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Intelligent Automation with VMware : Apply Machine Learning Techniques to VMware Virtualization and Networking. Packt Publishing, 2019.

Abstract :

Use self-driven data centers to reduce management complexity by deploying Infrastructure as Code to gain value from investments. Key Features Add smart capabilities in VMware Workspace ONE to deliver customer insights and improve overall security. Optimize your HPC and big data infrastructure with the help of machine learning. Automate your VMware data center operations with machine learning Book Description. This book presents an introductory perspective on how machine learning plays an important role in a VMware environment. It offers a basic understanding of how to leverage machine learning primitives, along with a deeper look into integration with the VMware tools used for automation today. This book begins by highlighting how VMware addresses business issues related to its workforce, customers, and partners with emerging technologies such as machine learning to create new, intelligence-driven, end user experiences. You will learn how to apply machine learning techniques incorporated in VMware solutions for data center operations. You will go through management toolsets with a focus on machine learning techniques. At the end of the book, you will learn how the new vSphere Scale-Out edition can be used to ensure that HPC, big data performance, and other requirements can be met (either through development or by fine-tuning guidelines) with mainstream products. What you will learn Orchestrate on-demand deployments based on defined policies. Automate away common problems and make life easier by reducing errors Deliver services to end users rather than to virtual machines. Reduce rework in a multi-layered scalable manner in any cloud. Explore the centralized life cycle management of hybrid clouds. Use common code so you can run it across any cloud Who this book is for. This book is intended for those planning, designing, and implementing the virtualization/cloud components of the Software-Defined Data Center foundational infrastructure. It helps users to put intelligence in their automation tasks to get self driving data center. It is assumed that the reader has knowledge of, and some familiarity with, virtualization concepts and related topics, including storage, security, and networking.

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Amita Kapoor

Hands-On Artificial Intelligence for IoT : Expert Machine Learning and Deep Learning Techniques for Developing Smarter IoT Systems. Packt Publishing, 2019.

Abstract :

Build smarter systems by combining artificial intelligence and the Internet of Things—two of the most talked about topics today. Key Features Leverage the power of Python libraries such as Tensor. Flow and Keras to work with real-time IoT data. Process IoT data and predict outcomes in real time to build smart IoT modelsCover practical case studies on industrial IoT, smart cities, and home automation. Book Description. There are many applications that use data science and analytics to gain insights from terabytes of data. These apps, however, do not address the challenge of continually discovering patterns for IoT data. In Hands-On Artificial Intelligence for IoT, we cover various aspects of artificial intelligence (AI) and its implementation to make your IoT solutions smarter. This book starts by covering the process of gathering and preprocessing IoT data gathered from distributed sources. You will learn different AI techniques such as machine learning, deep learning, reinforcement learning, and natural language processing to build smart IoT systems. You will also leverage the power of AI to handle real-time data coming from

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Brett Lantz

Machine Learning with R : Expert Techniques for Predictive Modeling, 3rd Edition. Packt Publishing, 2019.

Abstract :

Solve real-world data problems with R and machine learning Key Features. Third edition of the bestselling, widely acclaimed R machine learning book, updated and improved for R 3.6 and beyond Harness the power of R to build flexible, effective, and transparent machine learning models Learn quickly with a clear, hands-on guide by experienced machine learning teacher and practitioner, Brett Lantz Book Description Machine learning, at its core, is concerned with transforming data into actionable knowledge. R offers a powerful set of machine learning methods to quickly and easily gain insight from your data. Machine Learning with R, Third Edition provides a hands-on, readable guide to applying machine learning to real-world problems. Whether you are an experienced R user or new to the language, Brett Lantz teaches you everything you need to uncover key insights, make new predictions, and visualize your findings. This new 3rd edition updates the classic R data science book to R 3.6 with newer and better libraries, advice on ethical and bias issues in machine learning, and an introduction to deep learning. Find powerful new insights in your data; discover machine learning with R. What you will learn Discover the origins of machine learning and how exactly a computer learns by example Prepare your data for machine learning work with the R programming language. Classify important outcomes using nearest neighbor and Bayesian methods Predict future events using decision trees, rules, and support vector machines Forecast numeric data and estimate financial values using regression methods Model complex processes with artificial neural networks — the basis of deep learning Avoid bias in machine learning models Evaluate your models and improve their performance. Connect R to SQL databases and emerging big data technologies such as Spark, H2O, and Tensor Flow Who this book is for. Data scientists, students, and other practitioners who want a clear, accessible guide to machine learning with R.

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Cory Lesmeister

Mastering Machine Learning with R : Advanced Machine Learning Techniques for Building Smart Applications with R 3.5, 3rd Edition. Packt Publishing, 2019.

Abstract :

Stay updated with expert techniques for solving data analytics and machine learning challenges and gain insights from complex projects and power up your applications Key Features Build independent machine learning (ML) systems leveraging the best features of R 3.5 Understand and apply different machine learning techniques using real-world examples. Use methods such as multi-class classification, regression, and clustering Book Description Given the growing popularity of the R-zero-cost statistical programming environment, there has never been a better time to start applying ML to your data. This book will teach you advanced techniques in ML, using the latest code in R 3.5. You will delve into various complex features of supervised learning, unsupervised learning, and reinforcement learning algorithms to design efficient and powerful ML models. This newly updated edition is packed with fresh examples covering a range of tasks from different domains. Mastering Machine Learning with R starts by showing you how to quickly manipulate data and prepare it for analysis. You will explore simple and complex models and understand how to compare them. You'll also learn to use the latest library support, such as Tensor Flow and Keras-R, for performing advanced computations. Additionally, you'll explore complex topics, such as natural language processing (NLP), time series analysis, and clustering, which will further refine your skills in developing applications. Each chapter will help you implement advanced ML algorithms using real-world examples. You'll even be introduced to reinforcement learning, along with its various use cases and models. In the concluding chapters, you'll get a glimpse into how some of these black box models can be diagnosed and understood. By the end of this book, you'll be equipped with the skills to deploy ML techniques in your own projects or at work.

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Dipayan Sarkar; Vijayalakshmi Natarajan

Ensemble Machine Learning Cookbook : Over 35 Practical Recipes to Explore Ensemble Machine Learning Techniques Using Python. Packt Publishing, 2019.

Abstract :

Implement machine learning algorithms to build ensemble models using Keras, H2O, Scikit-Learn, Pandas and more Key Features Apply popular machine learning algorithms using a recipe-based approach Implement boosting, bagging, and stacking ensemble methods to improve machine learning models. Discover real-world ensemble applications and encounter complex challenges in Kaggle competitions. Book Description Ensemble modeling is an approach used to improve the performance of machine learning models. It combines two or more similar or dissimilar machine learning algorithms to deliver superior intellectual powers. This book will help you to implement popular machine learning algorithms to cover different paradigms of ensemble machine learning such as boosting, bagging, and stacking. The Ensemble Machine Learning Cookbook will start by getting you acquainted with the basics of ensemble techniques and exploratory data analysis. You'll then learn to implement tasks related to statistical and machine learning algorithms to understand the ensemble of multiple heterogeneous algorithms. It will also ensure that you don't miss out on key topics, such as like resampling methods. As you progress, you'll get a better understanding of bagging, boosting, stacking, and working with the Random Forest algorithm using real-world examples. The book will highlight how these ensemble methods use multiple models to improve machine learning results, as compared to a single model. In the concluding chapters, you'll delve into advanced ensemble models using neural networks, natural language processing, and more.

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Dr. Sunil Kumar Chinnamgari

R Machine Learning Projects : Implement Supervised, Unsupervised, and Reinforcement Learning Techniques Using R 3.5. Packt Publishing, 2019.

Abstract :

Master a range of machine learning domains with real-world projects using Tensor Flow for R, H2O, MXNet, and more Key Features Master machine learning, deep learning, and predictive modeling concepts in R 3.5 Build intelligent end-to-end projects for finance, retail, social media, and a variety of domains Implement smart cognitive models with helpful tips and best practices Book Description R is one of the most popular languages when it comes to performing computational statistics (statistical computing) easily and exploring the mathematical side of machine learning. With this book, you will leverage the R ecosystem to build efficient machine learning applications that carry out intelligent tasks within your organization. This book will help you test your knowledge and skills, guiding you on how to build easily through to complex machine learning projects. You will first learn how to build powerful machine learning models with ensembles to predict employee attrition. Next, you'll implement a joke recommendation engine and learn how to perform sentiment analysis on Amazon reviews. You'll also explore different clustering techniques to segment customers using wholesale data. In addition to this, the book will get you acquainted with credit card fraud detection using auto encoders, and reinforcement learning to make predictions and win on a casino slot machine. By the end of the book, you will be equipped to confidently perform complex tasks to build research and commercial projects for automated operations. What you will learn Explore deep neural networks and various frameworks that can be used in R Develop a joke recommendation engine to recommend jokes that match users' tastes Create powerful ML models with ensembles to predict employee attrition. Build auto encoders for credit card fraud detection Work with image recognition and convolutional neural networks Make predictions for casino slot machine using reinforcement learning Implement NLP techniques for sentiment analysis and customer segmentation Who this book is for If you're a data analyst, data scientist, or machine learning developer who wants to master machine learning concepts using R by building real-world projects, this is the book for you. Each project will help you test your skills in implementing machine learning algorithms and techniques. A basic understanding of machine learning and working knowledge of R programming is necessary to get the most out of this book.

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Gacovski, Zoran

Soft Computing and Machine Learning with Python. Arcler Press, 2019.

Abstract :

Soft computing and machine learning with python examines various aspects of machine learning with python with a detailed information on soft computing. It includes four different sections, where section 1 and 2 are dedicated towards soft computing theory and machine learning techniques and on the other hand section 3 and 4 are dedicated to the details of python language and machine learning with python. The book provides the reader with the insights into the development of python and machine learning, so as to understand the classification multigraph models of secondary RNA structure using graph-theoretic descriptors.

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Giuseppe Bonaccorso

Hands-On Unsupervised Learning with Python : Implement Machine Learning and Deep Learning Models Using Scikit-Learn, TensorFlow, and More. Packt Publishing, 2019.

Abstract :

Discover the skill-sets required to implement various approaches to Machine Learning with Python Key Features. Explore unsupervised learning with clustering, auto encoders, restricted Boltzmann machines, and more. Build your own neural network models using modern Python libraries Practical examples show you how to implement different machine learning and deep learning techniques. Book Description Unsupervised learning is about making use of raw, untagged data and applying learning algorithms to it to help a machine predict its outcome. With this book, you will explore the concept of unsupervised learning to cluster large sets of data and analyze them repeatedly until the desired outcome is found using Python. This book starts with the key differences between supervised, unsupervised, and semi-supervised learning. You will be introduced to the best-used libraries and frameworks from the Python ecosystem and address unsupervised learning in both the machine learning and deep learning domains. You will explore various algorithms, techniques that are used to implement unsupervised learning in real-world use cases. You will learn a variety of unsupervised learning approaches, including randomized optimization, clustering, feature selection and transformation, and information theory. You will get hands-on experience with how neural networks can be employed in unsupervised scenarios. You will also explore the steps involved in building and training a GAN in order to process images. By the end of this book, you will have learned the art of unsupervised learning for different real-world challenges. What you will learn. Use cluster algorithms to identify and optimize natural groups of data. Explore advanced non-linear and hierarchical clustering in action. Soft label assignments for fuzzy c-means and Gaussian mixture models. Detect anomalies through density estimation Perform principal component analysis using neural network models. Create unsupervised models using GANs. Who this book is for. This book is intended for statisticians, data scientists, machine learning developers, and deep learning practitioners who want to build smart applications by implementing key building block unsupervised learning, and master all the new techniques and algorithms offered in machine learning and deep learning using real-world examples. Some prior knowledge of machine learning concepts and statistics is desirable.

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John N. Moye Ph.D

A Machine Learning, Artificial Intelligence Approach to Institutional Effectiveness in Higher Education. Emerald Publishing Limited, 2019.

Abstract :

The Institutional Research profession is currently experimenting with many strategies to assess institutional effectiveness in a manner that reflects the letter and spirit of their unique mission, vision, and values. While a 'best-practices' approach to the measurement and assessment of institutional functions is prevalent in the literature, a machine learning approach that synthesizes these parts into a coherent and synergistic approach has not emerged. A Machine Learning, Artificial Intelligence Approach to Institutional Effectiveness in Higher Education presents a practical, effective, and systematic approach to the measurement, assessment, and sense making of institutional performance. Included are instruments and strategies to measure and assess the performance of Curriculum, Learning, Instruction, Support Services, and Program Feasibility as well as a meaningful Environmental Scanning method. The data collected in this system are organized into assessments of institutional effectiveness through the application of machine learning data processes that create an artificial intelligence model of actual institutional performance from the raw performance data. This artificial intelligence is visualized through five organizational sense making approaches to monitor, demonstrate, and improve institutional performance. Thus, this book provides a set of tools that can be adopted or adapted to the specific intentions of any institution, making it an invaluable resource for Higher Education administrators, leaders and practitioners.

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Klevis Ramo

Hands-On Java Deep Learning for Computer Vision : Implement Machine Learning and Neural Network Methodologies to Perform Computer Vision-related Tasks. Packt Publishing, 2019.

Abstract :

Leverage the power of Java and deep learning to build production-grade Computer Vision applications Key Features. Build real-world Computer Vision applications using the power of neural networks Implement image classification, object detection, and face recognition. Know best practices on effectively building and deploying deep learning models in Java Book Description. Although machine learning is an exciting world to explore, you may feel confused by all of its theoretical aspects. As a Java developer, you will be used to telling the computer exactly what to do, instead of being shown how data is generated; this causes many developers to struggle to adapt to machine learning. The goal of this book is to walk you through the process of efficiently training machine learning and deep learning models for Computer Vision using the most up-to-date techniques. The book is designed to familiarize you with neural networks, enabling you to train them efficiently, customize existing state-of-the-art architectures, build real-world Java applications, and get great results in a short space of time. You will build real-world Computer Vision applications, ranging from a simple Java handwritten digit recognition model to real-time Java autonomous car driving systems and face recognition models. By the end of this book, you will have mastered the best practices and modern techniques needed to build advanced Computer Vision Java applications and achieve production-grade accuracy. What you will learn Discover neural networks and their applications in Computer Vision. Explore the popular Java frameworks and libraries for deep learning. Build deep neural networks in Java Implement an end-to-end image classification application in Java Perform real-time video object detection using deep learning. Enhance performance and deploy applications for production. Who this book is for. This book is for data scientists, machine learning developers and deep learning practitioners with Java knowledge who want to implement machine learning and deep neural networks in the computer vision domain.

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Rahul Kumar

Machine Learning Quick Reference : Quick and Essential Machine Learning Hacks for Training Smart Data Models. Packt Publishing, 2019.

Abstract :

Your hands-on reference guide to developing, training, and optimizing your machine learning models

Key Features Your guide to learning efficient machine learning processes from scratch. Explore expert techniques and hacks for a variety of machine learning concepts. Write effective code in R, Python, Scala, and Spark to solve all your machine learning problems.

Book Description Machine learning makes it possible to learn about the unknowns and gain hidden insights into your datasets by mastering many tools and techniques. This book guides you to do just that in a very compact manner. After giving a quick overview of what machine learning is all about, Machine Learning Quick Reference jumps right into its core algorithms and demonstrates how they can be applied to real-world scenarios. From model evaluation to optimizing their performance, this book will introduce you to the best practices in machine learning. Furthermore, you will also look at the more advanced aspects such as training neural networks and work with different kinds of data, such as text, time-series, and sequential data. Advanced methods and techniques such as causal inference, deep Gaussian processes, and more are also covered. By the end of this book, you will be able to train fast, accurate machine learning models at your fingertips, which you can easily use as a point of reference.

What you will learn. Get a quick rundown of model selection, statistical modeling, and cross-validation. Choose the best machine learning algorithm to solve your problem. Explore kernel learning, neural networks, and time-series analysis. Train deep learning models and optimize them for maximum performance. Briefly cover Bayesian techniques and sentiment analysis in your NLP solution

Implement probabilistic graphical models and causal inferences Measure and optimize the performance of your machine learning models.

Who this book is for If you're a machine learning practitioner, data scientist, machine learning developer, or engineer, this book will serve as a reference point in building machine learning solutions. You will also find this book useful if you're an intermediate machine learning developer or data scientist looking for a quick, handy reference to all the concepts of machine learning. You'll need some exposure to machine learning to get the best out of this book.

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Rich Collier; Bahaaldine Azarmi

Machine Learning with the Elastic Stack : Expert Techniques to Integrate Machine Learning with Distributed Search and Analytics. Packt Publishing, 2019.

Abstract :

Leverage Elastic Stack's machine learning features to gain valuable insight from your data
Key Features
Combine machine learning with the analytic capabilities of Elastic Stack
Analyze large volumes of search data and gain actionable insight from them
Use external analytical tools with your Elastic Stack to improve its performance
Book Description
Machine Learning with the Elastic Stack is a comprehensive overview of the embedded commercial features of anomaly detection and forecasting. The book starts with installing and setting up Elastic Stack. You will perform time series analysis on varied kinds of data, such as log files, network flows, application metrics, and financial data. As you progress through the chapters, you will deploy machine learning within the Elastic Stack for logging, security, and metrics. In the concluding chapters, you will see how machine learning jobs can be automatically distributed and managed across the Elastic search cluster and made resilient to failure. By the end of this book, you will understand the performance aspects of incorporating machine learning within the Elastic ecosystem and create anomaly detection jobs and view results from Kibana directly. What you will learn. Install the Elastic Stack to use machine learning features Understand how Elastic machine learning is used to detect a variety of anomaly types. Apply effective anomaly detection to IT operations and security analytics Leverage the output of Elastic machine learning in custom views, dashboards, and proactive alerting Combine your created jobs to correlate anomalies of different layers of infrastructure Learn various tips and tricks to get the most out of Elastic machine learning Who this book is for If you are a data professional eager to gain insight on Elastic search data without having to rely on a machine learning specialist or custom development, Machine Learning with the Elastic Stack is for you. Those looking to integrate machine learning within their search and analytics applications will also find this book very useful. Prior experience with the Elastic Stack is needed to get the most out of this book.

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Santanu Pattanayak

Intelligent Projects Using Python : 9 Real-world AI Projects Leveraging Machine Learning and Deep Learning with TensorFlow and Keras. Packt Publishing, 2019.

Abstract :

Implement machine learning and deep learning methodologies to build smart, cognitive AI projects using Python Key Features. A go-to guide to help you master AI algorithms and concepts8 real-world projects tackling different challenges in healthcare, e-commerce, and surveillance Use Tensor Flow, Keras, and other Python libraries to implement smart AI applications Book Description. This book will be a perfect companion if you want to build insightful projects from leading AI domains using Python. The book covers detailed implementation of projects from all the core disciplines of AI. We start by covering the basics of how to create smart systems using machine learning and deep learning techniques. You will assimilate various neural network architectures such as CNN, RNN, LSTM, to solve critical new world challenges. You will learn to train a model to detect diabetic retinopathy conditions in the human eye and create an intelligent system for performing a video-to-text translation. You will use the transfer learning technique in the healthcare domain and implement style transfer using GANs. Later you will learn to build AI-based recommendation systems, a mobile app for sentiment analysis and a powerful chat bot for carrying customer services. You will implement AI techniques in the cybersecurity domain to generate Captchas. Later you will train and build autonomous vehicles to self-drive using reinforcement learning. You will be using libraries from the Python ecosystem such as Tensor Flow, Keras and more to bring the core aspects of machine learning, deep learning, and AI. By the end of this book, you will be skilled to build your own smart models for tackling any kind of AI problems without any hassle.

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Tavis D. Jules; Florin D. Salajan

The Educational Intelligent Economy : Big Data, Artificial Intelligence, Machine Learning and the Internet of Things in Education. Emerald Publishing Limited, 2019.

Abstract :

Access to big data, the “new commodity” for the 21st century economies, and its uses and potential abuses, has both conceptual and methodological impacts for the field of comparative and international education. This book examines, from a comparative perspective, the impact of the movement from the so-called knowledge-based economy towards the Intelligent Economy, which is premised upon the application of knowledge. Knowledge, the central component of the knowledge-based economy, is becoming less important in an era that is projected to be dominated and defined by the integration of complex technologies under the banner of the fourth industrial revolution. In this new era that blends the physical with the cyber-physical, the rise of education intelligence means that clients including countries, organizations, and other stakeholders are equipped with cutting-edge data in the form of predicative analytics, and knowledge about global educational predictions of future outcomes and trends. In this sense, this timely volume links the advent of this new technological revolution to the world of governance and policy formulation in education in order to open a broader discussion about the systemic and human implications for education of the emerging intelligent economy. By providing a unique comparative perspective on the Educational Intelligent economy, this book will prove invaluable for researchers and scholars in the areas of comparative education, artificial intelligence and educational policy.

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