
Python Finding Local Maxima Minima With Numpy In A 1d

Essential Tools for Working with Data
Proceedings of the 1st International Conference
on Data Science, Machine Learning and
Applications

A comprehensive introduction to mathematics in
Python for artificial intelligence applications

Human-in-the-Loop Robot Control and Learning

Practical Machine Learning and Image Processing

Learning Scientific Programming with Python

Python Image Processing Cookbook

For Facial Recognition, Object Detection, and
Pattern Recognition Using Python

Second International Workshop, MSTEC 2020,
Guildford, UK, September 14-18, 2020, Revised
Selected Papers

ICDSMLA 2019

Dynamical Systems with Applications using
Python

Mastering Python Scientific Computing

Intelligent Control in Drying

Groundwater-Surface Water Interactions

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First International Conference, MLN 2018, Paris, France, November 27-29, 2018, Revised Selected Papers

Finite Difference Computing with PDEs

Build Deep Neural Networks and Develop Strong Fundamentals using Python's NumPy, and Matplotlib (English Edition)

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Optimization of Integer/Fractional Order Chaotic Systems by Metaheuristics and their Electronic Realization

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An Introduction to Scientific Computing with MATLAB® and Python Tutorials

Explore popular techniques for modeling your data in Python

Over 50 recipes to help you build, train, and

deploy learning agents for real-world applications
Hands-On Transfer Learning with Python
Classical Mechanics
A Computational Approach with Examples Using
Mathematica and Python
A Primer on Scientific Programming with Python
Neural Network for Beginners
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Python
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fun and
educational
projects
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entertain
programmers
while

enhancing
their Python
skills. It picks
up where the
complete
beginner
books leave
off, expanding
on existing
concepts and
introducing
new tools that
you'll use
every day.
And to keep
things
interesting,
each project
includes a
zany twist
featuring
historical
incidents, pop

culture
references,
and literary
allusions.
You'll flex your
problem-
solving skills
and employ
Python's many
useful libraries
to do things
like: - Help
James Bond
crack a high-
tech safe with
a hill-climbing
algorithm -
Write haiku
poems using
Markov Chain
Analysis - Use
genetic
algorithms to

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detecting alien civilizations - Help the world's smartest woman win the Monty Hall problem argument - Reveal Jupiter's Great Red Spot using optical stacking - Save the head of Mary, Queen of Scots with steganography - Foil corporate security with invisible electronic ink Simulate volcanoes, map Mars, and more, all while gaining valuable experience

using free modules like Tkinter, matplotlib, Cprofile, Pylint, Pygame, Pillow, and Python-Docx. Whether you're looking to pick up some new Python skills or just need a pick-me-up, you'll find endless educational, geeky fun with Impractical Python Projects. *Proceedings of the 1st International Conference on Data Science, Machine Learning and Applications* Springer

Nature
This book introduces Python as a powerful tool for the investigation of problems in computational biology, for novices and experienced programmers alike.

A comprehensive introduction to mathematics in Python for artificial intelligence applications

Springer
This book presents select papers from the International Conference on Energy, Material

Sciences and Mechanical Engineering (EMSME) - 2020. The book covers the three core areas of energy, material sciences and mechanical engineering. The topics covered include non-conventional energy resources, energy harvesting, polymers, composites, 2D materials, systems engineering, materials engineering, micro-machining, renewable energy,

industrial engineering and additive manufacturing . This book will be useful to researchers and professionals working in the areas of mechanical and industrial engineering, materials applications, and energy technology. Human-in-the-Loop Robot Control and Learning
Springer
Supercharge options analytics and hedging using the power of Python
Derivatives Analytics with Python shows

you how to implement market-consistent valuation and hedging approaches using advanced financial models, efficient numerical techniques, and the powerful capabilities of the Python programming language. This unique guide offers detailed explanations of all theory, methods, and processes, giving you the background and tools necessary to value stock index options

from a sound foundation. You'll find and use self-contained Python scripts and modules and learn how to apply Python to advanced data and derivatives analytics as you benefit from the 5,000+ lines of code that are provided to help you reproduce the results and graphics presented. Coverage includes market data analysis, risk-neutral valuation, Monte Carlo simulation,

model calibration, valuation, and dynamic hedging, with models that exhibit stochastic volatility, jump components, stochastic short rates, and more. The companion website features all code and IPython Notebooks for immediate execution and automation. Python is gaining ground in the derivatives analytics space, allowing institutions to quickly and

efficiently deliver portfolio, trading, and risk management results. This book is the finance professional's guide to exploiting Python's capabilities for efficient and performing derivatives analytics. Reproduce major stylized facts of equity and options markets yourself Apply Fourier transform techniques and advanced Monte Carlo pricing Calibrate advanced

option pricing models to market data Integrate advanced models and numeric methods to dynamically hedge options Recent developments in the Python ecosystem enable analysts to implement analytics tasks as performing as with C or C++, but using only about one-tenth of the code or even less. Derivatives Analytics with Python — Data Analysis, Models, Simulation,

Calibration and Hedging shows you what you need to know to supercharge your derivatives and risk analytics efforts. *Practical Machine Learning and Image Processing* Springer A complete guide for Python programmers to master scientific computing using Python APIs and tools About This Book The basics of scientific computing to advanced

concepts involving parallel and large scale computation are all covered. Most of the Python APIs and tools used in scientific computing are discussed in detail The concepts are discussed with suitable example programs Who This Book Is For If you are a Python programmer and want to get your hands on scientific computing, this book is for you. The book expects you to have had

exposure to various concepts of Python programming. What You Will Learn Fundamentals and components of scientific computing Scientific computing data management Performing numerical computing using NumPy and SciPy Concepts and programming for symbolic computing using SymPy Using the plotting library matplotlib for data visualization Data analysis

and visualization using Pandas, matplotlib, and IPython Performing parallel and high performance computing Real-life case studies and best practices of scientific computing In Detail In today's world, along with theoretical and experimental work, scientific computing has become an important part of scientific disciplines. Numerical calculations, simulations and computer

modeling in this day and age form the vast majority of both experimental and theoretical papers. In the scientific method, replication and reproducibility are two important contributing factors. A complete and concrete scientific result should be reproducible and replicable. Python is suitable for scientific computing. A large community of users, plenty

of help and documentation, a large collection of scientific libraries and environments, great performance, and good support makes Python a great choice for scientific computing. At present Python is among the top choices for developing scientific workflow and the book targets existing Python developers to master this domain using Python. The main things to learn in the

book are the concept of scientific workflow, managing scientific workflow data and performing computation on this data using Python. The book discusses NumPy, SciPy, SymPy, matplotlib, Pandas and IPython with several example programs. Style and approach This book follows a hands-on approach to explain the complex concepts related to scientific

computing. It details various APIs using appropriate examples.

Learning Scientific Programming with Python

Springer

Nature

Gain insights into image-processing methodologies and algorithms, using machine learning and neural networks in Python. This book begins with the environment setup, understanding basic image-processing terminology, and exploring Python

concepts that will be useful for implementing the algorithms discussed in the book. You will then cover all the core image processing algorithms in detail before moving onto the biggest computer vision library: OpenCV. You'll see the OpenCV algorithms and how to use them for image processing. The next section looks at advanced machine learning and deep learning methods for

image processing and classification. You'll work with concepts such as pulse coupled neural networks, AdaBoost, XG boost, and convolutional neural networks for image-specific applications. Later you'll explore how models are made in real time and then deployed using various DevOps tools. All the concepts in Practical Machine Learning and Image Processing are

explained using real-life scenarios. After reading this book you will be able to apply image processing techniques and make machine learning models for customized application. What You Will Learn Discover image-processing algorithms and their applications using Python Explore image processing using the OpenCV library Use TensorFlow, scikit-learn, NumPy, and

other libraries Work with machine learning and deep learning algorithms for image processing Apply image-processing techniques to five real-time projects Who This Book Is For Data scientists and software developers interested in image processing and computer vision. *Python Image Processing Cookbook* Packt Publishing Ltd Mathematicians have devised different

chaotic systems that are modeled by integer or fractional-order differential equations, and whose mathematical models can generate chaos or hyperchaos. The numerical methods to simulate those integer and fractional-order chaotic systems are quite different and their exactness is responsible in the evaluation of characteristics like Lyapunov exponents, Kaplan-Yorke dimension,

and entropy. One challenge is estimating the step-size to run a numerical method. It can be done by analyzing the eigenvalues of self-excited attractors, while for hidden attractors it is difficult to evaluate the equilibrium points that are required to formulate the Jacobian matrices. Time simulation of fractional-order chaotic oscillators also requires estimating a memory length to

achieve exact results, and it is associated to memories in hardware design. In this manner, simulating chaotic/hyperchaotic oscillators of integer/fractional-order and with self-excited/hidden attractors is quite important to evaluate their Lyapunov exponents, Kaplan-Yorke dimension and entropy. Further, to improve the dynamics of the oscillators, their main characteristics can be optimized

applying metaheuristics, which basically consists of varying the values of the coefficients of a mathematical model. The optimized models can then be implemented using commercially available amplifiers, field-programmable analog arrays (FPAA), field-programmable gate arrays (FPGA), microcontrollers, graphic processing units, and even using nanometer

<p>technology of integrated circuits. The book describes the application of different numerical methods to simulate integer/fractional-order chaotic systems. These methods are used within optimization loops to maximize positive Lyapunov exponents, Kaplan-Yorke dimension, and entropy. Single and multi-objective optimization approaches applying</p>	<p>metaheuristics are described, as well as their tuning techniques to generate feasible solutions that are suitable for electronic implementation. The book details several applications of chaotic oscillators such as in random bit/number generators, cryptography, secure communications, robotics, and Internet of Things. <u>For Facial Recognition, Object Detection, and Pattern Recognition</u></p>	<p><u>Using Python</u> BPB Publications This book constitutes the refereed post-conference proceedings of the Second International Workshop on Model-Driven Simulation and Training Environments for Cybersecurity, MSTEC 2020, held in Guildford, UK, in September 2020 in conjunction with the 24th European Symposium on Research in Computer Security, ESORICS 2020. The</p>
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<p>conference was held virtually due to the COVID-19 pandemic. The MSTECS Workshop received 20 submissions from which 10 full papers were selected for presentation. The papers are grouped in thematically on: cyber security training modelling; serious games; emulation & simulation studies; attacks; security policies.</p> <p><i>Second International</i></p>	<p><i>Workshop, MSTECS 2020, Guildford, UK, September 14-18, 2020, Revised Selected Papers</i></p> <p>Apress With examples and activities that help you achieve real results, applying calculus and statistical methods relevant to advanced data science has never been so easy</p> <p>Key Features Discover how most programmers use the main Python libraries when performing statistics with</p>	<p>Python Use descriptive statistics and visualizations to answer business and scientific questions</p> <p>Solve complicated calculus problems, such as arc length and solids of revolution using derivatives and integrals</p> <p>Book Description Are you looking to start developing artificial intelligence applications? Do you need a refresher on key mathematical</p>
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concepts? Full of engaging practical exercises, The Statistics and Calculus with Python Workshop will show you how to apply your understanding of advanced mathematics in the context of Python. The book begins by giving you a high-level overview of the libraries you'll use while performing statistics with Python. As you progress, you'll perform various mathematical tasks using the Python programming

language, such as solving algebraic functions with Python starting with basic functions, and then working through transformations and solving equations. Later chapters in the book will cover statistics and calculus concepts and how to use them to solve problems and gain useful insights. Finally, you'll study differential equations with an emphasis on numerical methods and

learn about algorithms that directly calculate values of functions. By the end of this book, you'll have learned how to apply essential statistics and calculus concepts to develop robust Python applications that solve business challenges. What you will learn Get to grips with the fundamental mathematical functions in Python Perform calculations on tabular datasets using pandas

Understand the differences between polynomials, rational functions, exponential functions, and trigonometric functions Use algebra techniques for solving systems of equations Solve real-world problems with probability Solve optimization problems with derivatives and integrals Who this book is for If you are a Python programmer who wants to develop intelligent

solutions that solve challenging business problems, then this book is for you. To better grasp the concepts explained in this book, you must have a thorough understanding of advanced mathematical concepts, such as Markov chains, Euler's formula, and Runge-Kutta methods as the book only explains how these techniques and concepts can be implemented in Python.

ICDSMLA

2019 CRC Press
KEY FEATURES
 ● Understand applications like reinforcement learning, automatic driving and image generation. ● Understand neural networks accompanied with figures and charts. ● Learn about determining coefficients and initial values of weights.
DESCRIPTION
 Deep learning helps you solve issues related to data problems as it has a vast array of

mathematical algorithms and has capacity to detect patterns. This book starts with a quick view of deep learning in Python which would include definition, features and applications. You would be learning about perceptron, neural networks, Backpropagation. This book would also give you a clear insight of how to use Numpy and Matplotlib in deep learning models. By the end of the book, you'll

have the knowledge to apply the relevant technologies in deep learning. **WHAT YOU WILL LEARN** ● To develop deep learning applications, use Python with few outside inputs. ● Study several ideas of profound learning and neural networks ● Learn how to determine coefficients of learning and weight values ● Explore applications such as automation, image generation

and reinforcement learning ● Implement trends like batch Normalisation, dropout, and Adam **WHO THIS BOOK IS FOR** Deep Learning from the Basics is for data scientists, data analysts and developers who wish to build efficient solutions by applying deep learning techniques. Individuals who would want a better grasp of technology and an overview. You should have a

workable Python knowledge is a required. NumPy knowledge and pandas will be an advantage, but that's completely optional.	<i>Applications using Python</i>	search optimization, and cluster analysis using Python
TABLE OF CONTENTS 1.	Apress Explore the ever-growing world of genetic algorithms to solve search, optimization, and AI-related tasks, and improve machine learning models using Python	Solve combinatorial problems, optimize functions, and enhance the performance of artificial intelligence applications
Python Introduction 2.	libraries such as DEAP, scikit-learn, and NumPy	Book Description
Perceptron in Depth 3.	as DEAP, scikit-learn, and NumPy	Genetic algorithms are a family of search, optimization, and learning algorithms
Neural Networks 4.	Key Features	inspired by the principles of natural evolution. By imitating the evolutionary process, genetic algorithms
Training Neural Network 5.	Explore the ins and outs of genetic algorithms with this fast-paced guide	
Backpropagation 6.	Implement tasks such as feature selection,	
Neural Network Training Techniques 7.		
CNN 8.		
Deep Learning		
<i>Dynamical Systems with</i>		

can overcome hurdles encountered in traditional search algorithms and provide high-quality solutions for a variety of problems. This book will help you get to grips with a powerful yet simple approach to applying genetic algorithms to a wide range of tasks using Python, covering the latest developments in artificial intelligence. After introducing you to genetic algorithms

and their principles of operation, you'll understand how they differ from traditional algorithms and what types of problems they can solve. You'll then discover how they can be applied to search and optimization problems, such as planning, scheduling, gaming, and analytics. As you advance, you'll also learn how to use genetic algorithms to improve your machine

learning and deep learning models, solve reinforcement learning tasks, and perform image reconstruction . Finally, you'll cover several related technologies that can open up new possibilities for future applications. By the end of this book, you'll have hands-on experience of applying genetic algorithms in artificial intelligence as well as in numerous other domains. What you will

learn Understand how to use state-of-the- art Python tools to create genetic algorithm- based applications Use genetic algorithms to optimize functions and solve planning and scheduling problems Enhance the performance of machine learning models and optimize deep learning network architecture Apply genetic algorithms to reinforcement learning tasks using OpenAI	Gym Explore how images can be reconstructed using a set of semi- transparent shapes Discover other bio-inspired techniques, such as genetic programming and particle swarm optimization Who this book is for This book is for software developers, data scientists, and AI enthusiasts who want to use genetic algorithms to carry out intelligent tasks in their applications.	Working knowledge of Python and basic knowledge of mathematics and computer science will help you get the most out of this book. <u>Mastering Python Scientific Computing</u> Packt Publishing Ltd Build the foundational data science skills necessary to work with and better understand complex data science algorithms. This example- driven book provides complete
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Python coding examples to complement and clarify data science concepts, and enrich the learning experience. Coding examples include visualizations whenever appropriate. The book is a necessary precursor to applying and implementing machine learning algorithms. The book is self-contained. All of the math, statistics, stochastic, and programming skills required

to master the content are covered. In-depth knowledge of object-oriented programming isn't required because complete examples are provided and explained. Data Science Fundamentals with Python and MongoDB is an excellent starting point for those interested in pursuing a career in data science. Like any science, the fundamentals of data science are a prerequisite to competency.

Without proficiency in mathematics, statistics, data manipulation, and coding, the path to success is "rocky" at best. The coding examples in this book are concise, accurate, and complete, and perfectly complement the data science concepts introduced. What You'll Learn Prepare for a career in data science Work with complex data structures in Python Simulate with Monte Carlo

and Stochastic algorithms
 Apply linear algebra using vectors and matrices
 Utilize complex algorithms such as gradient descent and principal component analysis
 Wrangle, cleanse, visualize, and problem solve with data
 Use MongoDB and JSON to work with data
 Who This Book Is For
 The novice yearning to break into the data science world, and the enthusiast looking to enrich, deepen, and develop data science skills through mastering the underlying fundamentals that are sometimes skipped over in the rush to be productive.
 Some knowledge of object-oriented programming will make learning easier.
[Intelligent Control in Drying](#)
 Springer
 Increase the performance of various neural network architectures using NEAT, HyperNEAT, ES-HyperNEAT, Novelty Search, SAFE, and deep neuroevolution Key Features
 Implement neuroevolution algorithms to improve the performance of neural network architectures
 Understand evolutionary algorithms and neuroevolution methods with real-world examples
 Learn essential neuroevolution concepts and how they are used in domains

including games, robotics, and simulations

Book Description

Neuroevolution is a form of artificial intelligence learning that uses evolutionary algorithms to simplify the process of solving complex tasks in domains such as games, robotics, and the simulation of natural processes. This book will give you comprehensive insights into essential neuroevolution concepts

and equip you with the skills you need to apply neuroevolution-based algorithms to solve practical, real-world problems. You'll start with learning the key neuroevolution concepts and methods by writing code with Python. You'll also get hands-on experience with popular Python libraries and cover examples of classical reinforcement learning, path planning for

autonomous agents, and developing agents to autonomously play Atari games. Next, you'll learn to solve common and not-so-common challenges in natural computing using neuroevolution-based algorithms. Later, you'll understand how to apply neuroevolution strategies to existing neural network designs to improve training and inference performance. Finally, you'll gain clear

insights into the topology of neural networks and how neuroevolution allows you to develop complex networks, starting with simple ones. By the end of this book, you will not only have explored existing neuroevolution-based algorithms, but also have the skills you need to apply them in your research and work assignments. What you will learn Discover the most popular neuroevolutio

n algorithms - NEAT, HyperNEAT, and ES-HyperNEAT Explore how to implement neuroevolution-based algorithms in Python Get up to speed with advanced visualization tools to examine evolved neural network graphs Understand how to examine the results of experiments and analyze algorithm performance Delve into neuroevolution techniques to improve the performance

of existing methods Apply deep neuroevolution to develop agents for playing Atari games Who this book is for This book is for machine learning practitioners, deep learning researchers, and AI enthusiasts who are looking to implement neuroevolution algorithms from scratch. Working knowledge of the Python programming language and basic knowledge of deep learning and neural

networks are mandatory. Groundwater-Surface Water Interactions Packt Publishing Ltd Bringing together idiomatic Python programming, foundational numerical methods, and physics applications, this is an ideal standalone textbook for courses on computational physics. All the frequently used numerical methods in physics are explained, including foundational techniques

and hidden gems on topics such as linear algebra, differential equations, root-finding, interpolation, and integration. Accompanying the mathematical derivations are full implementations of dozens of numerical methods in Python, as well as more than 250 end-of-chapter problems. Numerical methods and physics examples are clearly separated, allowing this introductory

book to be later used as a reference; the penultimate section in each chapter is an in depth project, tackling physics problems which cannot be solved without the use of a computer. Written primarily for students studying computational physics, this textbook brings the non-specialist quickly up to speed with Python before looking in detail at the numerical methods often

used in the subject.

Impractical Python

Projects John

Wiley & Sons

This book presents computer programming as a key method for solving mathematical problems. There are two versions of the book, one for MATLAB and one for Python. The book was inspired by the Springer book TCSE 6: A Primer on Scientific Programming with Python (by Langtangen), but the style

is more accessible and concise, in keeping with the needs of engineering students. The book outlines the shortest possible path from no previous experience with programming to a set of skills that allows the students to write simple programs for solving common mathematical problems with numerical methods in engineering and science courses. The emphasis is on generic

algorithms, clean design of programs, use of functions, and automatic tests for verification.

Model-driven Simulation and Training Environments for Cybersecurity

Packt

Publishing Ltd

This textbook provides a broad introduction to continuous and discrete dynamical systems. With its hands-on approach, the text leads the reader from basic theory to recently published research

material in nonlinear ordinary differential equations, nonlinear optics, multifractals, neural networks, and binary oscillator computing. Dynamical Systems with Applications Using Python takes advantage of Python's extensive visualization, simulation, and algorithmic tools to study those topics in nonlinear dynamical systems through numerical

algorithms and generated diagrams. After a tutorial introduction to Python, the first part of the book deals with continuous systems using differential equations, including both ordinary and delay differential equations. The second part of the book deals with discrete dynamical systems and progresses to the study of both continuous and discrete systems in contexts like chaos control and

synchronizatio n, neural networks, and binary oscillator computing. These later sections are useful reference material for undergraduate student projects. The book is rounded off with example coursework to challenge students' programming abilities and Python-based exam questions. This book will appeal to advanced undergraduate and graduate students,

applied mathematicians, engineers, and researchers in a range of disciplines, such as biology, chemistry, computing, economics, and physics. Since it provides a survey of dynamical systems, a familiarity with linear algebra, real and complex analysis, calculus, and ordinary differential equations is necessary, and knowledge of a programming

language like C or Java is beneficial but not essential. **Python** Mercury Learning and Information For many researchers, Python is a first-class tool mainly because of its libraries for storing, manipulating, and gaining insight from data. Several resources exist for individual pieces of this data science stack, but only with the Python Data Science Handbook do you get them all—Python,

NumPy, Pandas, Matplotlib, Scikit-Learn, and other related tools. Working scientists and data crunchers familiar with reading and writing Python code will find this comprehensive desk reference ideal for tackling day-to-day issues: manipulating, transforming, and cleaning data; visualizing different types of data; and using data to build statistical or machine

learning models. Quite simply, this is the must-have reference for scientific computing in Python. With this handbook, you'll learn how to use: IPython and Jupyter: provide computational environments for data scientists using Python NumPy: includes the ndarray for efficient storage and manipulation of dense data arrays in Python Pandas: features the DataFrame for efficient

storage and manipulation of labeled/columnar data in Python Matplotlib: includes capabilities for a flexible range of data visualizations in Python Scikit-Learn: for efficient and clean Python implementations of the most important and established machine learning algorithms **Playful Programming Activities to Make You Smarter** MDPI Explore Keras, scikit-image, open source

computer vision (OpenCV), Matplotlib, and a wide range of other Python tools and frameworks to solve real-world image processing problems Key Features Discover solutions to complex image processing tasks using Python tools such as scikit-image and Keras Learn popular concepts such as machine learning, deep learning, and neural networks for image

processing
Explore
common and
not-so-
common
challenges
faced in image
processing
Book
Description
With the
advancements
in wireless
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people with
digital image
processing
skills in order
to extract
useful
information
from the ever-
growing
volume of
images. This
book provides
comprehensiv

e coverage of
the relevant
tools and
algorithms,
and guides
you through
analysis and
visualization
for image
processing.
With the help
of over 60
cutting-edge
recipes, you'll
address
common
challenges in
image
processing
and learn how
to perform
complex tasks
such as object
detection,
image
segmentation,
and image
reconstruction
using large
hybrid
datasets.
Dedicated

sections will
also take you
through
implementing
various image
enhancement
and image
restoration
techniques,
such as
cartooning,
gradient
blending, and
sparse
dictionary
learning. As
you advance,
you'll get to
grips with face
morphing and
image
segmentation
techniques.
With an
emphasis on
practical
solutions, this
book will help
you apply
deep learning
techniques
such as

transfer learning and fine-tuning to solve real-world problems. By the end of this book, you'll be proficient in utilizing the capabilities of the Python ecosystem to implement various image processing techniques effectively. What you will learn
Implement supervised and unsupervised machine learning algorithms for image processing
Use deep neural network

models for advanced image processing tasks
Perform image classification, object detection, and face recognition
Apply image segmentation and registration techniques on medical images to assist doctors
Use classical image processing and deep learning methods for image restoration
Implement text detection in images using Tesseract, the

optical character recognition (OCR) engine
Understand image enhancement techniques such as gradient blending
Who this book is for
This book is for image processing engineers, computer vision engineers, software developers, machine learning engineers, or anyone who wants to become well-versed with image processing techniques and methods

using a recipe-based approach. Although no image processing knowledge is expected, prior Python coding experience is necessary to understand key concepts covered in the book.

First International Conference, MLN 2018, Paris, France, November 27-29, 2018, Revised Selected Papers
Springer Nature

The purpose of this book is two-fold, we focus on

detailed coverage of deep learning and transfer learning, comparing and contrasting the two with easy-to-follow concepts and examples. The second area of focus is on real-world examples and research problems using TensorFlow, Keras and Python ecosystem with hands-on examples. *Finite Difference Computing with PDEs*
Cambridge University Press

Recent years have seen a paradigm shift in our understanding of groundwater-surface water interactions: surface water and aquifers were long considered discrete, separate entities; they are now understood as integral components of a surface-subsurface continuum. This book provides an overview of current research advances and innovative approaches in

groundwater-surface water interactions. The 20 research articles and 1 communication cover a wide range of thematic scopes, scales, and experimental and modelling methods across different disciplines (hydrology, aquatic ecology, biogeochemistry, and environmental pollution). The book identifies current knowledge gaps and reveals the challenges in establishing standardized measurement, observation, and assessment approaches. It includes current hot topics with environmental and societal relevance such as eutrophication, retention of legacy, and emerging pollutants (e.g., pharmaceuticals and microplastics), urban water interfaces, and climate change impacts. The book demonstrates the relevance of processes at groundwater-surface water interfaces for (1) regional water balances and (2) quality and quantity of drinking water resources. As such, this book represents the long-awaited transfer of the above-mentioned paradigm shift in understanding of groundwater-surface water interactions from science to practice.

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