

Geoserver Beginner S Guide Packt

An easy-to-use guide, full of hands-on recipes for manipulating spatial data in a PostGIS database. Each topic is explained and placed in context, and for the more inquisitive, there are more details of the concepts used. If you are a web developer or a software architect, especially in location-based companies, and want to expand the range of techniques you are using with PostGIS, then this book is for you. You should have some prior experience with PostgreSQL database and spatial concepts.

If you are a GIS professional who intends to explore advanced techniques and get more out of GeoServer deployment rather than simply delivering good looking maps, then this book is for you.

This is a tutorial style book that will teach usage of Python tools for GIS using simple practical examples and then show you how to build a complete mapping application from scratch. The book assumes basic knowledge of Python. No knowledge of Open Source GIS is required. Experienced Python developers who want to learn about geospatial concepts, work with geospatial data, solve spatial problems, and build map-based applications. This book will be useful those who want to get up to speed with Open Source GIS in order to build GIS applications or integrate Geo-Spatial features into their existing applications.

Create, analyze, and map your spatial data with ArcGIS for Desktop About This Book Learn how to use ArcGIS for Desktop to create and manage geographic data, perform vector and raster analysis, design maps, and share your results Solve real-world problems and share your valuable results using the powerful instruments of ArcGIS for Desktop

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Step-by-step tutorials cover the main editing, analyzing, and mapping tools in ArcGIS for Desktop Who This Book Is For This book is ideal for those who want to learn how to use the most important component of Esri's ArcGIS platform, ArcGIS for Desktop. It would be helpful to have a bit of familiarity with the basic concepts of GIS. Even if you have no prior GIS experience, this book will get you up and running quickly.

What You Will Learn Understand the functionality of ArcGIS for Desktop applications Explore coordinate reference system concepts and work with different map projections Create, populate, and document a file geodatabase Manage, create, and edit feature shapes and attributes Built automate analysis workflows with ModelBuilder Apply basic principles of map design to create good-looking maps Analyze raster and three-dimensional data with the Spatial Analyst and 3D Analyst extensions In Detail ArcGIS for Desktop is one of the main components of the ESRI ArcGIS platform used to support decision making and solve real-world mapping problems. Learning ArcGIS for Desktop is a tutorial-based guide that provides a practical experience for those who are interested in start working with ArcGIS. The first five chapters cover the basic concepts of working with the File Geodatabase, as well as editing and symbolizing geospatial data. Then, the book focuses on planning and performing spatial analysis on vector and raster data using the geoprocessing and modeling tools. Finally, the basic principles of cartography design will be used to create a quality map that presents the information that resulted from the spatial analysis previously performed. To keep you learning throughout the chapters, all exercises have partial and final results stored in the dataset that accompanies the book. Finally, the book offers more than it promises by using the ArcGIS Online component in the tutorials as source of background data and for results sharing Style and approach This easy-to-follow guide is full of hands-

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on exercises that use open and free geospatial datasets. The basic features of the ArcGIS for Desktop are explained in a step-by-step style.

Mastering Geospatial Development with QGIS 3.x

GeoServer Beginner's Guide

Selected works presented at the ICCVBIC 2018, Coimbatore, India

Programming ArcGIS 10.1 with Python Cookbook

GeoServer Cookbook

Geospatial Data in a Changing World

A fast-paced guide to putting your GeoServer-based application into fast, user-friendly, and secure production Key Features Resolve bottlenecks, optimize data stores, and cluster server resources Use identity management and authentication for a user-specific, secure web application Go beyond traditional web hosting to explore the full range of hosting options in the cloud Book Description GeoServer is open source, server-side software written in Java that allows users to share and edit geospatial data. In this book, you'll start by learning how to develop a spatial analysis platform with web processing services. Then you'll see how to develop an algorithm by chaining together geospatial analysis processes, which you can share with anyone in the world. Next you'll delve into a very important technique to improve the speed of your map

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application-tile caching. Here, you'll understand how tile caching works, how to develop an effective tile cache-supported web service, and how to leverage tile caching in your OpenLayers web application. Further on, you'll explore important tweaks to produce a performant GeoServer-backed web mapping application. Moving on, you'll enable authentication on the frontend and backend to protect sensitive map data, and deliver sensitive data to your end user. Finally, you'll see how to put your web application into production in a secure and user-friendly way. You'll go beyond traditional web hosting to explore the full range of hosting options in the cloud, and maintain a reliable server instance. What you will learn Develop a WPS-processing service to allow web-based geospatial data processing Get to know important techniques to improve the speed of your web map application-tile caching, raster data optimization, and server clustering Find out which GeoServer settings resolve bottlenecks Develop an algorithm by chaining geospatial analysis processes together Put your application into production with hosting, monitoring, and automated backup and recovery Understand how to develop an effective tile cache-

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supported web service Master techniques that ensure resilient server deployment Who this book is for This book is for anyone who wants to learn about advanced interfaces, security, and troubleshooting techniques in GeoServer. A basic understanding of GeoServer is required Geocomputation is the use of software and computing power to solve complex spatial problems. It is gaining increasing importance in the era of the 'big data' revolution, of 'smart cities', of crowdsourced data, and of associated applications for viewing and managing data geographically - like Google Maps. This student focused book: Provides a selection of practical examples of geocomputational techniques and 'hot topics' written by world leading practitioners. Integrates supporting materials in each chapter, such as code and data, enabling readers to work through the examples themselves. Chapters provide highly applied and practical discussions of: Visualisation and exploratory spatial data analysis Space time modelling Spatial algorithms Spatial regression and statistics Enabling interactions through the use of neogeography All chapters are uniform in design and each includes an introduction, case studies, conclusions - drawing

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together the generalities of the introduction and specific findings from the case study application - and guidance for further reading. This accessible text has been specifically designed for those readers who are new to Geocomputation as an area of research, showing how complex real-world problems can be solved through the integration of technology, data, and geocomputational methods. This is the applied primer for Geocomputation in the social sciences.

Create powerful applications with the most robust open source web mapping library using this advanced guide About This Book Develop responsive and platform-independent web mapping applications with OpenLayers 3 Learn the key points of creating great applications with native JavaScript through the step-by-step examples Master the use of the library, from compiling custom builds to developing a complete WebGIS application Who This Book Is For This book is intended for front-end developers with basic understanding of JavaScript and GIS concepts, and preferably for those who are familiar with the fundamentals of OpenLayers 3. You might have never used OpenLayers 3 as a seasoned JavaScript developer. If this is the case and you are

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eager to learn web mapping, this book will definitely set you on the right track. What You Will Learn Use the advanced functionality of the OpenLayers 3 library effectively Implement the library in your application, shaping it to your needs Manage layers and the layer stack dynamically Create not only stunning but also accurate thematic maps Extend OpenLayers 3 with your own custom classes Develop mobile-friendly web mapping applications Make stunning effects with canvas manipulation, or visualize point clouds with WebGL Integrate third-party applications, and create custom builds that completely satisfy your needs In Detail OpenLayers 3 allows you to create stunning web mapping and WebGIS applications. It uses modern, cutting edge browser technologies. It is written with Closure Library, enabling you to build browser-independent applications without painful debugging ceremonies, which even have some limited fallback options for older browsers. With this guide, you will be introduced to the world of advanced web mapping and WebGIS. First, you will be introduced to the advanced features and functionalities available in OpenLayers 3. Next, you will be taken through the key points of creating custom applications

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with OpenLayers 3. You will then learn how to create the web mapping application of yours (or your company's) dream with this open source, expense-free, yet very powerful library. We'll also show you how to make amazing looking thematic maps and create great effects with canvas manipulation. By the end of this book, you will have a strong command of web mapping and will be well on your way to creating amazing applications using OpenLayers 3.

Style and approach This is an advanced guide packed with comprehensive examples, and it concentrates on the advanced parts of OpenLayers 3 and JavaScript. It intentionally skips the basic and well-known methodologies, but discusses the hard-to-understand ones in great detail.

Decision makers, such as government officials, need to better understand human activity in order to make informed decisions. With the ability to measure and explore geographic space through the use of geospatial intelligence data sources including imagery and mapping data, they are better able to measure factors affecting the human population. As a broad field of study, geospatial research has applications in a variety of fields including military science, environmental science, civil engineering, and space

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exploration. Geospatial Intelligence: Concepts, Methodologies, Tools, and Applications explores multidisciplinary applications of geographic information systems to describe, assess, and visually depict physical features and to gather data, information, and knowledge regarding human activity. Highlighting a range of topics such as geovisualization, spatial analysis, and landscape mapping, this multi-volume book is ideally designed for data scientists, engineers, government agencies, researchers, and graduate-level students in GIS programs.

Delphi Cookbook

From Theory to Practice

Mastering Julia

An in-depth guide to becoming proficient in spatial data analysis using QGIS 3.4 and 3.6 with Python, 3rd Edition

QGIS By Example

Quickly learn and employ practical recipes for developing real-world, cross-platform applications using Delphi. Key Features Get to grips with Delphi to build and deploy various cross-platform applications Design and deploy real-world apps by implementing a single source codebase Build robust and optimized GUI applications with ease Book Description Delphi is a cross-platform integrated development environment (IDE) that supports rapid

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application development on different platforms, saving you the pain of wandering amid GUI widget details or having to tackle inter-platform incompatibilities. Delphi Cookbook begins with the basics of Delphi and gets you acquainted with JSON format strings, XSLT transformations, Unicode encodings, and various types of streams. You'll then move on to more advanced topics such as developing higher-order functions and using enumerators and run-time type information (RTTI). As you make your way through the chapters, you'll understand Delphi RTL functions, use FireMonkey in a VCL application, and cover topics such as multithreading, using a parallel programming library and deploying Delphi on a server. You'll take a look at the new feature of WebBroker Apache modules, join the mobile revolution with FireMonkey, and learn to build data-driven mobile user interfaces using the FireDAC database access framework. This book will also show you how to integrate your apps with Internet of Things (IoT). By the end of the book, you will have become proficient in Delphi by exploring its different aspects such as building cross-platforms and mobile applications, designing server-side programs, and integrating these programs with IoT. What you will learn Develop visually stunning applications using FireMonkey Deploy LiveBinding effectively with the right object-oriented programming (OOP) approach Create RESTful web services that run on Linux or Windows Build mobile apps that read data from a remote server efficiently

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Call platform native API on Android and iOS for an unpublished API Manage software customization by making better use of an extended RTTI Integrate your application with IOT Who this book is for Delphi Cookbook is for intermediate developers with a basic knowledge of Delphi who want to discover and understand all the development possibilities offered by it.

This book is a simple step-by-step, example-oriented guide with a focus on providing the practical skills necessary to develop and customize apps with Apps Script. If you are an application developer with no knowledge of App Script, and would like to learn to build apps using Google Apps script from scratch, then this book is for you. Basic JavaScript knowledge is required.

Open access to information of geographic places and spatial relationships provides an essential part of the analytical processing of spatial data. Access to connected geospatial programs allows for improvement in teaching and understanding science, technology, engineering, and mathematics. Emerging Trends in Open Source Geographic Information Systems provides emerging research on the applications of free and open software in geographic information systems in various fields of study. While highlighting topics such as data warehousing, hydrological modeling, and software packages, this publication explores the assessment and techniques of open software functionality and interfaces. This book is an important resource for

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professionals, researchers, academicians, and students seeking current research on the different types and uses of data and data analysis in geographic information systems.

Go beyond the basics and unleash the full power of QGIS 3.4 and 3.6 with practical, step-by-step examples Key Features One-stop solution to all of your GIS needs Master QGIS by learning about database integration, and geoprocessing tools Learn about the new and updated Processing toolbox and perform spatial analysis Book Description QGIS is an open source solution to GIS and widely used by GIS professionals all over the world. It is the leading alternative to proprietary GIS software. Although QGIS is described as intuitive, it is also, by default, complex. Knowing which tools to use and how to apply them is essential to producing valuable deliverables on time. Starting with a refresher on the QGIS basics and getting you acquainted with the latest QGIS 3.6 updates, this book will take you all the way through to teaching you how to create a spatial database and a GeoPackage. Next, you will learn how to style raster and vector data by choosing and managing different colors. The book will then focus on processing raster and vector data. You will be then taught advanced applications, such as creating and editing vector data. Along with that, you will also learn about the newly updated Processing Toolbox, which will help you develop the advanced data visualizations. The book will then explain to you the graphic modeler, how to create

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QGIS plugins with PyQGIS, and how to integrate Python analysis scripts with QGIS. By the end of the book, you will understand how to work with all aspects of QGIS and will be ready to use it for any type of GIS work. What you will learn

- Create and manage a spatial database
- Get to know advanced techniques to style GIS data
- Prepare both vector and raster data for processing
- Add heat maps, live layer effects, and labels to your maps
- Master LAs tools and GRASS integration with the Processing Toolbox
- Edit and repair topological data errors
- Automate workflows with batch processing and the QGIS Graphical Modeler
- Integrate Python scripting into your data processing workflows
- Develop your own QGIS plugins

Who this book is for If you are a GIS professional, a consultant, a student, or perhaps a fast learner who wants to go beyond the basics of QGIS, then this book is for you. It will prepare you to realize the full potential of QGIS.

Mastering GeoServer

GeoServer Beginner's Guide - Second Edition
Advanced Intelligent Systems for Sustainable
Development (AI2SD'2018)

Build and secure advanced interfaces and interactive maps

OpenLayers Cookbook

Leaflet.js Essentials

This is a tutorial-style book that helps you to perform Geospatial and GIS analysis with Python and its tools/libraries. This book will first

introduce various Python-related tools/packages in the initial chapters before moving towards practical usage, examples, and implementation in specialized kinds of Geospatial data analysis. This book is for anyone who wants to understand digital mapping and analysis and who uses Python or another scripting language for automation or crunching data manually. This book primarily targets Python developers, researchers, and analysts who want to perform Geospatial, modeling, and GIS analysis with Python.

This step-by-step guide will teach you how to use GeoServer to build custom and interactive maps using your data. About This Book Exploit the power of GeoServer to provide agile, flexible, and low -cost community projects Share real-time maps quickly Boost your map server's performance using the power and flexibility of GeoServer Who This Book Is For If you are a web developer with knowledge of server side scripting, have experience in installing applications on the server, and want to go beyond Google Maps by offering dynamically built maps on your site with

your latest geospatial data stored in MySQL, PostGIS, MySQL, or Oracle, this is the book for you. What You Will Learn

- Install GeoServer quickly**
- Access dynamic real-time geospatial data that you can easily integrate into your own web-based application**
- Create custom styles for lines, points, and polygons for great-looking maps**
- Command GeoServer remotely using REST**
- Tune your GeoServer instance for performance**
- Move GeoServer into production**
- Learn advanced topics to extend GeoServer's capabilities**

In Detail GeoServer is an opensource server written in Java that allows users to share, process, and edit geospatial data. This book will guide you through the new features and improvements of GeoServer and will help you get started with it. **GeoServer Beginner's Guide** gives you the impetus to build custom maps using your data without the need for costly commercial software licenses and restrictions. Even if you do not have prior GIS knowledge, you will be able to make interactive maps after reading this book. You will install GeoServer, access your data from a database, and apply style points, lines,

polygons, and labels to impress site visitors with real-time maps. Then you follow a step-by-step guide that installs GeoServer in minutes. You will explore the web-based administrative interface to connect to backend data stores such as PostGIS, and Oracle. Going ahead, you can display your data on web-based interactive maps, use style lines, points, polygons, and embed images to visualize this data for your web visitors. You will walk away from this book with a working application ready for production. After reading GeoServer Beginner's Guide, you will be able to build beautiful custom maps on your website using your geospatial data. Style and approach Step-by-step instructions are included and the needs of a beginner are totally satisfied by the book. The book consists of plenty of examples with accompanying screenshots and code for an easy learning curve.

If you are a web developer working with geospatial concepts and mapping APIs, and you want to learn Leaflet to create mapping solutions, this book is for you. You need to have a basic knowledge of working with JavaScript and performing

web application development.

Over 35 recipes to design and implement uniquely styled maps using the Mapbox platform About This Book Design and develop beautifully styled maps using TileMill, MapBox Studio, and CartoCSS Get to grips with the mapbox.js and Leaflet to create visually stunning web and mobile applications An easy-to-follow, quick reference guide to integrate powerful APIs and services like Foursquare, Fusion Tables, Geoserver, and CartoDB to populate your maps Who This Book Is For If you are a web developer seeking for GIS expertise on how to create, style, and publish interactive and unique styled maps, then this book is for you. Basic knowledge of programming and javascripts is assumed. What You Will Learn Get accustomed to the MapBox Editor to visually style your maps Learn everything about CartoCSS, and how it will help you fine tune your styled maps Use MapBox Studio and Tilemill to generate your own tiles and vector maps Publish your maps using a variety of technologies like node.js, PHP, and Geoserver Integrate with third party APIs

and services to populate your maps with public or private data Create many different map visualization styles like choropleth and heat maps, add interactivity, and even learn how to animate data over time Work with many different data formats and external services to create robust maps Learn to use MapBox GL to create a mobile application In Detail Maps are an essential element in today's location aware applications. Right from displaying earth surface information to creating thematic maps displaying plethora of information, most of the developers lack the necessary knowledge to create customizable maps with combination of various tools and libraries. The MapBox platform is one such platform which offers all the tools and API required to create and publish a totally customizable map. Starting with building your first map with the online MapBox Editor, we will take you all the way to building advanced web and mobile applications with totally customizable map styles. Through the course of chapters we'll learn CartoCSS styling language and understand the

various components of MapBox platform and their corresponding JavaScript API. In the initial few chapters we will dive deeper into the TileMill and MapBox Studio components of MapBox and use them to generate custom styled map tiles and vector maps. Furthermore, we will publish these custom maps using PHP, node.js and third party tools like Geoserver. We'll also learn to create different visualizations and map styles like a choropleth map, a heat map and add user interactivity using a UFTGrid. Moving on, we dive into advanced concepts and focus on integration with third party services like Foursquare, Google FusionTables, CartoDB, and Torque to help you populate and even animate your maps. In the final chapter we'll learn to use the Mapbox SDK to create and publish interactive maps for the iOS platform. By the end of this book, you will learn about MapBox GL and how to create a fully functional, location-aware mobile app, using the maps styles created in the recipes. Style and approach An easy-to-use recipe driven book that will not just serve code samples, but also explains all the theory

and concepts required to fully understand each recipe.

Learning ArcGIS for Desktop

Soil Organic Carbon Mapping Cookbook

Introduction to Web Mapping

2nd edition

Recipes to master Delphi for IoT

integrations, cross-platform, mobile and server-side development, 3rd Edition

Expert GeoServer

Create, optimize, and deploy stunning cross-browser web maps with the OpenLayers JavaScript web mapping library.

The latest guide to using QGIS 2.14 to create great maps and perform geoprocessing tasks with ease About

This Book Learn how to work with various data and create beautiful maps using this easy-to-follow guide.

Give a touch of professionalism to your maps both for functionality and look and feel with the help of this

practical guide. A progressive hands-on guide that builds on a geo-spatial data and adds more reactive maps by

using geometry tools. Who This Book Is For This book is great for users, developers, and consultants who know

the basic functions and processes of GIS and want to learn to use QGIS to analyze geospatial data and create

rich mapping applications. If you want to take advantage of the wide range of functionalities that QGIS offers, then

this is the book for you. What You Will Learn Install

QGIS and get familiar with the user interface Load vector and raster data from files, databases, and web services

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Create, visualize, and edit spatial data Perform geoprocessing tasks and automate them Create advanced cartographic outputs Design great print maps Expand QGIS using Python In Detail QGIS is a user-friendly open source geographic information system (GIS) that runs on Linux, Unix, Mac OS X, and Windows. The popularity of open source geographic information systems and QGIS in particular has been growing rapidly over the last few years. Learning QGIS Third Edition is a practical, hands-on guide updated for QGIS 2.14 that provides you with clear, step-by-step exercises to help you apply your GIS knowledge to QGIS. Through clear, practical exercises, this book will introduce you to working with QGIS quickly and painlessly. This book takes you from installing and configuring QGIS to handling spatial data to creating great maps. You will learn how to load and visualize existing spatial data and create data from scratch. You will get to know important plugins, perform common geoprocessing and spatial analysis tasks and automate them with Processing. We will cover how to achieve great cartographic output and print maps. Finally, you will learn how to extend QGIS using Python and even create your own plugin. Style and approach A step by step approach to explain concepts of Geospatial map with the help of real life examples Google Maps API Cookbook follows a fast-paced, high-level, structured cookbook approach, with minimal theory and an abundance of practical, real-world examples explained in a thorough yet concise manner to help you learn quickly and efficiently. Google Maps API Cookbook is for developers who wish to learn how to do anything

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from adding a simple embedded map to a website to developing complex GIS applications with the Google Maps JavaScript API. It is targeted at JavaScript developers who know how to get by but who are also seeking the immediacy of recipe-based advice.

A web map is an interactive display of geographic information, in the form of a web page, that you can use to tell stories and answer questions. Web maps have numerous advantages over traditional mapping techniques, such as the ability to display up-to-date or even real-time information, easy distribution to end users, and highly customized interactive content.

Introduction to Web Mapping teaches you how to develop online interactive web maps and web mapping applications, using standard web technologies: HTML, CSS and JavaScript. The core technologies are introduced in Chapters 1-5, focusing on the specific aspects which are most relevant to web mapping.

Chapters 6-13 then implement the material and demonstrate key concepts for building and publishing interactive web maps.

Mastering PostGIS

New Trends in Computational Vision and Bio-inspired Computing

Google Apps Script for Beginners

OpenLayers 2.10 Beginner's Guide

Store, organize, manipulate, and analyze spatial data, 2nd Edition

Learn to Build Sophisticated Mapping Applications from Scratch Using Python Tools for Geospatial Development

This book gathers papers presented at the International

Conference on Advanced Intelligent Systems for Sustainable Development (AI2SD-2018), which was held in Tangiers, Morocco on 12 – 14 July 2018. It highlights how advanced intelligent systems have successfully been used to develop tools and techniques for modeling, prediction and decision support in connection with the environment. Though chiefly intended for researchers and practitioners in advanced intelligent systems for sustainable development, the book will also be of interest to those working in environment and the Internet of Things, environment and big data analysis, summarization, prediction, remote sensing & geo-information, geophysics, marine and coastal environments, and sensor networks for environment services.

In the event of large crises (earthquakes, typhoons, floods, ...), a primordial task of the fire and rescue services is the search for human survivors on the incident site. This is a complex and dangerous task, which - too often - leads to loss of lives among the human crisis managers themselves. This book explains how unmanned search can be added to the toolkit of the search and rescue workers, offering a valuable tool to save human lives and to speed up the search and rescue process. The introduction of robotic tools in the world of search and rescue is not straightforward, due to the fact that the search and rescue context is extremely technology-unfriendly, meaning that very robust solutions, which can be deployed extremely quickly, are required. Multiple research projects across the world are tackling this problem and in this book, a special focus is placed on

showcasing the results of the European Union ICARUS project on this subject. The ICARUS project proposes to equip first responders with a comprehensive and integrated set of unmanned search and rescue tools, to increase the situational awareness of human crisis managers, so that more work can be done in a shorter amount of time. The ICARUS tools consist of assistive unmanned air, ground, and sea vehicles, equipped with victim-detection sensors. The unmanned vehicles collaborate as a coordinated team, communicating via ad hoc cognitive radio networking. To ensure optimal human-robot collaboration, these tools are seamlessly integrated into the command and control equipment of the human crisis managers and a set of training and support tools is provided to them in order to learn to use the ICARUS system. The research leading to these results has received funding from the European Community's Seventh Framework Programme (FP7/2007-2013) under grant agreement number 285417. The publishing of this book was funded by the EC FP7 Post-Grant Open Access Pilot programme.

The Soil Organic Carbon Mapping cookbook provides a step-by-step guidance for developing 1 km grids for soil carbon stocks. It includes the preparation of local soil data, the compilation and pre-processing of ancillary spatial data sets, upscaling methodologies, and uncertainty assessments. Guidance is mainly specific to soil carbon data, but also contains many generic sections on soil grid development, as it is relevant for other soil properties. This second edition of the cookbook provides generic methodologies and technical

steps to produce SOC maps and has been updated with knowledge and practical experiences gained during the implementation process of GSOCmap V1.0 throughout 2017. Guidance is mainly specific to SOC data, but as this cookbook contains generic sections on soil grid development it can be applicable to map various soil properties.

This volume gathers selected, peer-reviewed original contributions presented at the International Conference on Computational Vision and Bio-inspired Computing (ICCVBIC) conference which was held in Coimbatore, India, on November 29-30, 2018. The works included here offer a rich and diverse sampling of recent developments in the fields of Computational Vision, Fuzzy, Image Processing and Bio-inspired Computing. The topics covered include computer vision; cryptography and digital privacy; machine learning and artificial neural networks; genetic algorithms and computational intelligence; the Internet of Things; and biometric systems, to name but a few. The applications discussed range from security, healthcare and epidemic control to urban computing, agriculture and robotics. In this book, researchers, graduate students and professionals will find innovative solutions to real-world problems in industry and society as a whole, together with inspirations for further research.

Mapbox Cookbook

Geocomputation

Learning Geospatial Analysis with Python

Advanced Techniques Using Open Source Software

Practical GIS

Web Mapping Illustrated

This book is written in a helpful, practical style with numerous hands-on recipes and chapters to help you save time and effort by using Python to power ArcGIS to create shortcuts, scripts, tools, and customizations. "Programming ArcGIS 10.1 with Python Cookbook" is written for GIS professionals who wish to revolutionize their ArcGIS workflow with Python. Basic Python or programming knowledge is essential(?). This book collects innovative research presented at the 19th Conference of the Association of Geographic Information Laboratories in Europe (AGILE) on Geographic Information Science, held in Helsinki, Finland in 2016.

This step-by-step guide will teach you how to use GeoServer to build custom and interactive maps using your data.

- About This Book* Exploit the power of GeoServer to provide agile, flexible, and low -cost community projects*
- Share real-time maps quickly*
- Boost your map server's performance using the power and flexibility of GeoServer

Who This Book Is For If you are a web developer with knowledge of server side scripting, have experience in installing applications on the server, and want to go beyond Google Maps by offering dynamically built maps on your site with your latest geospatial data stored in MySQL, PostGIS, MySQL, or Oracle, this is the book for you.

- What You Will Learn* Install GeoServer quickly*
- Access dynamic real-time geospatial data that you can easily integrate into your own web-based application*
- Create custom styles for lines, points, and polygons for great-looking maps*
- Command GeoServer remotely using REST*

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Tune your GeoServer instance for performance* Move GeoServer into production* Learn advanced topics to extend GeoServer's capabilitiesIn DetailGeoServer is an opensource server written in Java that allows users to share, process, and edit geospatial data. This book will guide you through the new features and improvements of GeoServer and will help you get started with it. GeoServer Beginner's Guide gives you the impetus to build custom maps using your data without the need for costly commercial software licenses and restrictions. Even if you do not have prior GIS knowledge, you will be able to make interactive maps after reading this book.You will install GeoServer, access your data from a database, and apply style points, lines, polygons, and labels to impress site visitors with real-time maps. Then you follow a step-by-step guide that installs GeoServer in minutes. You will explore the web-based administrative interface to connect to backend data stores such as PostGIS, and Oracle. Going ahead, you can display your data on web-based interactive maps, use style lines, points, polygons, and embed images to visualize this data for your web visitors. You will walk away from this book with a working application ready for production.After reading GeoServer Beginner's Guide, you will be able to build beautiful custom maps on your website using your geospatial data.Style and approachStep-by-step instructions are included and the needs of a beginner are totally satisfied by the book. The book consists of plenty of examples with accompanying screenshots and code for an easy learning curve.

Provides information on how to create custom maps from tools available over the Internet.

Learning QGIS

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Share geospatial data using Open Source standards
Mapping, Monitoring, and Modeling Land and Water
Resources

PostGIS Cookbook

A Practical Primer

Mastering OpenLayers 3

Create and manage spatial data with PostGIS Key
Features Import and export geographic data from the
PostGIS database using the available tools Maintain,
optimize, and fine-tune spatial data for long-term
viability Utilize the parallel support functionality that
was introduced in PostgreSQL 9.6 Book Description
PostGIS is a spatial database that integrates the
advanced storage and analysis of vector and raster
data, and is remarkably flexible and powerful. PostGIS
provides support for geographic objects to the
PostgreSQL object-relational database and is currently
the most popular open source spatial databases. If
you want to explore the complete range of PostGIS
techniques and expose related extensions, then this
book is for you. This book is a comprehensive guide to
PostGIS tools and concepts which are required to
manage, manipulate, and analyze spatial data in
PostGIS. It covers key spatial data manipulation tasks,
explaining not only how each task is performed, but
also why. It provides practical guidance allowing you
to safely take advantage of the advanced technology
in PostGIS in order to simplify your spatial database
administration tasks. Furthermore, you will learn to
take advantage of basic and advanced vector, raster,
and routing approaches along with the concepts of
data maintenance, optimization, and performance,
and will help you to integrate these into a large
ecosystem of desktop and web tools. By the end, you

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will be armed with all the tools and instructions you need to both manage the spatial database system and make better decisions as your project's requirements evolve. What you will learn

- Import and export geographic data from the PostGIS database using the available tools
- Structure spatial data using the functionality provided by a combination of PostgreSQL and PostGIS
- Work with a set of PostGIS functions to perform basic and advanced vector analyses
- Connect PostGIS with Python
- Learn to use programming frameworks around PostGIS
- Maintain, optimize, and fine-tune spatial data for long-term viability
- Explore the 3D capabilities of PostGIS, including LiDAR point clouds and point clouds derived from Structure from Motion (SfM) techniques
- Distribute 3D models through the Web using the X3D standard
- Use PostGIS to develop powerful GIS web applications using Open Geospatial Consortium web standards
- Master PostGIS Raster

Who this book is for

This book is for developers who need some quick solutions for PostGIS. Prior knowledge of PostgreSQL and spatial concepts would be an added advantage. Step-by-step instructions are included and the needs of a beginner are totally satisfied by the book. The book consists of plenty of examples with accompanying screenshots and code for an easy learning curve. You are a web developer with knowledge of server side scripting, and have experience with installing applications on the server. You have a desire to want more than Google maps, by offering dynamically built maps on your site with your latest geospatial data stored in MySQL, PostGIS, MsSQL or Oracle. If this is the case, this book is meant for you.

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Learn the basics of Geographic Information Systems by solving real-world problems with powerful open source tools About This Book This easy-to-follow guide allows you to manage and analyze geographic data with ease using open source tools Publish your geographical data online Learn the basics of geoinformatics in a practical way by solving problems Who This Book Is For The book is for IT professionals who have little or no knowledge of GIS. It's also useful for those who are new to the GIS field who don't want to spend a lot of money buying licenses of commercial tools and training. What You Will Learn Collect GIS data for your needs Store the data in a PostGIS database Exploit the data using the power of the GIS queries Analyze the data with basic and more advanced GIS tools Publish your data and share it with others Build a web map with your published data In Detail The most commonly used GIS tools automate tasks that were historically done manually—compiling new maps by overlaying one on top of the other or physically cutting maps into pieces representing specific study areas, changing their projection, and getting meaningful results from the various layers by applying mathematical functions and operations. This book is an easy-to-follow guide to use the most matured open source GIS tools for these tasks. We'll start by setting up the environment for the tools we use in the book. Then you will learn how to work with QGIS in order to generate useful spatial data. You will get to know the basics of queries, data management, and geoprocessing. After that, you will start to practice your knowledge on real-world examples. We will solve various types of geospatial analyses with various methods. We will start with basic GIS

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problems by imitating the work of an enthusiastic real estate agent, and continue with more advanced, but typical tasks by solving a decision problem. Finally, you will find out how to publish your data (and results) on the web. We will publish our data with QGIS Server and GeoServer, and create a basic web map with the API of the lightweight Leaflet web mapping library. Style and approach The book guides you step by step through each of the core concepts of the GIS toolkit, building an overall picture of its capabilities. This guide approaches the topic systematically, allowing you to build upon what you learned in previous chapters. By the end of this book, you'll have an understanding of the aspects of building a GIS system and will be able to take that knowledge with you to whatever project calls for it. This book is ideal for GIS experts, developers, and system administrators who have had a first glance at GeoServer and who are eager to explore all its features in order to configure professional map servers. Basic knowledge of GIS and GeoServer is required.

Google Maps JavaScript API Cookbook

Emerging Trends in Open Source Geographic Information Systems

Geospatial Intelligence: Concepts, Methodologies, Tools, and Applications

Concepts, Methodologies, Tools, and Applications

Python Geospatial Development

Vol 3: Advanced Intelligent Systems Applied to Environment

GeoServer Beginner's Guide Packt Pub Limited

Over 60 recipes to create GIS web applications with the open source JavaScript library.

Julia is a well-constructed programming language with fast execution speed, eliminating the classic problem of performing analysis in one language and translating it for performance into a second. This book will help you develop and enhance your programming skills in Julia to solve real-world automation challenges. This book starts off with a refresher on installing and running Julia on different platforms. Next, you will compare the different ways of working with Julia and explore Julia's key features in-depth by looking at design and build. You will see how data works using simple statistics and analytics, and discover Julia's speed, its real strength, which makes it particularly useful in highly intensive computing tasks and observe how Julia can cooperate with external processes in order to enhance graphics and data visualization. Finally, you will look into meta-programming and learn how it adds great power to the language and establish networking and distributed computing with Julia. Write efficient GIS applications using PostGIS - from data creation to data consumption About This Book Learn how you can use PostGIS for spatial data analysis and manipulation Optimize your queries and build custom functionalities for your GIS application A comprehensive guide with hands-on examples to help you master PostGIS with ease Who This Book Is For If you are a GIS developer or analyst who wants to master PostGIS to build efficient, scalable GIS applications, this book is for you. If you want to conduct advanced analysis of spatial data, this book will also help you. The book assumes that you have a working installation of PostGIS in place, and have working experience with PostgreSQL. What You Will

Learn Refresh your knowledge of the PostGIS concepts and spatial databases Solve spatial problems with the use of SQL in real-world scenarios Practical walkthroughs of application development examples using Postgis, GeoServer and OpenLayers. Extract, transform and load your spatial data Expose data directly or through web services. Consume your data in both desktop and web clients In Detail PostGIS is open source extension on PostgreSQL object-relational database system that allows GIS objects to be stored and allows querying for information and location services. The aim of this book is to help you master the functionalities offered by PostGIS- from data creation, analysis and output, to ETL and live edits. The book begins with an overview of the key concepts related to spatial database systems and how it applies to Spatial RMDS. You will learn to load different formats into your Postgres instance, investigate the spatial nature of your raster data, and finally export it using built-in functionalities or 3th party tools for backup or representational purposes. Through the course of this book, you will be presented with many examples on how to interact with the database using JavaScript and Node.js. Sample web-based applications interacting with backend PostGIS will also be presented throughout the book, so you can get comfortable with the modern ways of consuming and modifying your spatial data. Style and approach This book is a comprehensive guide covering all the concepts you need to master PostGIS. Packed with hands-on examples, tips and tricks, even the most advanced concepts are explained in a very easy-to-follow manner. Every chapter in the book does not

only focus on how each task is performed, but also why.

Using Open Source GIS Toolkits

Selected papers of the 19th AGILE Conference on Geographic Information Science

Search and Rescue Robotics

The wide range of challenges in studying Earth system dynamics due to uncertainties in climate change and complex interference from human activities is creating difficulties in managing land and water resources and ensuring their sustainable use. Mapping, Monitoring, and Modeling Land and Water Resources brings together real-world case studies accurately surveyed and assessed through spatial modeling. The book focuses on the effectiveness of combining remote sensing, geographic information systems, and R. The use of open source software for different spatial modeling cases in various fields, along with the use of remote sensing and geographic information systems, will aid researchers, students, and practitioners to understand better the phenomena and the predictions by future analyses for problem-solving and decision-making.

QGIS is a leading user-friendly, cross-platform, open source, desktop geographic information system (GIS). It provides many useful capabilities and features and their

number is continuously growing. More and more private users and companies choose QGIS as their primary GIS software because it is very easy to use, feature-rich, extensible, and has a big and constantly growing community. This book guides you from QGIS installation through data loading, and preparation to performing most common GIS analyses. You will perform different types of GIS analyses including density, visibility, and suitability analysis on practical, real-world data. Finally, you will learn how to become more productive and automate your everyday work with the help of the QGIS Processing framework and by developing your own Python plugins. By the end of this book, you will have all the necessary knowledge about handling and analyzing spatial data.