Menciptakan program yang membaca dan memproses masukan, dan menampilkan hasilnya; Bagaimana menggunakan string Python; Menciptakan program grafika menggunakan sejumlah bangun dasar dan teks. Pada Bab 3, Anda akan belajar: Mengimplementasikan keputusan menggunakan statemen if; Membandingkan bilangan integer, titik-mengambang, dan string; Menuliskan statemen menggunakan ekspresi Boolean; Memvalidasi masukan user. Pada Bab 4, Anda akan belajar: Mengimplementasikan loop while dan for; Menjadi familiar dengan algoritma-algoritma yang melibatkan loop; Memahami loop bersarang; Memproses string. Pada Bab 5, Anda akan belajar: Bagaimana mengimplementasikan fungsi; Menjadi familiar dengan konsep pelewatan parameter; Mengembangkan strategi pendekomposisian pekerjaan kompleks menjadi pekerjaan-pekerjaan yang lebih mudah; Mampu menentukan skop variabel. Pada Bab 6, Anda akan belajar: Mengumpulkan elemen-elemen menggunakan list; Menggunakan loop for untuk menjelajah list; Menggunakan sejumlah algoritma umum untuk memproses list; Menggunakan list dengan fungsi; Bekerja dengan tabel data. Pada Bab 7, Anda akan belajar: Membangun dan menggunakan kontainer set; Menggunakan operasi-operasi set untuk memproses data; Membangun dan menggunakan kontainer dictionary; Menggunakan dictionary untuk tabel; Menggunakan struktur kompleks. BUKU 2: SINYAL DAN CITRA DIGITAL dengan PYTHON GUI Buku ini merupakan versi bahasa Indonesia dari buku kami yang berjudul "LEARN FROM SCRATCH SIGNAL AND IMAGE PROCESSING WITH PYTHON GUI". Anda bisa mengaksesnya di Amazon maupun di Google Books. Pada buku ini, Anda akan belajar bagaimana menggunakan OpenCV, NumPy dan sejumlah pustaka lain untuk melakukan pemrosesan sinyal, pemrosesan citra, deteksi objek, dan ekstraksi fitur dengan memanfaatkan Python GUI (PyQt). Anda akan belajar cara memfilter sinyal, mendeteksi tepi dan segmen, dan menekan derau pada citra dengan memanfaatkan PyQt.

Anda juga akan belajar cara mendeteksi objek (wajah, mata, dan mulut) menggunakan Haar Cascades dan cara mendeteksi fitur pada citra menggunakan Harris Corner Detection, Shi-Tomasi Corner Detector, Scale-Invariant Feature Transform (SIFT), dan Features from Accelerated Uji Segmen (FAST). Pada bab 1, Anda akan mempelajari secara langkah demi langkah: membuat aplikasi gui sederhana; menggunakan tombol radio; mengelompokkan tombol radio; menggunakan widget kotak centang; menggunakan dua grup kotak centang; memahami sinyal dan slot; mengonversi jenis data; menggunakan widget spin box; menggunakan scrollbar dan slider; menggunakan list widget; menggunakan kotak kombo; dan menggunakan widget Table. Pada bab 2, Anda akan mempelajari secara langkah demi langkah: membuat grafik garis sederhana; membuat grafik garis sederhana dengan python gui; membuat grafik garis sederhana dengan python gui: bagian 2; membuat dua atau lebih banyak grafik di sumbu yang sama; membuat dua sumbu dalam satu kanvas; menggunakan dua widget; menggunakan dua widget, masing-masing memiliki dua sumbu; menggunakan sumbu dengan tingkat opacity tertentu; memilih warna garis dari combo box; menghitung fast fourier transform; membuat gui untuk FFT; membuat gui untuk FFT dengan beberapa sinyal input lain; membuat gui untuk sinyal bising; membuat gui untuk penapisan sinyal berderau; dan membuat gui untuk penapisan sinyal wav. Pada bab 3, Anda akan mempelajari secara langkah demi langkah: mengkonversi citra RGB menjadi grayscale; mengubah citra RGB menjadi citra YUV; mengkonversi citra RGB menjadi citra HSV; memfilter citra; menampilkan histogram citra; menampilkan histogram citra tertapis; memfilter citra dengan memanfaatkan opsi pada kotak centang; menerapkan ambang batas citra; dan menerapkan ambang batas citra adaptif. Pada bab 4, Anda akan mempelajari secara langkah demi langkah: membangkitkan dan menampilkan citra berderau; menerapkan deteksi tepi pada citra; menerapkan segmentasi citra menggunakan algoritma multiple thresholding dan k-means; dan menerapkan penekanan derau citra. Pada bab 5, Anda akan mempelajari secara langkah demi langkah: mendeteksi wajah, mata, dan mulut menggunakan haar cascades; mendeteksi wajah menggunakan haar cascades dengan pyqt; mendeteksi mata, dan mulut menggunakan haar cascades dengan pyqt; dan mengekstraksi objek yang terdeteksi. Pada bab 6, Anda akan mempelajari secara langkah demi langkah: mendeteksi fitur citra menggunakan deteksi harris corner; mendeteksi fitur citra menggunakan deteksi sudut shi-tomasi; mendeteksi fitur citra menggunakan Scale-Invariant Feature Transform (SIFT); dan mendeteksi fitur citra menggunakan Features from Accelerated Uji Segmen (FAST). BUKU 3: IMPLEMENTASI MACHINE LEARNING DENGAN PYTHON GUI Buku ini merupakan versi bahasa Indonesia dari buku kami yang berjudul "LEARN FROM SCRATCH MACHINE LEARNING WITH PYTHON GUI". Anda bisa mengaksesnya di Amazon maupun di Google Books. Pada buku ini, Anda akan mempelajari cara menggunakan NumPy, Pandas, OpenCV, Scikit-Learn, dan pustaka lain untuk memplot grafik dan memproses citra digital. Kemudian, Anda akan mempelajari cara mengklasifikasikan fitur menggunakan model Perceptron, Adaline, Logistic Regression (LR), Support Vector Machine (SVM), Decision Tree (DT), Random Forest (RF), dan K-Nearest Neighbor (KNN). Anda juga akan belajar cara mengekstraksi fitur menggunakan algoritma Principal Component Analysis (PCA), Linear Discriminant Analysis (LDA), Kernel Principal Component Analysis (KPCA) dan menggunakannya dalam pembelajaran mesin (machine learning). Pada Bab 1, Anda akan mempelajari dasar-dasar penggunaan Python GUI dengan Qt Designer. Pada Bab 2, Anda akan mempelajari: Langkah-Langkah Menciptakan Grafik Garis Sederhana; Langkah-Langkah Menampilkan Grafik Garis dengan Python GUI: Bagian 1; Langkah-Langkah Menampilkan Grafik Garis dengan Python GUI: Bagian 2; Langkah-Langkah Menampilkan Dua atau Lebih Grafik pada Sumbu yang Sama; Langkah-Langkah Menciptakan Dua Sumbu pada Satu Canvas; Langkah-Langkah Menggunakan Dua Widget; Langkah-Langkah Menggunakan Dua Widget, Masing-Masing Memiliki Dua Sumbu; Langkah-Langkah Menggunakan Sumbu dengan Tingkat Keburaman Tertentu; Langkah-Langkah Memilih Warna Garis dari Combo Box; Langkah-Langkah Menghitung Fast Fourier Transform; Langkah-Langkah Menciptakan GUI untuk FFT; Langkah-Langkah Menciptakan GUI untuk FFT atas Sinyal-Sinyal Masukan Lain; Langkah-Langkah Menciptakan GUI untuk Sinyal Berderau; Langkah-Langkah Menciptakan GUI untuk Penapisan Sinyal Berderau; Langkah-Langkah Menciptakan GUI untuk Penapisan Sinyal Wav; Langkah-Langkah Mengkonversi Citra RGB Menjadi Keabuan; Langkah-Langkah Mengkonversi Citra RGB Menjadi Citra YUV; Langkah-Langkah Mengkonversi Citra RGB Menjadi Citra HSV; Langkah-Langkah Menapis Citra; Langkah-Langkah Menampilkan Histogram Citra ; Langkah-Langkah Menampilkan Histogram Citra Tertapis; Langkah-Langkah Menapis Citra: Memanfaatkan CheckBox; Langkah-Langkah Mengimplementasikan Ambang Batas Citra; dan Langkah-

Langkah Mengimplementasikan Ambang Batas Adaptif. Pada Bab 3, Anda akan mempelajari: Langkah-Langkah Implementasi Perceptron; Langkah-Langkah Implementasi Perceptron dengan PyQt; Langkah-Langkah Implementasi Adaline (ADaptive LInear NEuron); dan Langkah-Langkah Implementasi Adaline dengan PyQt. Pada Bab 4, Anda akan mempelajari: Langkah-Langkah Implementasi Perceptron Menggunakan Scikit-Learn dengan PyQt; Langkah-Langkah Implementasi Model Logistic Regression (LR); Langkah-Langkah Implementasi Model Logistic Regression dengan PyQt; Langkah-Langkah Implementasi Model Logistic Regression Menggunakan Scikit-Learn dengan PyQt; Langkah-Langkah Implementasi Mode Support Vector Machine (SVM) Menggunakan Scikit-Learn; Langkah-Langkah Implementasi Decision Tree (DT) Menggunakan Scikit-Learn; Langkah-Langkah Implementasi Model Random Forest (RF) Menggunakan Scikit-Learn; dan Langkah-Langkah Implementasi Model K-Nearest Neighbor (KNN) Menggunakan Scikit-Learn. Pada Bab 5, Anda akan mempelajari: Langkah-Langkah Implementasi Principal Component Analysis (PCA); Langkah-Langkah Implementasi Principal Component Analysis (PCA); Menggunakan Scikit-Learn; Langkah-Langkah Implementasi Principal Component Analysis (PCA) Menggunakan Scikit-Learn dengan PyQt; Langkah-Langkah Implementasi Linear Discriminant Analysis (LDA); Langkah-Langkah Implementasi Linear Discriminant Analysis (LDA) dengan scikit-learn; Langkah-Langkah Implementasi Linear Discriminant Analysis (LDA); Menggunakan Scikit-Learn dengan PyQt; Langkah-Langkah Implementasi Kernel Principal Component Analysis (KPCA) Menggunakan Scikit-Learn; dan Langkah-Langkah Implementasi Kernel Principal Component Analysis (KPCA) Menggunakan Scikit-Learn dengan PyQt. Pada Bab 6, Anda akan mempelajari: Langkah-Langkah Memuat Dataset MNIST; Langkah-Langkah Memuat Dataset MNIST dengan PyQt; Langkah-Langkah Implementasi Perceptron dengan Ekstraktor Fitur PCA pada Dataset MNIST Menggunakan PyQt; Langkah-Langkah Implementasi Perceptron dengan Ekstraktor Fitur LDA pada Dataset MNIST Menggunakan PyQt; Langkah-Langkah Implementasi Perceptron dengan Ekstraktor Fitur KPCA pada Dataset MNIST Menggunakan PyQt; Langkah-Langkah Implementasi Logistic Regression (LR) dengan Ekstraktor Fitur PCA pada Dataset MNIST Menggunakan PyQt; Langkah-Langkah Implementasi Logistic Regression (LR) dengan Ekstraktor Fitur LDA pada Dataset MNIST Menggunakan PyQt; Langkah-Langkah Implementasi Logistic Regression (LR) dengan Ekstraktor Fitur KPCA pada Dataset MNIST Menggunakan PyQt; Langkah-Langkah Implementasi Support Vector Machine (SVM) dengan Ekstraktor Fitur PCA pada Dataset MNIST Menggunakan PyQt; Langkah-Langkah Implementasi Support Vector Machine (SVM) dengan Ekstraktor Fitur LDA pada Dataset MNIST Menggunakan PyQt; Langkah-Langkah Implementasi Support Vector Machine (SVM) dengan Ekstraktor Fitur KPCA pada Dataset MNIST Menggunakan PyQt; Langkah-Langkah Implementasi Decision Tree (DT) dengan Ekstraktor Fitur PCA pada Dataset MNIST Menggunakan PyQt; Langkah-Langkah Implementasi Decision Tree (DT) dengan Ekstraktor Fitur LDA pada Dataset MNIST Menggunakan PyQt; Langkah-Langkah Implementasi Decision Tree (DT) dengan Ekstraktor Fitur KPCA pada Dataset MNIST Menggunakan PyQt; Langkah-Langkah Implementasi Random Forest (RF) dengan Ekstraktor Fitur PCA pada Dataset MNIST Menggunakan PyQt; Langkah-Langkah Implementasi Random Forest (RF) dengan Ekstraktor Fitur LDA pada Dataset MNIST Menggunakan PyQt; Langkah-Langkah Implementasi Random Forest (RF) dengan Ekstraktor Fitur KPCA pada Dataset MNIST Menggunakan PyQt; Langkah-Langkah Implementasi K-Nearest Neighbor (KNN) dengan Ekstraktor Fitur PCA pada Dataset MNIST Menggunakan PyQt; Langkah-Langkah Implementasi K-Nearest Neighbor (KNN) dengan Ekstraktor Fitur LDA pada Dataset MNIST Menggunakan PyQt; dan Langkah-Langkah Implementasi K-Nearest Neighbor (KNN) dengan Ekstraktor Fitur KPCA pada Dataset MNIST Menggunakan PyQt. Pada Bab 7, Anda akan mempelajari: Langkah-Langkah Membangkitkan dan Menampilkan Citra Berderau; Langkah-Langkah Mengimplementasikan Deteksi Tepi pada Citra; Langkah-Langkah Mengimplementasikan Segmentasi Menggunakan Ambang Batas Jamak dan Algoritma K-Means; Langkah-Langkah Mengimplementasikan Penekanan Derau pada Citra; Langkah-Langkah Mendeteksi Wajah, Mata, dan Mulut dengan Haar Cascades; Langkah-Langkah Mendeteksi Wajah Menggunakan Haar Cascades dengan PyQt; Langkah-Langkah Mendeteksi Mata dan Mulut Menggunakan Haar Cascades dengan PyQt; Langkah-Langkah Mengekstraksi Objek-Objek Terdeteksi; Langkah-Langkah Mendeteksi Fitur Citra dengan Harris Corner Detection; Langkah-Langkah Mendeteksi Fitur Citra dengan Shi-Tomasi Corner Detection; Langkah-Langkah Mendeteksi Fitur Citra dengan Scale-Invariant Feature Transform (SIFT) ; dan Langkah-Langkah Mendeteksi Fitur Citra dengan Accelerated Segment Test (FAST). BUKU 4: Implementasi DEEP LEARNING Menggunakan Scikit-Learn, Keras, Dan Tensorflow Dengan Python GUI Buku ini merupakan versi

bahasa Indonesia dari buku kami yang berjudul “The Practical Guides On Deep Learning Using SCIKIT-LEARN, KERAS, and TENSORFLOW with Python GUI” yang dapat dilihat di Amazon maupun Google Books. Dalam buku ini, Anda akan mempelajari cara menggunakan TensorFlow, Keras, Scikit-Learn, OpenCV, Pandas, NumPy, dan library lainnya untuk mengimplementasikan deep learning dalam mengenali rambu lalu lintas menggunakan dataset GTSRB, mendeteksi tumor otak menggunakan dataset MRI Brain Image, mengklasifikasikan gender, dan mengenali ekspresi wajah menggunakan dataset FER2013. Pada bab 1, Anda akan belajar membuat aplikasi GUI untuk menampilkan grafik garis menggunakan PyQt. Anda juga akan belajar bagaimana mengkonversi citra menjadi keabuan, menjadi ruang warna YUV, dan menjadi ruang warna HSV. Bab ini juga mengajarkan bagaimana menampilkan citra dan histogramnya dan merancang GUI untuk mengimplementasikannya. Pada bab 2, Anda akan belajar menggunakan TensorFlow, Keras, Scikit-Learn, Pandas, NumPy dan sejumlah pustaka lain untuk memprediksi digit-digit tulisan tangan menggunakan dataset MNIST. Pada bab 3, Anda akan mempelajari cara menggunakan TensorFlow, Keras, Scikit-Learn, PIL, Pandas, NumPy, dan pustaka lain untuk mengenali rambu lalu lintas menggunakan dataset GTSRB dari Kaggle. Ada beberapa jenis rambu lalu lintas seperti batas kecepatan, dilarang masuk, rambu lalu lintas, belok kiri atau kanan, anak-anak menyeberang, tidak ada kendaraan berat yang lewat, dll. Klasifikasi rambu lalu lintas adalah proses untuk mengidentifikasi kelas rambu lalu lintas tersebut. Pada proyek Python ini, Anda akan membangun model jaringan saraf tiruan (deep neural network) yang dapat mengklasifikasikan rambu lalu lintas dalam citra ke dalam kategori yang berbeda. Dengan model ini, Anda akan dapat membaca dan memahami rambu lalu lintas yang merupakan pekerjaan yang sangat penting bagi semua kendaraan otonom. Anda juga akan membangun sebuah GUI untuk tujuan ini. Pada bab 4, Anda akan mempelajari cara menggunakan TensorFlow, Keras, Scikit-Learn, Pandas, NumPy dan pustaka lainnya untuk melakukan pendeteksian tumor otak menggunakan dataset Brain Image MRI yang disediakan oleh Kaggle (<https://www.kaggle.com/navoneel/brain-mri-images-for-brain-tumor-detection>). Anda juga akan membangun sebuah GUI untuk tujuan ini. Pada bab 5, Anda akan mempelajari cara menggunakan TensorFlow, Keras, Scikit-Learn, OpenCV, Pandas, NumPy dan library lain untuk melakukan klasifikasi gender menggunakan dataset yang disediakan oleh Kaggle (<https://www.kaggle.com/cashutosh/gender-classification-dataset>). Anda juga akan membangun sebuah GUI untuk tujuan ini. Pada bab 6, Anda akan mempelajari cara menggunakan TensorFlow, Keras, Scikit-Learn, OpenCV, Pandas, NumPy dan pustaka lain untuk melakukan pengenalan ekspresi wajah menggunakan dataset FER2013 yang disediakan oleh Kaggle (<https://www.kaggle.com/nicolejyt/facialexpressionrecognition>). Anda juga akan membangun sebuah GUI untuk tujuan ini. BUKU 5: Panduan Praktis Deep Learning Menggunakan Scikit-Learn, Keras, Dan Tensorflow Dengan Python GUI Buku ini merupakan versi bahasa Indonesia dari buku kami yang berjudul “STEP BY STEP TUTORIALS ON DEEP LEARNING USING SCIKIT-LEARN, KERAS, AND TENSORFLOW WITH PYTHON GUI” yang dapat dilihat di Amazon maupun Google Books. Dalam buku ini, Anda akan mempelajari cara menerapkan TensorFlow, Keras, Scikit-Learn, OpenCV, Pandas, NumPy, dan library lainnya untuk mengimplementasikan deteksi wajah, mata, dan mulut menggunakan Haar Cascades, klasifikasi/prediksi buah, klasifikasi/prediksi kucing/anjing, klasifikasi/prediksi mebel, klasifikasi/prediksi mode (fashion). Pada bab 1, Anda akan belajar bagaimana menggunakan pustaka OpenCV, PIL, NumPy dan pustaka lain untuk melakukan deteksi wajah, mata, dan mulut menggunakan Haar Cascades dengan Python GUI (PyQt). Pada bab 2, Anda akan mempelajari bagaimana memanfaatkan TensorFlow, Keras, Scikit-Learn, OpenCV, Pandas, NumPy dan pustaka-pustaka lain untuk mengimplementasikan klasifikasi buah menggunakan dataset Fruits 360 yang disediakan oleh Kaggle (<https://www.kaggle.com/moltean/fruits/code>). Anda juga akan membangun sebuah GUI untuk tujuan ini. Pada bab 3, Anda akan belajar menerapkan TensorFlow, Keras, Scikit-Learn, OpenCV, Pandas, NumPy dan sejumlah pustaka lain untuk klasifikasi kucing/anjing menggunakan dataset yang disediakan oleh Kaggle (<https://www.kaggle.com/chetankv/dogs-cats-images>). Anda juga akan membangun sebuah GUI untuk tujuan ini. Pada bab 4, Anda akan belajar menggunakan TensorFlow, Keras, Scikit-Learn, OpenCV, Pandas, NumPy dan pustakan lain untuk mendeteksi atau mengklasifikasi mebel menggunakan dataset Furniture Detector yang disediakan oleh Kaggle (<https://www.kaggle.com/akkithetechie/furniture-detector>). Anda juga akan membangun sebuah GUI untuk tujuan ini. Pada bab 5, Anda akan memanfaatkan TensorFlow, Keras, Scikit-Learn, OpenCV, Pandas, NumPy

dan sejumlah modul lain untuk melakukan klasifikasi terhadap citra-citra mode menggunakan dataset Fashion MNIST yang disediakan oleh Kaggle (<https://www.kaggle.com/zalando-research/fashionmnist/code>). Anda juga akan membangun sebuah GUI untuk tujuan ini. BUKU 6: Tutorial Langkah Demi Langkah DEEP LEARNING Menggunakan Scikit-Learn, Keras, Dan TensorFlow Dengan Python GUI Buku ini merupakan versi bahasa Indonesia dari buku kami yang berjudul “Step by Step Tutorials Image Classification Using Scikit-Learn, Keras, and Tensorflow with Python GUI” yang dapat dilihat di Amazon maupun Google Books. Pada bab 1, Anda akan belajar dasar-dasar penggunaan PyQt untuk pemrosesan citra digital. Sejumlah proyek Python GUI yang diimplementasikan di sini adalah mengkonversi citra RGB menjadi keabuan, mengkonversi citra RGB menjadi citra YUV, mengkonversi citra RGB menjadi citra HSV, menapis citra, menampilkan histogram citra, menampilkan histogram citra tertapis, dan memanfaatkan widget checkbox untuk penapisan citra, dan menerapkan ambang batas citra. Pada bab 2, Anda akan memanfaatkan TensorFlow, Keras, Scikit-Learn, OpenCV, Pandas, NumPy dan sejumlah pustaka lain untuk mengklasifikasi spesies monyet menggunakan dataset 10 Monkey Species yang disediakan oleh Kaggle (<https://www.kaggle.com/slothkong/10-monkey-species/download>). Anda juga akan membangun sebuah GUI untuk tujuan ini. Pada bab 3, Pada tutorial ini, Anda akan belajar menerapkan TensorFlow, Keras, Scikit-Learn, OpenCV, Pandas, NumPy dan sejumlah pustakan lain untuk mengklasifikasi batu, kertas, dan gunting menggunakan dataset yang disediakan oleh Kaggle (<https://www.kaggle.com/sanikamal/rock-paper-scissors-dataset/download>). Anda juga akan membangun sebuah GUI untuk tujuan ini. Pada bab 4, Anda akan belajar menerapkan TensorFlow, Keras, Scikit-Learn, OpenCV, Pandas, NumPy dan sejumlah pustaka lain untuk mengklasifikasi pesawat, mobil, dan kapal menggunakan dataset Multiclass-image-dataset-airplane-car-ship yang disediakan oleh Kaggle (<https://www.kaggle.com/abtabm/multiclassimagedatasetairplanecar>). Anda juga akan membangun sebuah GUI untuk tujuan ini. Pada bab 5, Anda akan belajar menggunakan TensorFlow, Keras, Scikit-Learn, OpenCV, Pandas, NumPy dan sejumlah pustaka lain untuk mendeteksi face mask menggunakan dataset Face Mask Detection Dataset yang disediakan oleh Kaggle (<https://www.kaggle.com/omkargurav/face-mask-dataset/download>). Anda juga akan membangun sebuah GUI untuk tujuan ini. BUKU 7: Klasifikasi Citra Berbasis Deep Learning Menggunakan Scikit-Learn, Tensorflow, Dan Keras Dengan Python GUI Buku ini merupakan versi bahasa Indonesia dari buku kami yang berjudul “Project-Based Approach On DEEP LEARNING Using Scikit-Learn, Keras, and Tensorflow with Python GUI” yang dapat dilihat di Amazon maupun Google Books. Dalam buku ini, Anda akan mempelajari cara menerapkan TensorFlow, Keras, Scikit-Learn, OpenCV, Pandas, NumPy, dan library lainnya untuk mengimplementasikan klasifikasi citra. Pada Bab 1, Anda akan menggunakan TensorFlow, Keras, Scikit-Learn, OpenCV, Pandas, NumPy danb sejumlah pustaka lain untuk klasifikasi cuaca menggunakan dataset Multi-class Weather Dataset yang disediakan oleh Kaggle (<https://www.kaggle.com/pratik2901/multiclass-weather-dataset/download>). Pada Bab 2, Anda akan menerapkan TensorFlow, Keras, Scikit-Learn, OpenCV, Pandas, NumPy dan sejumlah pustaka lain untuk mengenali jenis bunga menggunakan dataset Flowers Recognition dataset yang disediakan oleh Kaggle (<https://www.kaggle.com/alxmamaev/flowers-recognition/download>). Anda juga akan membangun sebuah GUI untuk tujuan ini. Pada Bab 3, Anda akan menggunakan TensorFlow, Keras, Scikit-Learn, OpenCV, Pandas, NumPy dan sejumlah pustaka lain untuk mendeteksi plat nomor kendaraan menggunakan dataset Car License Plate Detection yang disediakan oleh Kaggle (<https://www.kaggle.com/andrewmvd/car-plate-detection/download>). Anda juga akan membangun sebuah GUI untuk tujuan ini. Pada Bab 4, Anda akan belajar bagaimana menggunakan TensorFlow, Keras, Scikit-Learn, OpenCV, Pandas, NumPy dan sejumlah pustaka lain untuk melakukan pengenalan bahasa isyarat menggunakan Sign Language Digits Dataset yang disediakan oleh Kaggle (<https://www.kaggle.com/ardamavi/sign-language-digits-dataset/download>). Anda juga akan membangun sebuah GUI untuk tujuan ini. Pada Bab 5, Anda akan belajar bagaimana menerapkan pustaka TensorFlow, Keras, Scikit-Learn, OpenCV, Pandas, NumPy dan sejumlah pustaka lain untuk mendeteksi keretakan permukaan beton menggunakan dataset Surface Crack Detection yang disediakan oleh Kaggle (<https://www.kaggle.com/arunrk7/surface-crack-detection/download>). Anda juga akan membangun sebuah GUI untuk tujuan ini.