
Learn 2 Model English Edition

Mastering Classification Algorithms for Machine Learning

Athenaeum and Literary Chronicle

Hands-On Machine Learning with Scikit-Learn, Keras, and TensorFlow

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Digital-Age Teaching for English Learners

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Introduction to Machine Learning

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40 Algorithms Every Data Scientist Should Know

Foundations of Machine Learning, second edition

Mathematics for Machine Learning

Deep Learning
Interpretable Machine Learning
Deep Learning for Data Architects
Learning Google Cloud Vertex AI
Optimizing AI and Machine Learning Solutions
Understanding Machine Learning
Learn Python Generative AI
Design Patterns of Deep Learning with TensorFlow
Python Machine Learning Projects
Resources in Education
Information Theory, Inference and Learning Algorithms
Machine Learning
Machine Learning
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MATIAS MOODY

Mastering Classification Algorithms for Machine Learning BPB Publications

Introduces machine learning and its algorithmic paradigms, explaining the principles behind automated learning approaches and the considerations underlying their usage.

Athenaeum and Literary Chronicle BPB Publications

A practical guide to mastering Classification algorithms for Machine learning
KEY FEATURES ● Get familiar with all the state-of-the-art classification algorithms for machine learning. ● Understand the mathematical foundations behind building machine learning models. ● Learn how to apply machine learning models to solve real-world industry

problems. **DESCRIPTION** Classification algorithms are essential in machine learning as they allow us to make predictions about the class or category of an input by considering its features. These algorithms have a significant impact on multiple applications like spam filtering, sentiment analysis, image recognition, and fraud detection. If you want to expand your knowledge about classification algorithms, this book is the ideal resource

for you. The book starts with an introduction to problem-solving in machine learning and subsequently focuses on classification problems. It then explores the Naïve Bayes algorithm, a probabilistic method widely used in industrial applications. The application of Bayes Theorem and underlying assumptions in developing the Naïve Bayes algorithm for classification is also covered. Moving forward, the book centers its attention on the Logistic Regression algorithm, exploring the sigmoid function and its significance in binary classification. The book also covers Decision Trees and discusses the Gini Factor, Entropy, and their use in splitting trees and generating decision leaves. The Random Forest algorithm is also thoroughly explained as a cutting-edge method for classification (and regression). The book concludes by exploring practical applications such as Spam Detection, Customer Segmentation, Disease Classification, Malware Detection in JPEG and ELF Files, Emotion Analysis from Speech, and Image Classification. By the end of the book, you will become proficient in utilizing classification algorithms for solving complex machine

learning problems. **WHAT YOU WILL LEARN**

- Learn how to apply Naïve Bayes algorithm to solve real-world classification problems.
- Explore the concept of K-Nearest Neighbor algorithm for classification tasks.
- Dive into the Logistic Regression algorithm for classification.
- Explore techniques like Bagging and Random Forest to overcome the weaknesses of Decision Trees.
- Learn how to combine multiple models to improve classification accuracy and robustness.

WHO THIS BOOK IS FOR This book is for Machine Learning Engineers, Data Scientists, Data Science Enthusiasts, Researchers, Computer Programmers, and Students who are interested in exploring a wide range of algorithms utilized for classification tasks in machine learning.

TABLE OF CONTENTS

1. Introduction to Machine Learning
2. Naïve Bayes Algorithm
3. K-Nearest Neighbor Algorithm
4. Logistic Regression
5. Decision Tree Algorithm
6. Ensemble Models
7. Random Forest Algorithm
8. Boosting Algorithm

Annexure 1: Jupyter Notebook
Annexure 2: Python
Annexure 3: Singular Value Decomposition
Annexure 4: Preprocessing Textual Data
Annexure 5: Stemming and

Lamentation
Annexure 6: Vectorizers
Annexure 7: Encoders
Annexure 8: Entropy

Hands-On Machine Learning with Scikit-Learn, Keras, and TensorFlow MIT Press

Learn how to build an end-to-end data to AI solution on Google Cloud using Vertex AI

KEY FEATURES

- Harness the power of AutoML capabilities to build machine learning models.
- Learn how to train custom machine learning models on the Google Cloud Platform.
- Accelerate your career in data analytics by leveraging the capabilities of GCP.

DESCRIPTION Google Cloud Vertex AI is a platform for machine learning (ML) offered by Google Cloud, with the objective of making the creation, deployment, and administration of ML models on a large scale easier. If you are seeking a unified and collaborative environment for your ML projects, this book is a valuable resource for you. This comprehensive guide is designed to help data enthusiasts effectively utilize Google Cloud Platform's Vertex AI for a wide range of machine learning operations. It covers the basics of the Google Cloud Platform, encompassing cloud storage, big query, and IAM. Subsequently, it delves into the

specifics of Vertex AI, including AutoML, custom model training, model deployment on endpoints, development of Vertex AI pipelines, and the Explainable AI feature store. By the time you finish reading this book, you will be able to navigate Vertex AI proficiently, even if you lack prior experience with cloud platforms. With the inclusion of numerous code examples throughout the book, you will be equipped with the necessary skills and confidence to create machine learning solutions using Vertex AI.

WHAT YOU WILL LEARN

- Learn how to create projects, store data in GCP, and manage access permissions effectively.
- Discover how AutoML can be utilized for streamlining workflows.
- Learn how to construct pipelines using TFX (TensorFlow Extended) and Kubeflow components.
- Gain an overview of the purpose and significance of the Feature Store.
- Explore the concept of explainable AI and its role in understanding machine learning models.

WHO THIS BOOK IS FOR This book is designed for data scientists and advanced AI practitioners who are interested in learning how to perform machine learning tasks on the Google Cloud Platform.

Having prior knowledge of machine learning concepts and proficiency in Python programming would greatly benefit readers.

TABLE OF CONTENTS

1. Basics of Google Cloud Platform
2. Introduction to Vertex AI and AutoML Tabular
3. AutoML Image, Text, and Pre-built Models
4. Vertex AI Workbench and Custom Model Training
5. Vertex AI Custom Model Hyperparameter and Deployment
6. Introduction to Pipelines and Kubeflow
7. Pipelines using Kubeflow for Custom Models
8. Pipelines using TensorFlow Extended
9. Vertex AI Feature Store
10. Explainable AI

Learn Data Science from Scratch BPB Publications

Primer into the multidisciplinary world of Data Science

KEY FEATURES

- Explore and use the key concepts of Statistics required to solve data science problems - Use Docker, Jenkins, and Git for Continuous Development and Continuous Integration of your web app - Learn how to build Data Science solutions with GCP and AWS

DESCRIPTION The book will initially explain the What-Why of Data Science and the process of solving a Data Science problem. The fundamental concepts of

Data Science, such as Statistics, Machine Learning, Business Intelligence, Data pipeline, and Cloud Computing, will also be discussed. All the topics will be explained with an example problem and will show how the industry approaches to solve such a problem. The book will pose questions to the learners to solve the problems and build the problem-solving aptitude and effectively learn. The book uses Mathematics wherever necessary and will show you how it is implemented using Python with the help of an example dataset.

WHAT WILL YOU LEARN

- Understand the multi-disciplinary nature of Data Science - Get familiar with the key concepts in Mathematics and Statistics - Explore a few key ML algorithms and their use cases - Learn how to implement the basics of Data Pipelines - Get an overview of Cloud Computing & DevOps - Learn how to create visualizations using Tableau

WHO THIS BOOK IS FOR This book is ideal for Data Science enthusiasts who want to explore various aspects of Data Science. Useful for Academicians, Business owners, and Researchers for a quick reference on industrial practices in Data Science.

TABLE OF CONTENTS

1. Data Science in

Practice 2. Mathematics Essentials 3. Statistics Essentials 4. Exploratory Data Analysis 5. Data preprocessing 6. Feature Engineering 7. Machine learning algorithms 8. Productionizing ML models 9. Data Flows in Enterprises 10. Introduction to Databases 11. Introduction to Big Data 12. DevOps for Data Science 13. Introduction to Cloud Computing 14. Deploy Model to Cloud 15. Introduction to Business Intelligence 16. Data Visualization Tools 17. Industry Use Case 1 18. Industry Use Case 2 19. PeopleReporter 19. Data Science Learning Resources 20. Do It Your Self Challenges 21. MCQs for Assessments
Digital-Age Teaching for English Learners
 MIT Press

DESCRIPTION Our book is divided into several useful concepts and techniques of machine learning. This book serves as a valuable resource for individuals seeking to deepen their understanding of advanced topics in this field. Learn about various learning algorithms, including supervised, unsupervised, and reinforcement learning, and their mathematical foundations. Discover the significance of feature engineering and

selection for enhancing model performance. Understand model evaluation metrics like accuracy, precision, recall, and F1-score, along with techniques like cross-validation and grid search for model selection. Explore ensemble learning methods along with deep learning, unsupervised learning, time series analysis, and reinforcement learning techniques. Lastly, uncover real-world applications of the machine and deep learning algorithms. After reading this book, readers will gain a comprehensive understanding of machine learning fundamentals and advanced techniques. With this knowledge, readers will be equipped to tackle real-world problems, make informed decisions, and develop innovative solutions using machine and deep learning algorithms. **KEY FEATURES**

- Basic understanding of machine learning algorithms via MATLAB, R, and Python.
- Inclusion of examples related to real-world problems, case studies, and questions related to futuristic technologies.
- Adding futuristic technologies related to machine learning and deep learning.

WHAT YOU WILL LEARN

- Ability to tackle complex machine

learning problems.

- Understanding of foundations, algorithms, ethical issues, and how to implement each learning algorithm for their own use/ with their data.
- Efficient data analysis for real-time data will be understood by researchers/ students.
- Using data analysis in near future topics and cutting-edge technologies.

WHO THIS BOOK IS FOR This book is ideal for students, professors, and researchers. It equips industry experts and academics with the technical know-how and practical implementations of machine learning algorithms.

TABLE OF CONTENTS

1. Introduction to Machine Learning
2. Statistical Analysis
3. Linear Regression
4. Logistic Regression
5. Decision Trees
6. Random Forest
7. Rule-Based Classifiers
8. Naïve Bayesian Classifier
9. K-Nearest Neighbors Classifiers
10. Support Vector Machine
11. K-Means Clustering
12. Dimensionality Reduction
13. Association Rules Mining and FP Growth
14. Reinforcement Learning
15. Applications of ML Algorithms
16. Applications of Deep Learning
17. Advance Topics and Future Directions

Hands-on Supervised Learning with Python BPB Publications

Architecting AI: Design patterns for building deep learning products
KEY FEATURES ● Master foundational concepts in design patterns of deep learning. ● Benefit from practical insights shared by an industry professional. ● Learn to build data products using deep learning.
DESCRIPTION Design Patterns of Deep Learning with TensorFlow is your comprehensive guide to learning deep learning from a design pattern perspective. In this book, we explore deep learning within the context of building hyper-personalization models, exploring its applications across various industries and scenarios. It starts by showing how deep learning enhances retail through customer segmentation and data analysis. You will learn neural networks, computer vision with CNNs, and NLP for analyzing customer behavior. This book addresses challenges like uneven data and optimizing models with techniques like backpropagation, hyperparameter tuning, and transfer learning. Finally, it covers setting up data pipelines and deploying your system. With practical tips and actionable advice, this book equips readers with the skills and strategies

needed to thrive in today's competitive AI landscape. By the end of this book, you will be equipped with the knowledge and practical skills to build and deploy deep learning-powered hyper-personalization systems that deliver exceptional customer experiences.
WHAT YOU WILL LEARN ● Understand about hyper-personalized AI models for tailored user experiences. ● Design principles of computer vision and NLP models. ● Inner working of transformers equipping readers to understand the intricacies of generative AI and large language models (LLMs) like ChatGPT. ● To get the best out of deep learning models through hyperparameter tuning and transfer learning. ● Learn how to build deployment pipelines to serve models into production environments seamlessly.
WHO THIS BOOK IS FOR This book caters to both beginners and experienced practitioners in the field of data science and Machine Learning. Through practical examples, it simplifies complex ideas, linking them to design patterns.
TABLE OF CONTENTS 1. Customer Hyper-personalization 2. Introduction to Design Patterns and Neural Networks 3. Design Patterns in Visual

Representation Learning 4. Design Patterns for Non-Visual Representation Learning 5. Design Patterns for Transformers 6. Data Distribution Challenges and Strategies 7. Model Training Philosophies 8. Hyperparameter Tuning 9. Transfer Learning 10. Setting Up Data and Deployment Pipelines
[Practical Mathematics for AI and Deep Learning](#) "O'Reilly Media, Inc."
 A comprehensive guide to Deep Learning for Beginners
KEY FEATURES ● Learn how to design your own neural network efficiently. ● Learn how to build and train Recurrent Neural Networks (RNNs). ● Understand how encoding and decoding work in Deep Neural Networks.
DESCRIPTION Deep Learning has become increasingly important due to the growing need to process and make sense of vast amounts of data in various fields. If you want to gain a deeper understanding of the techniques and implementations of deep learning, then this book is for you. The book presents you with a thorough introduction to AI and Machine learning, starting from the basics and progressing to a comprehensive coverage of Deep Learning with Python. You will be

introduced to the intuition of Neural Networks and how to design and train them effectively. Moving on, you will learn how to use Convolutional Neural Networks for image recognition and other visual tasks. The book then focuses on localization and object detection, which are crucial tasks in many applications, including self-driving cars and robotics. You will also learn how to use Deep Learning algorithms to identify and locate objects in images and videos. In addition, you will gain knowledge on how to create and train Recurrent Neural Networks (RNNs), as well as explore more advanced variations of RNNs. Lastly, you will learn about Generative Adversarial Networks (GAN), which are used for tasks like image generation and style transfer.

WHAT YOU WILL LEARN

- Learn how to work efficiently with various Convolutional models.
- Learn how to utilize the You Only Look Once (YOLO) framework for object detection and localization.
- Understand how to use Recurrent Neural Networks for Sequence Learning.
- Learn how to solve the vanishing gradient problem with LSTM.
- Distinguish between fake and real images using various

Generative Adversarial Networks.

WHO THIS BOOK IS FOR This book is intended for both current and aspiring Data Science and AI professionals, as well as students of engineering, computer applications, and masters programs interested in Deep learning.

TABLE OF CONTENTS

1. Basics of Artificial Intelligence and Machine Learning
2. Introduction to Deep Learning with Python
3. Intuition of Neural Networks
4. Convolutional Neural Networks
5. Localization and Object Detection
6. Sequence Modeling in Neural Networks and Recurrent Neural Networks (RNN)
7. Gated Recurrent Unit, Long Short-Term Memory, and Siamese Networks
8. Generative Adversarial Networks

Deep Learning on Microcontrollers BPB Publications

A problem-focused guide for tackling industrial machine learning issues with methods and frameworks chosen by experts.

KEY FEATURES

- Popular techniques for problem formulation, data collection, and data cleaning in machine learning.
- Comprehensive and useful machine learning tools such as MLFlow, Streamlit, and many more.
- Covers numerous machine learning libraries,

including Tensorflow, FastAI, Scikit-Learn, Pandas, and Numpy.

DESCRIPTION This book discusses how to apply machine learning to real-world problems by utilizing real-world data. In this book, you will investigate data sources, become acquainted with data pipelines, and practice how machine learning works through numerous examples and case studies. The book begins with high-level concepts and implementation (with code!) and progresses towards the real-world of ML systems. It briefly discusses various concepts of Statistics and Linear Algebra. You will learn how to formulate a problem, collect data, build a model, and tune it. You will learn about use cases for data analytics, computer vision, and natural language processing. You will also explore nonlinear architecture, thus enabling you to build models with multiple inputs and outputs. You will get trained on creating a machine learning profile, various machine learning libraries, Statistics, and FAST API. Throughout the book, you will use Python to experiment with machine learning libraries such as Tensorflow, Scikit-learn, Spacy, and FastAI. The book will help train our models on both Kaggle and our

datasets. **WHAT YOU WILL LEARN** ● Construct a machine learning problem, evaluate the feasibility, and gather and clean data. ● Learn to explore data first, select, and train machine learning models. ● Fine-tune the chosen model, deploy, and monitor it in production. ● Discover popular models for data analytics, computer vision, and Natural Language Processing. ● Create a machine learning profile and contribute to the community. **WHO THIS BOOK IS FOR** This book caters to beginners in machine learning, software engineers, and students who want to gain a good understanding of machine learning concepts and create production-ready ML systems. This book assumes you have a beginner-level understanding of Python. **TABLE OF CONTENTS** 1. Introduction to Machine Learning 2. Problem Formulation in Machine Learning 3. Data Acquisition and Cleaning 4. Exploratory Data Analysis 5. Model Building and Tuning 6. Taking Our Model into Production 7. Data Analytics Use Case 8. Building a Custom Image Classifier from Scratch 9. Building a News Summarization App Using Transformers 10. Multiple Inputs and Multiple Output Models 11. Contributing to

the Community 12. Creating Your Project 13. Crash Course in Numpy, Matplotlib, and Pandas 14. Crash Course in Linear Algebra and Statistics 15. Crash Course in FastAPI [Bihar STET : Teaching Art and Other Skills Book 2024 \(English Edition\) - Secondary and Higher Secondary Teacher Eligibility Test - 21 Practice Tests](#) BPB Publications **Concepts of Machine Learning with Practical Approaches.** **KEY FEATURES** ● Includes real-scenario examples to explain the working of Machine Learning algorithms. ● Includes graphical and statistical representation to simplify modeling Machine Learning and Neural Networks. ● Full of Python codes, numerous exercises, and model question papers for data science students. **DESCRIPTION** The book offers the readers the fundamental concepts of Machine Learning techniques in a user-friendly language. The book aims to give in-depth knowledge of the different Machine Learning (ML) algorithms and the practical implementation of the various ML approaches. This book covers different Supervised Machine Learning algorithms such as Linear Regression Model, Naïve

Bayes classifier Decision Tree, K-nearest neighbor, Logistic Regression, Support Vector Machine, Random forest algorithms, Unsupervised Machine Learning algorithms such as k-means clustering, Hierarchical Clustering, Probabilistic clustering, Association rule mining, Apriori Algorithm, f-p growth algorithm, Gaussian mixture model and Reinforcement Learning algorithm such as Markov Decision Process (MDP), Bellman equations, policy evaluation using Monte Carlo, Policy iteration and Value iteration, Q-Learning, State-Action-Reward-State-Action (SARSA). It also includes various feature extraction and feature selection techniques, the Recommender System, and a brief overview of Deep Learning. By the end of this book, the reader can understand Machine Learning concepts and easily implement various ML algorithms to real-world problems. **WHAT YOU WILL LEARN** ● Perform feature extraction and feature selection techniques. ● Learn to select the best Machine Learning algorithm for a given problem. ● Get a stronghold in using popular Python libraries like Scikit-learn, pandas, and matplotlib. ● Practice how to

implement different types of Machine Learning techniques. ● Learn about Artificial Neural Network along with the Back Propagation Algorithm. ● Make use of various recommended systems with powerful algorithms. WHO THIS BOOK IS FOR This book is designed for data science and analytics students, academicians, and researchers who want to explore the concepts of machine learning and practice the understanding of real cases. Knowing basic statistical and programming concepts would be good, although not mandatory. TABLE OF CONTENTS 1. Introduction 2. Supervised Learning Algorithms 3. Unsupervised Learning 4. Introduction to the Statistical Learning Theory 5. Semi-Supervised Learning and Reinforcement Learning 6. Recommended Systems
Mastering OpenCV with Python EduGorilla Community Pvt. Ltd.
 Build high-impact ML/AI solutions by optimizing each step KEY FEATURES ● Build and fine-tune models for maximum performance. ● Practical tips to make your own state-of-the-art AI/ML models. ● ML/AI problem solving tips with multiple case studies to tackle real-world challenges.

DESCRIPTION This book approaches data science solution building using a principled framework and case studies with extensive hands-on guidance. It will teach the readers optimization at each step, whether it is problem formulation or hyperparameter tuning for deep learning models. This book keeps the reader pragmatic and guides them toward practical solutions by discussing the essential ML concepts, including problem formulation, data preparation, and evaluation techniques. Further, the reader will be able to learn how to apply model optimization with advanced algorithms, hyperparameter tuning, and strategies against overfitting. They will also benefit from deep learning by optimizing models for image processing, natural language processing, and specialized applications. The reader can put theory into practice with hands-on case studies and code examples, reinforcing their understanding. With this book, the reader will be able to create high-impact, high-value ML/AI solutions by optimizing each step of the solution building process, which is the ultimate goal of every data science professional. WHAT YOU WILL LEARN ●

End-to-end solutions to ML/AI problems. ● Data augmentation and transfer learning. ● Optimizing AI/ML solutions at each step of development. ● Multiple hands-on real case studies. ● Choose between various ML/AI models. WHO THIS BOOK IS FOR This book empowers data scientists, developers, and AI enthusiasts at all levels to unlock the full potential of their ML solutions. This guide equips you to become a confident AI optimization expert. TABLE OF CONTENTS 1. Optimizing a Machine Learning /Artificial Intelligence Solution 2. ML Problem Formulation: Setting the Right Objective 3. Data Collection and Pre-processing 4. Model Evaluation and Debugging 5. Imbalanced Machine Learning 6. Hyper-parameter Tuning 7. Parameter Optimization Algorithms 8. Optimizing Deep Learning Models 9. Optimizing Image Models 10. Optimizing Natural Language Processing Models 11. Transfer Learning
Learning in Two Worlds Longman Publishing Group
 Traditional books on machine learning can be divided into two groups- those aimed at advanced undergraduates or early postgraduates with reasonable

mathematical knowledge and those that are primers on how to code algorithms. The field is ready for a text that not only demonstrates how to use the algorithms that make up machine learning methods, but

Applied Machine Learning Solutions with Python MIT Press

Turn raw data into meaningful solutions
KEY FEATURES ● Complete guide to master data science basics. ● Practical and hands-on examples in ML, deep learning, and NLP. ● Drive innovation and improve decision making through the power of data. **DESCRIPTION** Learn Data Science from Scratch equips you with the essential tools and techniques, from Python libraries to machine learning algorithms, to tackle real-world problems and make informed decisions. This book provides a thorough exploration of essential data science concepts, tools, and techniques. Starting with the fundamentals of data science, you will progress through data collection, web scraping, data exploration and visualization, and data cleaning and pre-processing. You will build the required foundation in statistics and probability

before diving into machine learning algorithms, deep learning, natural language processing, recommender systems, and data storage systems. With hands-on examples and practical advice, each chapter offers valuable insights and key takeaways, empowering you to master the art of data-driven decision making. By the end of this book, you will be well-equipped with the essential skills and knowledge to navigate the exciting world of data science. You will be able to collect, analyze, and interpret data, build and evaluate machine learning models, and effectively communicate your findings, making you a valuable asset in any data-driven environment. **WHAT YOU WILL LEARN** ● Master key data science tools like Python, NumPy, Pandas, and more. ● Build a strong foundation in statistics and probability for data analysis. ● Learn and apply machine learning, from regression to deep learning. ● Expertise in NLP and recommender systems for advanced analytics. ● End-to-end data project from data collection to model deployment, with planning and execution. **WHO THIS BOOK IS FOR** This book is ideal for beginners with a basic understanding of

programming, particularly in Python, and a foundational knowledge of mathematics. It is well-suited for aspiring data scientists and analysts. **TABLE OF CONTENTS** 1. Unraveling the Data Science Universe: An Introduction 2. Essential Python Libraries and Tools for Data Science 3. Statistics and Probability Essentials for Data Science 4. Data Mining Expedition: Web Scraping and Data Collection Techniques 5. Painting with Data: Exploration and Visualization 6. Data Alchemy: Cleaning and Preprocessing Raw Data 7. Machine Learning Magic: An Introduction to Predictive Modeling 8. Exploring Regression: Linear, Logistic, and Advanced Methods 9. Unveiling Patterns with k-Nearest Neighbors and Naïve Bayes 10. Exploring Tree-Based Models: Decision Trees to Gradient Boosting 11. Support Vector Machines: Simplifying Complexity 12. Dimensionality Reduction: From PCA to Advanced Methods 13. Unlocking Unsupervised Learning 14. The Essence of Neural Networks and Deep Learning 15. Word Play: Text Analytics and Natural Language Processing 16. Crafting Recommender Systems 17. Data Storage Mastery: Databases and Efficient Data Management 18. Data Science in Action: A

Comprehensive End-to-end Project
Data Science for Business

Professionals BPB Publications

Bridge the Digital Divide with Research-Informed Technology Models Since the first edition of this bestselling resource many schools are still striving to close the digital divide and bridge the opportunity gap for historically marginalized students, including English learners. And the need for technology-infused lessons specifically aligned for English learners is even more critically needed. Building from significant developments in education policy, research, and remote learning innovations, this newly revised edition offers unique ways to bridge the digital divide that disproportionately affects culturally and linguistically diverse learners. Designed to support equitable access to engaging and enriching digital-age education opportunities for English learners, this book includes Research-informed and evidence-based technology integration models and instructional strategies Sample lesson ideas, including learning targets for activating students' prior knowledge while promoting engagement and collaboration Tips for fostering

collaborative practices with colleagues Vignettes from educators incorporating technology in creative ways Targeted questions to facilitate discussions about English language development methodology Complete with supplementary tools and resources, this guide provides all of the methodology resources needed to bridge the digital divide and promote learning success for all students.

Advanced Machine Learning

Cambridge University Press

A step-by-step guide that will teach you how to deploy TinyML on microcontrollers
 KEY FEATURES ● Deploy machine learning models on edge devices with ease. ● Leverage pre-built AI models and deploy them without writing any code. ● Create smart and efficient IoT solutions with TinyML. DESCRIPTION TinyML, or Tiny Machine Learning, is used to enable machine learning on resource-constrained devices, such as microcontrollers and embedded systems. If you want to leverage these low-cost, low-power but strangely powerful devices, then this book is for you. This book aims to increase accessibility to TinyML applications,

particularly for professionals who lack the resources or expertise to develop and deploy them on microcontroller-based boards. The book starts by giving a brief introduction to Artificial Intelligence, including classical methods for solving complex problems. It also familiarizes you with the different ML model development and deployment tools, libraries, and frameworks suitable for embedded devices and microcontrollers. The book will then help you build an Air gesture digit recognition system using the Arduino Nano RP2040 board and an AI project for recognizing keywords using the Syntiant TinyML board. Lastly, the book summarizes the concepts covered and provides a brief introduction to topics such as zero-shot learning, one-shot learning, federated learning, and MLOps. By the end of the book, you will be able to develop and deploy end-to-end Tiny ML solutions with ease. WHAT YOU WILL LEARN ● Learn how to build a Keyword recognition system using the Syntiant TinyML board. ● Learn how to build an air gesture digit recognition system using the Arduino Nano RP2040. ● Learn how to test and deploy models on Edge Impulse and

Arduino IDE. ● Get tips to enhance system-level performance. ● Explore different real-world use cases of TinyML across various industries. WHO THIS BOOK IS FOR The book is for IoT developers, System engineers, Software engineers, Hardware engineers, and professionals who are interested in integrating AI into their work. This book is a valuable resource for Engineering undergraduates who are interested in learning about microcontrollers and IoT devices but may not know where to begin. TABLE OF CONTENTS 1. Introduction to AI 2. Traditional ML Lifecycle 3. TinyML Hardware and Software Platforms 4. End-to-End TinyML Deployment Phases 5. Real World Use Cases 6. Practical Experiments with TinyML 7. Advance Implementation with TinyML Board 8. Continuous Improvement 9. Conclusion

HSSC TGT Science Exam Book 2023 (English Edition) | Haryana Staff Selection Commission : Trained Graduate Teacher | 15 Practice Tests (1500 Solved MCQs) BPB Publications

This book is about making machine learning models and their decisions interpretable. After exploring the concepts

of interpretability, you will learn about simple, interpretable models such as decision trees, decision rules and linear regression. Later chapters focus on general model-agnostic methods for interpreting black box models like feature importance and accumulated local effects and explaining individual predictions with Shapley values and LIME. All interpretation methods are explained in depth and discussed critically. How do they work under the hood? What are their strengths and weaknesses? How can their outputs be interpreted? This book will enable you to select and correctly apply the interpretation method that is most suitable for your machine learning project.

Introduction to Machine Learning BPB Publications

This book presents a new, detailed examination that explains how elegant brains have been shaped in evolution. It consists of 19 chapters written by academic professionals in neuroscience, opening with the origin of single-celled creatures and then introducing primordial types in invertebrates with the great abundance of the brains of vertebrates. Important topics are provided in a timely

manner, because novel techniques emerged rapidly—as seen, for examples, in the next-generation sequencers and omics approaches. With the explosion of big data, neural-related genes and molecules is now on the radar. In fact, Europe’s big science and technology projects, a €1 billion plan called the Human Brain Project and the Blue Brain Project to understand mammalian brain networks, have been launched in recent years. Furthermore, with the rise of recently advanced artificial intelligence, there is great enthusiasm for understanding the evolution of neural networks. The views from brain evolution in nature provide an essential opportunity to generate ideas for novel neuron- and brain-inspired computation. The ambition behind this book is that it will stimulate young scientists who seek a deeper understanding in order to find the basic principles shaping brains that provided higher cognitive functions in the course of evolution.

Applied Deep Learning Orange Education Pvt Ltd

An introduction to a broad range of topics in deep learning, covering mathematical

and conceptual background, deep learning techniques used in industry, and research perspectives. “Written by three experts in the field, Deep Learning is the only comprehensive book on the subject.”
—Elon Musk, cochair of OpenAI; cofounder and CEO of Tesla and SpaceX
Deep learning is a form of machine learning that enables computers to learn from experience and understand the world in terms of a hierarchy of concepts. Because the computer gathers knowledge from experience, there is no need for a human computer operator to formally specify all the knowledge that the computer needs. The hierarchy of concepts allows the computer to learn complicated concepts by building them out of simpler ones; a graph of these hierarchies would be many layers deep. This book introduces a broad range of topics in deep learning. The text offers mathematical and conceptual background, covering relevant concepts in linear algebra, probability theory and information theory, numerical computation, and machine learning. It describes deep learning techniques used by practitioners in industry, including deep feedforward networks, regularization,

optimization algorithms, convolutional networks, sequence modeling, and practical methodology; and it surveys such applications as natural language processing, speech recognition, computer vision, online recommendation systems, bioinformatics, and videogames. Finally, the book offers research perspectives, covering such theoretical topics as linear factor models, autoencoders, representation learning, structured probabilistic models, Monte Carlo methods, the partition function, approximate inference, and deep generative models. Deep Learning can be used by undergraduate or graduate students planning careers in either industry or research, and by software engineers who want to begin using deep learning in their products or platforms. A website offers supplementary material for both readers and instructors.
[Building Transformer Models with PyTorch 2.0](#) BPB Publications
DESCRIPTION Mastering AI and ML algorithms is essential for data scientists. This book covers a wide range of techniques, from supervised and unsupervised learning to deep learning

and reinforcement learning. This book is a compass to the most important algorithms that every data scientist should have at their disposal when building a new AI/ML application. This book offers a thorough introduction to AI and ML, covering key concepts, data structures, and various algorithms like linear regression, decision trees, and neural networks. It explores learning techniques like supervised, unsupervised, and semi-supervised learning and applies them to real-world scenarios such as natural language processing and computer vision. With clear explanations, code examples, and detailed descriptions of 40 algorithms, including their mathematical foundations and practical applications, this resource is ideal for both beginners and experienced professionals looking to deepen their understanding of AI and ML. The final part of the book gives an outlook for more state-of-the-art algorithms that will have the potential to change the world of AI and ML fundamentals. KEY FEATURES ● Covers a wide range of AI and ML algorithms, from foundational concepts to advanced techniques. ● Includes real-world examples and code snippets to illustrate

the application of algorithms. ● Explains complex topics in a clear and accessible manner, making it suitable for learners of all levels. **WHAT YOU WILL LEARN** ● Differences between supervised, unsupervised, and reinforcement learning. ● Gain expertise in data cleaning, feature engineering, and handling different data formats. ● Learn to implement and apply algorithms such as linear regression, decision trees, neural networks, and support vector machines. ● Creating intelligent systems and solving real-world problems. ● Learn to approach AI and ML challenges with a structured and analytical mindset. **WHO THIS BOOK IS FOR** This book is ideal for data scientists, ML engineers, and anyone interested in entering the world of AI. **TABLE OF CONTENTS** 1. Fundamentals 2. Typical Data Structures 3. 40 AI/ML Algorithms Overview 4. Basic Supervised Learning Algorithms 5. Advanced Supervised Learning Algorithms 6. Basic Unsupervised Learning Algorithms 7. Advanced Unsupervised Learning Algorithms 8. Basic Reinforcement Learning Algorithms 9. Advanced Reinforcement Learning Algorithms 10. Basic Semi-Supervised

Learning Algorithms 11. Advanced Semi-Supervised Learning Algorithms 12. Natural Language Processing 13. Computer Vision 14. Large-Scale Algorithms 15. Outlook into the Future: Quantum Machine Learning
Bihar STET Paper II : Computer Science 2024 (English Edition) | Higher Secondary (Class 11 & 12) - Bihar School Examination Board (BSEB) - 10 Practice Tests EduGorilla Community Pvt. Ltd.

Through a series of recent breakthroughs, deep learning has boosted the entire field of machine learning. Now, even programmers who know close to nothing about this technology can use simple, efficient tools to implement programs capable of learning from data. This practical book shows you how. By using concrete examples, minimal theory, and two production-ready Python frameworks—Scikit-Learn and TensorFlow—author Aurélien Géron helps you gain an intuitive understanding of the concepts and tools for building intelligent systems. You'll learn a range of techniques, starting with simple linear regression and progressing to deep neural

networks. With exercises in each chapter to help you apply what you've learned, all you need is programming experience to get started. Explore the machine learning landscape, particularly neural nets Use Scikit-Learn to track an example machine-learning project end-to-end Explore several training models, including support vector machines, decision trees, random forests, and ensemble methods Use the TensorFlow library to build and train neural nets Dive into neural net architectures, including convolutional nets, recurrent nets, and deep reinforcement learning Learn techniques for training and scaling deep neural nets

Brain Evolution by Design BPB Publications

Explore the world of Artificial Intelligence with a deep understanding of Machine Learning concepts and algorithms **KEY FEATURES** ● A detailed study of mathematical concepts, Machine Learning concepts, and techniques. ● Discusses methods for evaluating model performances and interpreting results. ● Explores all types of Machine Learning (supervised, unsupervised, reinforcement, association rule mining, artificial neural

network) in detail. ● Comprises numerous review questions and programming exercises at the end of every chapter. DESCRIPTION "Simplified Machine Learning" is a comprehensive guide that navigates readers through the intricate landscape of Machine Learning, offering a balanced blend of theory, algorithms, and practical applications. The first section introduces foundational concepts such as supervised and unsupervised learning, regression, classification, clustering, and feature engineering, providing a solid base in Machine Learning theory. The second section explores algorithms like decision trees, support vector machines, and neural networks, explaining their functions, strengths, and limitations, with a special focus on deep learning, reinforcement learning, and ensemble methods. The book also covers essential

topics like model evaluation, hyperparameter tuning, and model interpretability. The final section transitions from theory to practice, equipping readers with hands-on experience in deploying models, building scalable systems, and understanding ethical considerations. By the end, readers will be able to leverage Machine Learning effectively in their respective fields, armed with practical skills and a strategic approach to problem-solving. WHAT YOU WILL LEARN ● Solid foundation in Machine Learning principles, algorithms, and methodologies. ● Implementation of Machine Learning models using popular libraries like NumPy, Pandas, PyTorch, or scikit-learn. ● Knowledge about selecting appropriate models, evaluating their performance, and tuning hyperparameters. ● Techniques to pre-

process and engineer features for Machine Learning models. ● To frame real-world problems as Machine Learning tasks and apply appropriate techniques to solve them. WHO THIS BOOK IS FOR This book is designed for a diverse audience interested in Machine Learning, a core branch of Artificial Intelligence. Its intellectual coverage will benefit students, programmers, researchers, educators, AI enthusiasts, software engineers, and data scientists. TABLE OF CONTENTS 1. Introduction to Machine Learning 2. Data Pre-processing 3. Supervised Learning: Regression 4. Supervised Learning: Classification 5. Unsupervised Learning: Clustering 6. Dimensionality Reduction and Feature Selection 7. Association Rule Mining 8. Artificial Neural Network 9. Reinforcement Learning 10. Project Appendix Bibliography