

A Deeper Understanding Of Spark S Internals

The CGIAR Research Program (CRP) on Aquatic Agricultural Systems (AAS) led by WorldFish aims to lift millions of people out of poverty and promote positive, transformative change in aquatic agricultural development. The AAS program recognizes that gender and power inequalities between men and women, which are reinforced at all levels of society, are key factors perpetuating poverty. One of the AAS themes aims to engage men as an integral part of its gender-transformative approach to the questioning and fundamental altering of unequal power relations and structures. These goals require the creation of spaces for critical reflection and action focused on harmful masculinities and their effects on the lives of women, girls, and men themselves – in combination with other approaches. However, thematically relevant resources (i.e. those that provide a conceptual and programmatic approach to such reflection with men and boys) have been lacking. To help fill this gap, this manual was developed by Promundo, based on experiences training in AAS country “hubs” (i.e. geographic locations providing a focus for innovation, learning, and impact through innovation research) in 2014 and informed by other resources related to the engagement of men and boys.

This book introduces Apache Spark, the open source cluster computing system that makes data analytics fast to write and fast to run. You'll learn how to express parallel jobs with just a few lines of code, and cover applications from simple batch jobs to stream processing and machine learning.--

In the second edition of this practical book, four Cloudera data scientists present a set of self-contained patterns for performing large-scale data analysis with Spark. The authors bring Spark, statistical methods, and real-world data sets together to teach you how to approach analytics problems by example. Updated for Spark 2.1, this edition acts as an introduction to these techniques and other best practices in Spark programming. You'll start with an introduction to Spark and its ecosystem, and then dive into patterns that apply common techniques—including classification, clustering, collaborative filtering, and anomaly detection—to fields such as genomics, security, and finance. If you have an entry-level understanding of machine learning and statistics, and you program in Java, Python, or Scala, you'll find the book's patterns useful for working on your own data applications. With this book, you will:

- Familiarize yourself with the Spark programming model
- Become comfortable within the Spark ecosystem
- Learn general approaches in data science
- Examine complete implementations that analyze large public data sets
- Discover which machine learning tools make sense for particular problems
- Acquire code that can be adapted to many uses

The term big data refers to extremely large sets of data that are analyzed to reveal insights, such as patterns, trends, and associations. The algorithms that analyze this data to provide these insights must extract value from a wide range of data sources, including business data and live, streaming, social media data.

However, the real value of these insights comes from their timeliness. Rapid delivery of insights enables anyone (not only data scientists) to make effective decisions, applying deep intelligence to every enterprise application. Apache Spark is an integrated analytics framework and runtime to accelerate and simplify algorithm development, deployment, and realization of business insight from analytics. Apache Spark on IBM® z/OS® puts the open source engine, augmented with unique differentiated features, built specifically for data science, where big data resides. This IBM Redbooks® publication describes the installation and configuration of IBM z/OS Platform for Apache Spark for field teams and clients. Additionally, it includes examples of business analytics scenarios.

And they shall beat their swords into plowshares and their spears into pruning hooks; nation shall not lift up sword against nation. Neither shall they learn war anymore... This is the prophesy of Isaiah, promising the world what it yearns for--a perfect future, a future without war, without hunger, without strife. That such a future awaits us, Isaiah says, is a promise from G-d. When it will dawn is up to us. In *Awakening the Spark Within*, Rabbi Yitzchak Ginsburgh explains how every Jew?man, woman, and child?can live up to this awesome responsibility by cultivating in everyday personal life his or her own innate sparks of leadership. He shows how seemingly insignificant individual efforts can have world-changing consequences and bring the prophetic vision of the future to its ultimate fulfillment. Includes glossary, footnotes, and index.

How can I help my children to thrive and prosper? How can I ensure that they won't become unhappy and frustrated, as I've been? These are the questions that inspired Sonia Choquette to write this profound and accessible book explaining—through spiritual principles, modern-day parables, and practical exercises—how even busy parents can help children connect to their own source of Divine guidance. As Sonia says, "Connecting to our intuition unites us with both our soul and the soul of the Universe, Divine Spirit. It takes away our fearful sense of isolation and inadequacy. It replaces fear with a sense of spiritual direction and safety. The world becomes friendly, nonadversarial, and welcoming. Life becomes joyful, amusing, generous, and abundant. This is the Divine plan. The intuitive life is one of confidence, inner peace, and creative expression. What better gift to give ourselves and our children?"

Faith is essential to our spiritual growth yet, too often, good Catholics hold misconceptions about faith's meaning or role – misconceptions that can lead to spiritual stagnation. In these pages, Fr. Wojciech Giertych, OP, Theologian of the Papal Household, corrects prominent errors and clearly articulates what faith is, how it works, and how it may expand, or wither, within our soul. He explains that the initial moment – the spark – of faith which ignites our entire spiritual life comes first from God. Because faith is a divine gift that is alive, we can explore the laws of its development and learn the principles of its nourishment in order to fully live a life of faith that influences our intellectual and moral life. Fr. Giertych's

moving and practical reflections on the spiritual life bring ancient wisdom to bear on our modern age, teaching what it really means to have and grow in faith. You'll come to understand the proper relationship between faith and reason, and you'll deepen your understanding of the role of prayer in the life of faith. The Spark of Faith will help you focus your attention on God as the fundamental source of all the spiritual goods we need and cherish. Fr. Giertych has served as the Theologian of the Papal Household for two popes. His is wisdom you can trust.

This anthology is aimed at all those who are interested in the connection between consciousness, psychedelics, and the development of humankind. Bestselling author Graham Hancock has been writing and speaking about this to audience's worldwide, including a controversial TEDx talk on ayahuasca and DMT, which some call the god molecule. Graham Hancock leads the charge in this collection of the latest thinking on consciousness with a particular focus on the use of psychedelics to open up the realm of the supernatural. Leading minds and radical thinkers including Dennis McKenna, Rick Doblin, Alex Greg, Russell Brand, and Rick Strassman illuminate the topic like never before. Contributors include: Mike Alvernia, Russell Brand, David Jay Brown, Paul Devereux, Rick Doblin, Amanda Fielding, Nassim Hamein, Martina Hoffman, Don Lattin, Eduardo Luna, Dennis McKenna, Thad McKraken, Rak Razam, Gabriel Roberts, Thomas B. Roberts, Robert Schoch, Mark Seelig, Rick Strassman, and Robert Tindall.

The authors were part of a community of small software entrepreneurs who created the first applications for personal computers, as the computer revolution in the late 1970s and early 1980s changed the way we create and store documents and data. They personally knew many of the principle players whose accomplishments are the stuff of legends, and whose work and vision led the way to our computer-saturated society. This book captures this unique era, through the stories of eye-witnesses, when personal computing was just an idea -- an idea whose time had come! In these pages you will learn how a young engineer named Steve Leininger, working alone, built the first TRS-80 microcomputer . He had been hired by Tandy Corporation to develop a computer product to be sold in their Radio Shack stores for a price their customers could afford. Development costs were less than \$150,000. Yet no one had ever sold a complete off-the-shelf personal computer before. Would anyone buy it? As it turned out, the desire for a computer of one's own was overwhelming! Author David Welsh was one of the hobbyists-turned-programmers who bought a TRS-80. Using self-taught programming skills, he created a word processor and he and his wife Theresa found themselves in business, selling their product worldwide to enthusiastic fans who were eager to throw away their typewriters. They were part of the leading edge of the software business, joining hundreds of other small entrepreneurs selling software out of garages, basements and whatever space they could rent cheap. David and Theresa Welsh tell their own story and that of many other pioneers. Includes over 100 illustrations of early computer products and ads.

Speed up the design and implementation of deep learning solutions using Apache Spark Key Features Explore the world of distributed deep learning with Apache Spark Train neural networks with deep learning libraries such as BigDL and TensorFlow Develop Spark deep learning applications to intelligently handle large and complex datasets Book Description Deep learning is a subset of machine learning where datasets with several layers of complexity can be processed. Hands-On Deep Learning with Apache Spark addresses the sheer complexity of

technical and analytical parts and the speed at which deep learning solutions can be implemented on Apache Spark. The book starts with the fundamentals of Apache Spark and deep learning. You will set up Spark for deep learning, learn principles of distributed modeling, and understand different types of neural nets. You will then implement deep learning models, such as convolutional neural networks (CNNs), recurrent neural networks (RNNs), and long short-term memory (LSTM) on Spark. As you progress through the book, you will gain hands-on experience of what it takes to understand the complex datasets you are dealing with. During the course of this book, you will use popular deep learning frameworks, such as TensorFlow, Deeplearning4j, and Keras to train your distributed models. By the end of this book, you'll have gained experience with the implementation of your models on a variety of use cases. What you will learn

Understand the basics of deep learning
Set up Apache Spark for deep learning
Understand the principles of distribution modeling and different types of neural networks
Obtain an understanding of deep learning algorithms
Discover textual analysis and deep learning with Spark
Use popular deep learning frameworks, such as Deeplearning4j, TensorFlow, and Keras
Explore popular deep learning algorithms

Who this book is for
If you are a Scala developer, data scientist, or data analyst who wants to learn how to use Spark for implementing efficient deep learning models, Hands-On Deep Learning with Apache Spark is for you. Knowledge of the core machine learning concepts and some exposure to Spark will be helpful.

Contributors to the book teach a wide array of grade levels (K through college) and subject areas (e.g., English, social studies, math, science and health), and the quick writes included in the book are ideal for use in a variety of classroom subjects and settings. We believe that the book will find an extremely receptive audience among K-12 teachers, teacher educators preparing future teachers, and teachers and trainers of trainers involved in inservice programs and summer writing institutes. Many published resources offer lists of writing topics for classroom use; however, they lack the pedagogical approach that informs the quick write concept. Although one published quick write resource offers literary prompts for grades 5-12, we know of no other book that provides such varied examples of this particular strategy, particularly our inclusion of a wide variety of "stimuli" (versus the common and sole use of literary texts), and their use for a wide array of content areas (versus the usual and sole focus of English/Language Arts).

A fresh look at electricity and its powerful role in life on Earth
When we think of electricity, we likely imagine the energy humming inside our home appliances or lighting up our electronic devices—or perhaps we envision the lightning-streaked clouds of a stormy sky. But electricity is more than an external source of power, heat, or illumination. Life at its essence is nothing if not electrical. The story of how we came to understand electricity's essential role in all life is rooted in our observations of its influences on the body—influences governed by the body's central nervous system. Spark explains the science of electricity from this fresh, biological perspective. Through vivid tales of scientists and individuals—from Benjamin Franklin to Elon Musk—Timothy Jorgensen shows how our views of electricity and the nervous system evolved in tandem, and how progress in one area enabled advancements in the other. He explains how these developments have allowed us to understand—and replicate—the ways electricity enables the body's essential functions of sight, hearing, touch, and movement itself. Throughout, Jorgensen examines our fascination with electricity and how it can help or harm us. He explores a broad range of topics and events, including the Nobel Prize-winning discoveries of the electron and neuron, the history of experimentation involving electricity's effects on the body, and recent breakthroughs in the use of electricity to treat disease. Filled with gripping adventures in scientific exploration, Spark offers an indispensable look at electricity, how it works, and how it animates our lives from within and without.

Spark from the DeepHow Shocking Experiments with Strongly Electric Fish Powered Scientific

DiscoveryJHU Press

Have you ever dreamed of running your own business? Or are you running your own business and wondering how to grow it to the next level? If so, "Spark" was written especially for you. "Spark" will pull you out of the details and enable you to see the business journey from a higher perspective---a perspective that shows you where you are in the journey of the business. You will see that the challenges are just that: challenges, not insurmountable problems. "Spark" tells the story of the journey that gets you from here to there. From an idea to execution. It points out, in context, the lessons that everyone who wants to be successful in business must learn. Using the information in this book, you can learn and grow in the comfort of your living room where there is no cost to changing your mind or making a mistake. "Spark" is a combination of a fast-paced novel with powerful, impactful and eminently executable business lessons. It is rare to find a business book that is this enjoyable to read while being power packed full of knowledge. Our hero, Jack, is about to learn all the lessons of business the hard way so that you don't have to.

Electromagnetic field-assisted sintering techniques have increasingly attracted attention of scientists and technologists. Spark-plasma sintering (SPS) and other field-assisted powder consolidation approaches provide remarkable capabilities to the processing of materials into configurations previously unattainable. Of particular significance is the possibility of using very fast heating rates, which, coupled with the field-assisted mass transport, stand behind the purported ability to achieve high densities during consolidation and to maintain the nanostructure of consolidated materials via these techniques. Potentially, SPS and related technologies have many significant advantages over the conventional powder processing methods, including the lower process temperature, the shorter holding time, dramatically improved properties of sintered products, low manufacturing costs, and environmental friendliness.

Analytics is increasingly an integral part of day-to-day operations at today's leading businesses, and transformation is also occurring through huge growth in mobile and digital channels. Enterprise organizations are attempting to leverage analytics in new ways and transition existing analytics capabilities to respond with more flexibility while making the most efficient use of highly valuable data science skills. The recent growth and adoption of Apache Spark as an analytics framework and platform is very timely and helps meet these challenging demands. The Apache Spark environment on IBM z/OS® and Linux on IBM z Systems™ platforms allows this analytics framework to run on the same enterprise platform as the originating sources of data and transactions that feed it. If most of the data that will be used for Apache Spark analytics, or the most sensitive or quickly changing data is originating on z/OS, then an Apache Spark z/OS based environment will be the optimal choice for performance, security, and governance. This IBM® Redpaper™ publication explores the enterprise analytics market, use of Apache Spark on IBM z Systems™ platforms, integration between Apache Spark and other enterprise data sources, and case studies and examples of what can be achieved with Apache Spark in enterprise environments. It is of interest to data scientists, data engineers, enterprise architects, or anybody looking to better understand how to combine an analytics framework and platform on enterprise systems.

Unlock the complexities of machine learning algorithms in Spark to generate useful data insights through this data analysis tutorial About This Book Process and analyze big data in a distributed and scalable way Write sophisticated Spark pipelines that incorporate elaborate extraction Build and use regression models to predict flight delays Who This Book Is For Are you a developer with a background in machine learning and statistics who is feeling limited by the current slow and “small data” machine learning tools? Then this is the book for

you! In this book, you will create scalable machine learning applications to power a modern data-driven business using Spark. We assume that you already know the machine learning concepts and algorithms and have Spark up and running (whether on a cluster or locally) and have a basic knowledge of the various libraries contained in Spark. What You Will Learn Use Spark streams to cluster tweets online Run the PageRank algorithm to compute user influence Perform complex manipulation of DataFrames using Spark Define Spark pipelines to compose individual data transformations Utilize generated models for off-line/on-line prediction Transfer the learning from an ensemble to a simpler Neural Network Understand basic graph properties and important graph operations Use GraphFrames, an extension of DataFrames to graphs, to study graphs using an elegant query language Use K-means algorithm to cluster movie reviews dataset In Detail The purpose of machine learning is to build systems that learn from data. Being able to understand trends and patterns in complex data is critical to success; it is one of the key strategies to unlock growth in the challenging contemporary marketplace today. With the meteoric rise of machine learning, developers are now keen on finding out how can they make their Spark applications smarter. This book gives you access to transform data into actionable knowledge. The book commences by defining machine learning primitives by the MLlib and H2O libraries. You will learn how to use Binary classification to detect the Higgs Boson particle in the huge amount of data produced by CERN particle collider and classify daily health activities using ensemble Methods for Multi-Class Classification. Next, you will solve a typical regression problem involving flight delay predictions and write sophisticated Spark pipelines. You will analyze Twitter data with help of the doc2vec algorithm and K-means clustering. Finally, you will build different pattern mining models using MLlib, perform complex manipulation of DataFrames using Spark and Spark SQL, and deploy your app in a Spark streaming environment. Style and approach This book takes a practical approach to help you get to grips with using Spark for analytics and to implement machine learning algorithms. We'll teach you about advanced applications of machine learning through illustrative examples. These examples will equip you to harness the potential of machine learning, through Spark, in a variety of enterprise-grade systems.

The latest theory of intelligence is that it is multiple, not just the scholastic aptitude or school smarts of IQ tests. The great composers had high levels of musical intelligence, great writers linguistic intelligence, Olympic gold medalists body-kinesthetic intelligence, and the lives and works of Moses, Buddha, Jesus, and Muhammad reflected high spiritual intelligence (SIQ). This book explains SIQ, in past and recent history, with self-help exercises to identify and further develop your own SIQ.

Production-targeted Spark guidance with real-world use cases Spark: Big Data Cluster Computing in Production goes beyond general Spark overviews to provide targeted guidance toward using lightning-fast big-data clustering in

production. Written by an expert team well-known in the big data community, this book walks you through the challenges in moving from proof-of-concept or demo Spark applications to live Spark in production. Real use cases provide deep insight into common problems, limitations, challenges, and opportunities, while expert tips and tricks help you get the most out of Spark performance. Coverage includes Spark SQL, Tachyon, Kerberos, ML Lib, YARN, and Mesos, with clear, actionable guidance on resource scheduling, db connectors, streaming, security, and much more. Spark has become the tool of choice for many Big Data problems, with more active contributors than any other Apache Software project. General introductory books abound, but this book is the first to provide deep insight and real-world advice on using Spark in production. Specific guidance, expert tips, and invaluable foresight make this guide an incredibly useful resource for real production settings. Review Spark hardware requirements and estimate cluster size Gain insight from real-world production use cases Tighten security, schedule resources, and fine-tune performance Overcome common problems encountered using Spark in production Spark works with other big data tools including MapReduce and Hadoop, and uses languages you already know like Java, Scala, Python, and R. Lightning speed makes Spark too good to pass up, but understanding limitations and challenges in advance goes a long way toward easing actual production implementation. Spark: Big Data Cluster Computing in Production tells you everything you need to know, with real-world production insight and expert guidance, tips, and tricks.

A solution-based guide to put your deep learning models into production with the power of Apache Spark Key Features Discover practical recipes for distributed deep learning with Apache Spark Learn to use libraries such as Keras and TensorFlow Solve problems in order to train your deep learning models on Apache Spark Book Description With deep learning gaining rapid mainstream adoption in modern-day industries, organizations are looking for ways to unite popular big data tools with highly efficient deep learning libraries. As a result, this will help deep learning models train with higher efficiency and speed. With the help of the Apache Spark Deep Learning Cookbook, you'll work through specific recipes to generate outcomes for deep learning algorithms, without getting bogged down in theory. From setting up Apache Spark for deep learning to implementing types of neural net, this book tackles both common and not so common problems to perform deep learning on a distributed environment. In addition to this, you'll get access to deep learning code within Spark that can be reused to answer similar problems or tweaked to answer slightly different problems. You will also learn how to stream and cluster your data with Spark. Once you have got to grips with the basics, you'll explore how to implement and deploy deep learning models, such as Convolutional Neural Networks (CNN) and Recurrent Neural Networks (RNN) in Spark, using popular libraries such as TensorFlow and Keras. By the end of the book, you'll have the expertise to train and deploy efficient deep learning models on Apache Spark. What you will learn

Set up a fully functional Spark environment Understand practical machine learning and deep learning concepts Apply built-in machine learning libraries within Spark Explore libraries that are compatible with TensorFlow and Keras Explore NLP models such as Word2vec and TF-IDF on Spark Organize dataframes for deep learning evaluation Apply testing and training modeling to ensure accuracy Access readily available code that may be reusable Who this book is for If you're looking for a practical and highly useful resource for implementing efficiently distributed deep learning models with Apache Spark, then the Apache Spark Deep Learning Cookbook is for you. Knowledge of the core machine learning concepts and a basic understanding of the Apache Spark framework is required to get the best out of this book. Additionally, some programming knowledge in Python is a plus.

This book describes spark plasma sintering (SPS) in depth. It addresses fundamentals and material-specific considerations, techniques, and applications across a broad spectrum of materials. The book highlights methods used to consolidate metallic or ceramic particles in very short times. It highlights the production of complex alloys and metal matrix composites with enhanced mechanical and wear properties. Emphasis is placed on the speed of the sintering processes, uniformity in product microstructure and properties, reduced grain growth, the compaction and sintering of materials in one processing step, various materials processing, and high energy efficiency. Current and potential applications in space science and aeronautics, automation, mechanical engineering, and biomedicine are addressed throughout the book.

If you want to build an enterprise-quality application that uses natural language text but aren't sure where to begin or what tools to use, this practical guide will help get you started. Alex Thomas, principal data scientist at Wisecube, shows software engineers and data scientists how to build scalable natural language processing (NLP) applications using deep learning and the Apache Spark NLP library. Through concrete examples, practical and theoretical explanations, and hands-on exercises for using NLP on the Spark processing framework, this book teaches you everything from basic linguistics and writing systems to sentiment analysis and search engines. You'll also explore special concerns for developing text-based applications, such as performance. In four sections, you'll learn NLP basics and building blocks before diving into application and system building: Basics: Understand the fundamentals of natural language processing, NLP on Apache Spark, and deep learning Building blocks: Learn techniques for building NLP applications—including tokenization, sentence segmentation, and named-entity recognition—and discover how and why they work Applications: Explore the design, development, and experimentation process for building your own NLP applications Building NLP systems: Consider options for productionizing and deploying NLP models, including which human languages to support

"Towards a deeper understanding of the Holy Mass (the history of the Holy Mass)" is comprised of 15 chapters and focuses on the precedents of the Holy

Mass in the olden days, and how it started in different nations across the globe. The book also reviews the major changes that impacted the practice and spirit of the Holy Mass following the Vatican II Council of the late 1950s to mid-1960s.

Author_Bio: Chima is very passionate about history cum culture and believes that the promotion as well as the preservation of these societal foundation stones (on an individual and collective basis) will foster global peace and unity. Facets of both can be observed in our daily living too, in his reckoning. Apart from being an advocate of a number of societies in the Catholic Church, he has backgrounds in Market Research and Communication. Whenever he winds down either through watching films (thrillers are his choice flicks) or listening to music (preferably soft stuff), he keeps a keen subconscious ear alert for tiny strands of his primary pursuit.

Keywords: History, Holy Mass, Worldwide, Catholic-Church, Holy-Sacrifice, Pope, Testimony, Saint, Holy Communion, Sacred

Analyze your data and delve deep into the world of machine learning with the latest Spark version, 2.0

About This Book Perform data analysis and build predictive models on huge datasets that leverage Apache Spark Learn to integrate data science algorithms and techniques with the fast and scalable computing features of Spark to address big data challenges Work through practical examples on real-world problems with sample code snippets

Who This Book Is For This book is for anyone who wants to leverage Apache Spark for data science and machine learning. If you are a technologist who wants to expand your knowledge to perform data science operations in Spark, or a data scientist who wants to understand how algorithms are implemented in Spark, or a newbie with minimal development experience who wants to learn about Big Data Analytics, this book is for you!

What You Will Learn Consolidate, clean, and transform your data acquired from various data sources Perform statistical analysis of data to find hidden insights Explore graphical techniques to see what your data looks like Use machine learning techniques to build predictive models Build scalable data products and solutions Start programming using the RDD, DataFrame and Dataset APIs Become an expert by improving your data analytical skills

In Detail This is the era of Big Data. The words 'Big Data' implies big innovation and enables a competitive advantage for businesses. Apache Spark was designed to perform Big Data analytics at scale, and so Spark is equipped with the necessary algorithms and supports multiple programming languages. Whether you are a technologist, a data scientist, or a beginner to Big Data analytics, this book will provide you with all the skills necessary to perform statistical data analysis, data visualization, predictive modeling, and build scalable data products or solutions using Python, Scala, and R. With ample case studies and real-world examples, Spark for Data Science will help you ensure the successful execution of your data science projects.

Style and approach This book takes a step-by-step approach to statistical analysis and machine learning, and is explained in a conversational and easy-to-follow style. Each topic is explained sequentially with a focus on the fundamentals as well as the advanced concepts

of algorithms and techniques. Real-world examples with sample code snippets are also included.

Research has demonstrated that many young learners lose knowledge gained during the academic school year over the summer break. There are efforts to address this issue through “out of school time” (OST) programming. From summer camps to after school programs to home and community organizations, those working with K-12 children in these areas are eager to respond to the academic needs of the youth they serve. There is a clear gap between available supports and information needed by OST educators to appropriately address the need of young learners to sustain literacy gains. SPARK: Literacy Strategies and Supports for Out-of-School Time Spaces offers best practices and strategies from the academic literacy field and are described with examples specifically for implementation outside of the school classroom. The information in each chapter has been carefully written to guide the target audience as they work to link out-of-school time education and in-school literacy. This book also offers information on literature for children and youth and multiple free online supports. Based on the simulations developed in research groups over the past years, Introduction to Quasi-dimensional Simulation of Spark Ignition Engines provides a compilation of the main ingredients necessary to build up a quasi-dimensional computer simulation scheme. Quasi-dimensional computer simulation of spark ignition engines is a powerful but affordable tool which obtains realistic estimations of a wide variety of variables for a simulated engine keeping insight the basic physical and chemical processes involved in the real evolution of an automotive engine. With low computational costs, it can optimize the design and operation of spark ignition engines as well as it allows to analyze cycle-to-cycle fluctuations. Including details about the structure of a complete simulation scheme, information about what kind of information can be obtained, and comparisons of the simulation results with experiments, Introduction to Quasi-dimensional Simulation of Spark Ignition Engines offers a thorough guide of this technique. Advanced undergraduates and postgraduates as well as researchers in government and industry in all areas related to applied physics and mechanical and automotive engineering can apply these tools to simulate cyclic variability, potentially leading to new design and control alternatives for lowering emissions and expanding the actual operation limits of spark ignition engines

Spark of Light is a diverse collection of short stories by women writers from the Indian province of Odisha. Originally written in Odia and dating from the late nineteenth century to the present, these stories offer a multiplicity of voices—some sentimental and melodramatic, others rebellious and bold—and capture the predicament of characters who often live on the margins of society. From a spectrum of viewpoints, writing styles, and motifs, the stories included here provide examples of the great richness of Odishan literary culture. In the often shadowy and grim world depicted in this collection, themes of class, poverty, violence, and family are developed. Together they form a critique of social mores and illuminate the difficult lives of the subaltern in Odisha society. The work of these authors contributes to an ongoing dialogue concerning the challenges, hardships, joys, and successes experienced by women around the world. In these provocative explorations of the short-story form, we discover the voices of these rarely heard women.

'I suspect the real breakthroughs in our understanding of consciousness are going to come from an entirely different direction. That direction, controversially, has to do with psychedelics - which, as many of the contributors to The Divine Spark argue, offer spectacular potential for the investigation of the "hard problem" of consciousness.' - Graham Hancock, from the Introduction. In The Divine Spark, bestselling author Graham Hancock brings us a groundbreaking collection of the latest thinking on consciousness and psychedelics. Graham has been writing and speaking about this to audiences worldwide, including a controversial TedX talk on ayahuasca and DMT, which received over 130,000 views on YouTube.

Combining the wisdom of leading minds, *The Divine Spark* illuminates the topic like never before, with a particular focus on the use of psychedelics to open up the realm of the supernatural. The book unveils fresh theories on the relation of psychedelics to domains such as creativity, the survival of life on planet earth, interspecies communication, medicine and drug research, and many more. Contributors include: Mike Alvernia, Russell Brand, David Jay Brown, Paul Devereux, Rick Doblin, Amanda Fielding, Nassim Hamein, Martina Hoffman, Don Lattin, Eduardo Luna, Dennis McKenna, Thad McKraken, Rak Razam, Gabriel Roberts, Thomas B. Roberts, Robert Schoch, Mark Seelig, Rick Strassman and Robert Tindall.

If you like *Teen Wolf*, *True Blood* and *Vampire Diaries*, you'll love the *Burning Moon Series* by R.K. Close! Fire Captain Liam McKenzie has a secret. He and his brothers are wolf-shifters living among the unsuspecting community of Flagstaff, Arizona. They've made the mountain town their home but when a group of vampires takes up residency there, the town may not be big enough for two supernatural species. Jessica Parker is a tenacious news reporter, looking for her big break. When she attempts to interview the handsome fire captain who discovered two bodies in the woods, she's met with stubborn resistance which only encourages Jess to dig deeper. Liam feels himself drawn to the nosy reporter, but he isn't the only head that Jessica has turned. When a dangerous rogue vampire takes an interest in more than just the new she's reporting, the stakes rise. The McKenzie brothers have much to lose if they stay and an uncertain future if they leave and what would happen to the town if they go? **BURNING MOON SERIES** ????? "This was one of those books that grabbed my attention from the very beginning. The author develops the characters very well so that you feel like you know them and it makes the story easier to follow as each character has purpose." Amazon Reader Review ????? "If you are a fan of paranormal romance and in particular, shape-shifting wolves, then this new series is a must read..." Amazon Reader Review **BURNING MOON SERIES Spark - #1 (eBook & Print) Ignite - #2 (eBook & Print) Blaze - #3 (Coming in 2020) Ashes - #4 (eBook & Print)**

Before you can build analytics tools to gain quick insights, you first need to know how to process data in real time. With this practical guide, developers familiar with Apache Spark will learn how to put this in-memory framework to use for streaming data. You'll discover how Spark enables you to write streaming jobs in almost the same way you write batch jobs. Authors Gerard Maas and François Garillot help you explore the theoretical underpinnings of Apache Spark. This comprehensive guide features two sections that compare and contrast the streaming APIs Spark now supports: the original Spark Streaming library and the newer Structured Streaming API. Learn fundamental stream processing concepts and examine different streaming architectures Explore Structured Streaming through practical examples; learn different aspects of stream processing in detail Create and operate streaming jobs and applications with Spark Streaming; integrate Spark Streaming with other Spark APIs Learn advanced Spark Streaming techniques, including approximation algorithms and machine learning algorithms Compare Apache Spark to other stream processing projects, including Apache Storm, Apache Flink, and Apache Kafka Streams

Why can salamanders grow new legs, and young children grow new finger tips, but adult humans can't regenerate? What is the electricity that flows through the human body? Is it the same thing that the Chinese call Qi? If so, what does Chinese medicine know, that western medicine ignores? Dan Keown's highly accessible, witty, and original book shows how western medicine validates the theories of Chinese medicine, and how Chinese medicine explains the mysteries of the body that western medicine largely ignores. He explains the generative force of embryology, how the hearts of two people in love (or in scientific terms `quantum entanglement') truly beat as one, how a cheating heart is also an ill heart (which is why men are twice as likely to die of a sudden heart attack with their mistress than with their wife), how neural crest cells determine our lifespan, and why Proust's madeleines evoked the memories

they did. The book shows how the theories of western and Chinese medicine support each other, and how the integrated theory enlarges our understanding of how bodies work on every level. Full of good stories and surprising details, Dan Keown's book is essential reading for anyone who has ever wanted to know how the body really works.

A NEW emphasis IN THIS edition of Spark the Brain, Ignite the Pen is writing to learn in the content areas. This edition of the work first published in 2006 includes a collection of classroom-tested quick writes designed to assist students in thinking and writing about significant content in the disciplines. Contributors to the book teach a wide array of grade levels (K through college) and subject areas e.g., English, social studies, math, science and health), and the quick writes included in the book are ideal for use in a variety of classroom subjects and settings. Given the current research validating the impact of using writing tasks to learn content, this volume should be useful to a wide range of teachers, teacher educators, and professional development trainers K-12.

Spark! Quick Writes to Kindle Hearts and Minds in Elementary Classrooms The act of writing doesn't just convey our thinking; it shapes our thinking. Literacy expert Paula Bourque, author of Close Writing: Developing Purposeful Writers in Grades 2-6, now brings to K-6 classrooms "quick writes"--short, frequent bursts of low-stakes writing that allow young students to explore on paper. Bourque presents a way for children to create a rich array of writing, nurturing a range of skills: mindfulness, metacognitive skills, and a mindset of reflection, motivation, and gratitude. Spark! offers purposeful, practical, and enjoyable approaches that meet your students where they are in their writing development. Using the tools in this volume, you will see tangible results in your classroom: Increased volume and stamina of your writers Deeper thinking and discovery of their voices as writers More effective and confident communication Engagement with visual, auditory, and verbal art that stimulates thinking Exploration and appreciation of the diverse thinking of others Even in a tight schedule, Bourque's tools of "thinking and inking" can enliven your students' writing experiences.

Spark from the Deep tells the story of how human beings came to understand and use electricity by studying the evolved mechanisms of strongly electric fish. These animals have the ability to shock potential prey or would-be predators with high-powered electrical discharges. William J. Turkel asks completely fresh questions about the evolutionary, environmental, and historical aspects of people's interest in electric fish. Stimulated by painful encounters with electric catfish, torpedos, and electric eels, people learned to harness the power of electric shock for medical therapies and eventually developed technologies to store, transmit, and control electricity. Now we look to these fish as an inspiration for engineering new sensors, computer interfaces, autonomous undersea robots, and energy-efficient batteries. SPARK* is a dialogue about creativity. But this is not about creativity in the external sense of brainstorming or coming up with new ideas. It's a discussion around the internal experience of creativity and what it means to be a creator. The fulfillment of creative inspiration is more of a reflex, a necessity, in the face of the internal friction and angst that exists within us, pressing us ever deeper into ourselves in our need to explore and expose what it is that is stirring inside us. The revelations of these urges pour themselves out through limitless mediums. This is not about mediums either. In our expressions of creativity there exists an experience much more profound than simply finding resolution. Creativity (and the outward acts of creation it demands) is full of fear and vulnerability. Creative resolution demands a terrifying, yet unavoidable, openness of the heart — a trust that there is purpose in the risk. This exposing of what lies within us leaves us naked before an unforgiving world. The humility of creation is so real, so overwhelming, it often brings us to our knees. Yet interwoven within this visceral, emotional experience of creativity is the reality of the soul that we have been created in the image of a Creator who is ever beckoning us. And the more we open ourselves to the depths of what it means to be a creator, the more we seem to find of Him — and in this intimacy, we

begin to see how just as His creation speaks of His heart, our creativity does too.

This book brings pneumatology and indigenous voices to the study of mission by comparing Wesleyan ideas about mission and the Holy Spirit with Pentecostal/charismatic and Latin American understandings.

Christopher Wills and Jeffrey Bada examine the enduring mysteries surrounding life's origin: did life arise on Earth or on some other planet? What did the earliest primitive organisms look like? Were they based on RNA, DNA, or on something we would hardly recognize today? The authors examine the latest research - in fields ranging from molecular biology to astronomy - on questions surrounding life's origins. They untangle a century of contentious debate and explore many theories, assessing the probability of everything from asteroids and Martian rocks to 'primordial soup' and volcanic vents. They then present their own elegant and compelling scenario: life arose not in the subterranean depths, as many believe, but on Earth's tumultuous surface, where a primitive form of natural selection spawned the first genetic material, perhaps in the form of a proto-virus. The book ends with a whirlwind tour of one of the most exciting scientific endeavours - the search for extra-terrestrial life.

Summary The Spark distributed data processing platform provides an easy-to-implement tool for ingesting, streaming, and processing data from any source. In Spark in Action, Second Edition, you'll learn to take advantage of Spark's core features and incredible processing speed, with applications including real-time computation, delayed evaluation, and machine learning. Spark skills are a hot commodity in enterprises worldwide, and with Spark's powerful and flexible Java APIs, you can reap all the benefits without first learning Scala or Hadoop. Purchase of the print book includes a free eBook in PDF, Kindle, and ePub formats from Manning Publications. About the technology Analyzing enterprise data starts by reading, filtering, and merging files and streams from many sources. The Spark data processing engine handles this varied volume like a champ, delivering speeds 100 times faster than Hadoop systems. Thanks to SQL support, an intuitive interface, and a straightforward multilanguage API, you can use Spark without learning a complex new ecosystem. About the book Spark in Action, Second Edition, teaches you to create end-to-end analytics applications. In this entirely new book, you'll learn from interesting Java-based examples, including a complete data pipeline for processing NASA satellite data. And you'll discover Java, Python, and Scala code samples hosted on GitHub that you can explore and adapt, plus appendixes that give you a cheat sheet for installing tools and understanding Spark-specific terms. What's inside Writing Spark applications in Java Spark application architecture Ingestion through files, databases, streaming, and Elasticsearch Querying distributed datasets with Spark SQL About the reader This book does not assume previous experience with Spark, Scala, or Hadoop. About the author Jean-Georges Perrin is an experienced data and software architect. He is France's first IBM Champion and has been honored for 12 consecutive years. Table of Contents PART 1 - THE THEORY CRIPPLED BY AWESOME EXAMPLES 1 So, what is Spark, anyway? 2 Architecture and flow 3 The majestic role of the dataframe 4 Fundamentally lazy 5 Building a simple app for deployment 6 Deploying your simple app PART 2 - INGESTION 7 Ingestion from files 8 Ingestion from databases 9 Advanced ingestion: finding data sources and building your own 10 Ingestion through structured streaming PART 3 - TRANSFORMING YOUR DATA 11 Working with SQL 12 Transforming your data 13 Transforming entire documents 14 Extending transformations with user-defined functions 15 Aggregating your data PART 4 - GOING FURTHER 16 Cache and checkpoint: Enhancing Spark's performances 17 Exporting data and building full data pipelines 18 Exploring deployment Harness the power of Scala to program Spark and analyze tonnes of data in the blink of an eye! About This Book Learn Scala's sophisticated type system that combines Functional Programming and object-oriented concepts Work on a wide array of applications, from simple batch jobs to stream processing and machine learning Explore the most common as well as

some complex use-cases to perform large-scale data analysis with Spark Who This Book Is For Anyone who wishes to learn how to perform data analysis by harnessing the power of Spark will find this book extremely useful. No knowledge of Spark or Scala is assumed, although prior programming experience (especially with other JVM languages) will be useful to pick up concepts quicker. What You Will Learn Understand object-oriented & functional programming concepts of Scala In-depth understanding of Scala collection APIs Work with RDD and DataFrame to learn Spark's core abstractions Analysing structured and unstructured data using SparkSQL and GraphX Scalable and fault-tolerant streaming application development using Spark structured streaming Learn machine-learning best practices for classification, regression, dimensionality reduction, and recommendation system to build predictive models with widely used algorithms in Spark MLlib & ML Build clustering models to cluster a vast amount of data Understand tuning, debugging, and monitoring Spark applications Deploy Spark applications on real clusters in Standalone, Mesos, and YARN In Detail Scala has been observing wide adoption over the past few years, especially in the field of data science and analytics. Spark, built on Scala, has gained a lot of recognition and is being used widely in productions. Thus, if you want to leverage the power of Scala and Spark to make sense of big data, this book is for you. The first part introduces you to Scala, helping you understand the object-oriented and functional programming concepts needed for Spark application development. It then moves on to Spark to cover the basic abstractions using RDD and DataFrame. This will help you develop scalable and fault-tolerant streaming applications by analyzing structured and unstructured data using SparkSQL, GraphX, and Spark structured streaming. Finally, the book moves on to some advanced topics, such as monitoring, configuration, debugging, testing, and deployment. You will also learn how to develop Spark applications using SparkR and PySpark APIs, interactive data analytics using Zeppelin, and in-memory data processing with Alluxio. By the end of this book, you will have a thorough understanding of Spark, and you will be able to perform full-stack data analytics with a feel that no amount of data is too big. Style and approach Filled with practical examples and use cases, this book will not only help you get up and running with Spark, but will also take you farther down the road to becoming a data scientist.

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