

Learning Three Js The Javascript 3d Library For WebGL Second Edition

Learning Three.js: The JavaScript 3D Library for WebGLPackt Publishing Ltd

Using WebGL®, you can create sophisticated interactive 3D graphics inside web browsers, without plug-ins. WebGL makes it possible to build a new generation of 3D web games, user interfaces, and information visualization solutions that will run on any standard web browser, and on PCs, smartphones, tablets, game consoles, or other devices. WebGL Programming Guide will help you get started quickly with interactive WebGL 3D programming, even if you have no prior knowledge of HTML5, JavaScript, 3D graphics, mathematics, or OpenGL. You'll learn step-by-step, through realistic examples, building your skills as you move from simple to complex solutions for building visually appealing web pages and 3D applications with WebGL. Media, 3D graphics, and WebGL pioneers Dr. Kouichi Matsuda and Dr. Rodger Lea offer easy-to-understand tutorials on key aspects of WebGL, plus 100 downloadable sample programs, each demonstrating a specific WebGL topic. You'll move from basic techniques such as rendering, animating, and texturing triangles, all the way to advanced techniques such as fogging, shadowing, shader switching, and displaying 3D models generated by Blender or other authoring tools. This book won't just teach you WebGL best practices, it will give you a library of code to jumpstart your own projects. Coverage includes: • WebGL's origin, core concepts, features, advantages, and integration with other web standards • How and basic WebGL functions work together to deliver 3D graphics • Shader development with OpenGL ES Shading Language (GLSL ES) • 3D scene drawing: representing user views, controlling space volume, clipping, object creation, and perspective • Achieving greater realism through lighting and hierarchical objects • Advanced techniques: object manipulation, heads-up displays, alpha blending, shader switching, and more • Valuable reference appendixes covering key issues ranging from coordinate systems to matrices and shader loading to web browser settings This is the newest text in the OpenGL Technical Library, Addison-Wesley's definitive collection of programming guides and reference manuals for OpenGL and its related technologies. The Library enables programmers to gain a practical understanding of OpenGL and the other Khronos application-programming libraries including OpenGL ES and OpenCL. All of the technologies in the OpenGL Technical Library evolve under the auspices of the Khronos Group, the industry consortium guiding the evolution of modern, open-standards media APIs.

The JavaScript Workshop is a definitive guide to learning JavaScript in a practical way. Starting with JavaScript's core syntax and structure, the book gradually builds up to more advanced concepts like server-side development and functional programming. With this book, you'll gain the confidence to tackle any real-world JavaScript challenge.

Gain an in-depth knowledge in immersive web development to create augmented reality (AR) and virtual reality (VR) applications inside web browsers using WebXR API, WebGL, Three.js, and A-Frame. This project-based book will provide the practice and portfolio content to make the most of what the futures of spatial computing and immersive technology have to offer. Beginning with technical analysis of how web browsers function, the book covers programming languages such as WebGL, JavaScript, and HTML, with an eye on a complete understanding of the WebXR lifecycle. You'll then explore how contemporary web browsers work at the code level and see how to set up a local development server and use it with the Visual Studio Code IDE to create 3D animation in the WebGL programming language. With a familiarity of the web-rendering pipeline in place, you'll venture on to WebGL abstractions such as the Three.js JavaScript library and Mozilla's A-Frame XR Framework, which use WebXR to create high-end visual effects. In the final projects of the book, you'll create an augmented reality web session for an Android phone device, and create a VR scene in A-Frame (built on Three.js) to demo essential components of the WebXR API pertaining to user positioning and interaction. Game engines have become common-place for the creation of mixed reality content. However, developers not interested in learning entirely new workflows may be better suited to work within a medium almost universally open to all—the web; AR and VR Using the WebXR API will show you the way. What You'll Learn Master the creation of virtual reality and augmented reality features for web page Prepare to work as an immersive web developer with a portfolio of projects in sought-after technologies Review the fundamentals of writing shaders in WebGL Experience the unity between client, server, and cloud architecture as it applies to location-based AR Who This Book Is For Aspiring immersive web developers and developers already familiar with the fundamentals of web development who want to further explore topics such as spatial computing, computer vision, spatial anchors, and cloud-computing for multi-user social experiences.

With p5.js, you can think of your entire Web browser as your canvas for sketching with code! Learn programming the fun way--by sketching with interactive computer graphics! Getting Started with p5.js contains techniques that can be applied to creating games, animations, and interfaces. p5.js is a new interpretation of Processing written in JavaScript that makes it easy to interact with HTML5 objects, including text, input, video, webcam, and sound. Like its older sibling Processing, p5.js makes coding accessible for artists, designers, educators, and beginners. Written by the lead p5.js developer and the founders of Processing, this book provides an introduction to the creative possibilities of today's Web, using JavaScript and HTML. With Getting Started with p5.js, you'll: Quickly learn programming basics, from variables to objects Understand the fundamentals of computer graphics Create interactive graphics with easy-to-follow projects Learn to apply data visualization techniques Capture and manipulate webcam audio and video feeds in the browser

Loosely based on the Odyssey, this landmark of modern literature follows ordinary Dubliners through an entire day in 1904. Captivating experimental techniques range from interior monologues to exuberant wordplay and earthy humor.

A comprehensive guide with 80+ examples on 3D programming in WebGL 2, covering computer graphics topics such as rendering, 3D math, camera, and more Key Features Create visually stunning, high-performance 3D applications for the web with WebGL 2 A complete course on 3D computer graphics: rendering, 3D math, lighting, cameras, and more Unlock a variety of new and advanced features offered in WebGL 2 Book Description As highly interactive applications have become an increasingly important part of the user experience, WebGL is a unique and cutting-edge technology that brings hardware-accelerated 3D graphics to the web. Packed with 80+ examples, this book guides readers through the landscape of real-time computer graphics using WebGL 2. Each chapter covers foundational concepts in 3D graphics programming with various implementations. Topics are always associated with exercises for a hands-on approach to learning. This book presents a clear roadmap to learning real-time 3D computer graphics with WebGL 2. Each chapter starts with a summary of the learning goals for the chapter, followed by a detailed description of each topic. The book offers example-rich, up-to-date introductions to a wide range of essential 3D computer graphics topics, including rendering, colors, textures, transformations, framebuffers, lights, surfaces, blending, geometry construction, advanced techniques, and more. With each chapter, you will "level up" your 3D graphics programming skills. This book will become your trustworthy companion in developing highly interactive 3D web applications with WebGL and JavaScript. What you will learn Understand the rendering pipeline provided in WebGL Build and render 3D objects with WebGL Develop lights using shaders, 3D math, and the physics of light reflection Create a camera and use it to navigate a 3D scene Use texturing, lighting, and shading techniques to render realistic 3D scenes Implement object selection and interaction in a 3D scene Cover advanced techniques for creating immersive and compelling scenes Learn new and advanced features offered in WebGL 2 Who this book is for This book is intended for developers who are interested in building highly interactive 3D applications for the web. A basic understanding of JavaScript is necessary; no prior computer graphics or WebGL knowledge is required.

This book is ideal for anyone who already knows JavaScript and would like to get a broad understanding of Three.js quickly, or for those of you who have a basic grasp of using Three.js but want to really make an impact with your 3D visualizations by learning its advanced features. To apply the recipes in this book you don't need to know anything about WebGL; all you need is some general knowledge about JavaScript

and HTML.

3- Informative Books in one Bundle! The Most Comprehensive JavaScript Beginners Guide on the Market! Have you ever wondered what allows people to be able to see different things on different websites? The answer is simple: JavaScript. Many websites are written in JavaScript so that you can be able to see what they are all about and what is going on in each of the sites. It is a language that can be written in many different formats so that different websites can use it for different purposes. JavaScript is able to do everything from creating a website to adding buttons and even disabling the ability to click on a button unless an option is chosen. While JavaScript is a multilayered language that will take some time to learn all of the levels of, the basics are quite simple. You can learn how to begin writing JavaScript by knowing only the basics, and you can build on your knowledge of the basics and what you initially learned. To get started with writing JavaScript, all you need to do is learn the beginning process. It is easy for you to do this if you have the right tools. This book will act as a way for you, as a beginner, to learn the process of JavaScript. While it will teach you some of the simplest JavaScript codes, it will not be overwhelming with codes. Instead, it will teach you what you need to know before you become a JavaScript expert and before you make the decision to truly dive into it. If you are ready to learn about JavaScript, what it can do and how you can get started, start this book right away. When you are finished, check out some of the other books in this series to learn more JavaScript codes and how to become a true professional who is great at writing JavaScript and can do more than you ever thought possible. Follow the series on an easy way to become a JavaScript expert! Sail Past the Beginners Level with these valuable tips! JavaScript is a language that you will always be able to learn more about and always be able to expand your knowledge of. Once you have learned the very basics of it, you should work to make sure that you are trying to find out as much as possible. JavaScript can be very rewarding, and you will need to be able to do as much as possible with it if you want to get the most benefit out of it. The tips and tricks that are contained in this book will give you some insight into what JavaScript is really capable of and what you can actually do with it if you learn as much as possible about it. There is a lot to learn, and you will be able to reap all of the benefits from JavaScript if you follow this book. The tips and tricks are designed not only to show you how to use the codes to build a beautiful interactive website but to also wow all of your visitors with everything that you have to offer on the website. Reading the book will not make you a JavaScript expert, but it will have you well on your way to being one. Read on for some of the best tips that are available and how you can make them work when you are trying to learn JavaScript in the easiest and most efficient way. Javascript- Simple and Effective Strategies: JavaScript isn't necessarily a simple language or a simple code to learn, but there are some very simple strategies that will get you to where you want to be with your JavaScript career. Following these strategies will allow you the chance to make sure that you are getting the most out of the JavaScript experience and the learning process that comes from it. Grab this 3-book bundle Today! Create and animate stunning 3D browser based graphics with Three.js JavaScript library Key Features Enhance your 3D graphics with light sources, shadows, advanced materials, and textures Load models from external sources, and visualize and animate them directly from JavaScript Create your own custom WebGL shader and explore the postprocessing feature of Three.js Book Description WebGL makes it possible to create 3D graphics in the browser without having to use plugins such as Flash and Java. Programming WebGL, however, is difficult and complex. With Three.js, it is possible to create stunning 3D graphics in an intuitive manner using JavaScript, without having to learn WebGL. With this book, you'll learn how to create and animate beautiful looking 3D scenes directly in your browser-utilizing the full potential of WebGL and modern browsers. It starts with the basic concepts and building blocks used in Three.js. From there on, it will expand on these subjects using extensive examples and code samples. You will learn to create, or load, from externally created models, realistic looking 3D objects using materials and textures. You'll find out how to easily control the camera using the Three.js built-in in camera controls, which will enable you to fly or walk around the 3D scene you created. You will then use the HTML5 video and canvas elements as a material for your 3D objects and to animate your models. Finally, you will learn to use morph and skeleton-based animation, and even how to add physics, such as gravity and collision detection, to your scene. After reading this book, you'll know everything that is required to create 3D animated graphics using Three.js. What you will learn Work with the different types of materials in Three.js and see how they interact with your 3D objects and the rest of the environment Implement the different camera controls provided by Three.js to effortlessly navigate around your 3D scene Work with vertices directly to create snow, rain, and galaxy-like effects Import and animate models from external formats, such as OBJ, STL, and COLLADA Create and run animations using morph targets and bones animations Explore advanced textures on materials to create realistic looking 3D objects by using bump maps, normal maps, specular maps, and light maps Interact directly with WebGL by creating custom vertex and fragment shaders Who this book is for The ideal target audience for this book would be JavaScript developers who who wa ...

JavaScript is the native language of the Internet. Originally created to make web pages more dynamic, it is now used for software projects of all kinds, including scientific visualization and data services. However, most data scientists have little or no experience with JavaScript, and most introductions to the language are written for people who want to build shopping carts rather than share maps of coral reefs. This book will introduce you to JavaScript's power and idiosyncrasies and guide you through the key features of the language and its tools and libraries. The book places equal focus on client- and server-side programming, and shows readers how to create interactive web content, build and test data services, and visualize data in the browser. Topics include: The core features of modern JavaScript Creating templated web pages Making those pages interactive using React Data visualization using Vega-Lite Using Data-Forge to wrangle tabular data Building a data service with Express Unit testing with Mocha All of the material is covered by the Creative Commons Attribution-Noncommercial 4.0 International license (CC-BY-NC-4.0) and is included in the book's companion website at <http://js4ds.org> . Maya Gans is a freelance data scientist and front-end developer by way of quantitative biology. Toby Hodges is a bioinformatician turned community coordinator who works at the European Molecular Biology Laboratory. Greg Wilson co-founded Software Carpentry, and is now part of the education team at RStudio

This is an exciting time to learn JavaScript. Now that the latest JavaScript specification ECMAScript 6.0 (ES6) has been finalized, learning how to develop high-quality applications with this language is easier and more satisfying than ever. This practical book takes programmers (amateurs and pros alike) on a no-nonsense tour of ES6, along with some related tools and techniques. Author Ethan Brown ("Web Development with Node and Express") not only guides you through simple and straightforward topics (variables, control flow, arrays), but also covers complex concepts such as functional and asynchronous programming. You'll learn how to create powerful and responsive web applications on the client, or with Node.js on the server. Use ES6 today and transcompile code to portable ES5 Translate data into a format that JavaScript can use Understand the basic usage and mechanics of JavaScript functions Explore objects and object-oriented programming Tackle new concepts such as iterators, generators, and proxies Grasp the complexities of asynchronous programming Work with the Document Object Model for browser-based apps Learn Node.js fundamentals for developing server-side applications"

Beginning WebGL for HTML5 gets you rapidly up to speed with WebGL, a powerful new graphics language within the browser. You'll render realistic scenes with advanced lighting models, shadows, blending and textures. You'll also use mathematics to model fractals and particle systems. Going beyond that, Beginning WebGL for HTML5 presents advanced vertex and fragment shader usage for creating stunning, top-end results. You'll benefit from using modern frameworks to rapidly develop complex scenes, and make use of many tools to help improve rendering performance and debugging. Beginning WebGL for HTML5 builds your critical WebGL development skills while being enjoyable at each step of the way. Quickly get up to speed with WebGL Render realistic scenes Work faster with frameworks Improve rendering performance

Completely revised and updated, this best-selling introduction to programming in JavaScript focuses on writing real applications. JavaScript lies at the heart of almost every modern web application, from social apps like Twitter to browser-based game frameworks like Phaser and Babylon. Though simple for beginners to pick up and play with, JavaScript is a flexible, complex language that you can use to build full-scale applications. This much anticipated and thoroughly revised third edition of Eloquent JavaScript dives deep into the JavaScript language to show you how to write beautiful, effective code. It has been updated to reflect the current state of JavaScript and web browsers and includes brand-new material on features like class notation, arrow functions, iterators, async functions, template strings, and block scope. A host of new exercises have also been added to test your skills and keep you on track. As with previous editions, Haverbeke continues to teach through extensive examples and immerses you in code from the start, while exercises and full-chapter projects give you hands-on experience with writing your own programs. You start by learning the basic structure of the JavaScript language as well as control structures, functions, and data structures to help you write basic programs. Then you'll learn about error handling and bug fixing, modularity, and asynchronous programming before moving on to web browsers and how JavaScript is used to program them. As you build projects such as an artificial life simulation, a simple programming language, and a paint program, you'll learn how to:

- Understand the essential elements of programming, including syntax, control, and data
- Organize and clarify your code with object-oriented and functional programming techniques
- Script the browser and make basic web applications
- Use the DOM effectively to interact with browsers
- Harness Node.js to build servers and utilities

Isn't it time you became fluent in the language of the Web? * All source code is available online in an interactive sandbox, where you can edit the code, run it, and see its output instantly.

Create and animate stunning 3D browser based graphics with Three.js JavaScript library

Key Features

- Enhance your 3D graphics with light sources, shadows, advanced materials, and textures
- Load models from external sources, and visualize and animate them directly from JavaScript
- Create your own custom WebGL shader and explore the postprocessing feature of Three.js

Book Description

WebGL makes it possible to create 3D graphics in the browser without having to use plugins such as Flash and Java. Programming WebGL, however, is difficult and complex. With Three.js, it is possible to create stunning 3D graphics in an intuitive manner using JavaScript, without having to learn WebGL. With this book, you'll learn how to create and animate beautiful looking 3D scenes directly in your browser-utilizing the full potential of WebGL and modern browsers. It starts with the basic concepts and building blocks used in Three.js. From there on, it will expand on these subjects using extensive examples and code samples. You will learn to create, or load, from externally created models, realistic looking 3D objects using materials and textures. You'll find out how to easily control the camera using the Three.js built-in camera controls, which will enable you to fly or walk around the 3D scene you created. You will then use the HTML5 video and canvas elements as a material for your 3D objects and to animate your models. Finally, you will learn to use morph and skeleton-based animation, and even how to add physics, such as gravity and collision detection, to your scene. After reading this book, you'll know everything that is required to create 3D animated graphics using Three.js. What you will learn

- Work with the different types of materials in Three.js and see how they interact with your 3D objects and the rest of the environment
- Implement the different camera controls provided by Three.js to effortlessly navigate around your 3D scene
- Work with vertices directly to create snow, rain, and galaxy-like effects
- Import and animate models from external formats, such as OBJ, STL, and COLLADA
- Create and run animations using morph targets and bones animations
- Explore advanced textures on materials to create realistic looking 3D objects by using bump maps, normal maps, specular maps, and light maps
- Interact directly with WebGL by creating custom vertex and fragment shaders

Who this book is for

The ideal target audience for this book would be JavaScript developers who who want to learn how to use the Three.js library

A step-by-step, example-based guide to building immersive 3D games on the Web using the Three.js graphics library. This book is for people interested in programming 3D games for the Web. Readers are expected to have basic knowledge of JavaScript syntax and a basic understanding of HTML and CSS. This book will be useful regardless of prior experience with game programming, whether you intend to build casual side projects or large-scale professional titles.

Sams Teach Yourself HTML, CSS and JavaScript All in One

The all-in-one HTML, CSS and JavaScript beginner's guide: covering the three most important languages for web development. Covers everything beginners need to know about the HTML and CSS standards and today's JavaScript and Ajax libraries - all in one book, for the first time

Integrated, well-organized coverage expertly shows how to use all these key technologies together

Short, simple lessons teach hands-on skills readers can apply immediately

By best-selling author Julie Meloni

Mastering HTML, CSS, and JavaScript is vital for any beginning web developer - and the importance of these technologies is growing as web development moves away from proprietary alternatives such as Flash. Sams Teach Yourself HTML, CSS, and JavaScript All in One brings together everything beginners need to build powerful web applications with the HTML and CSS standards and the latest JavaScript and Ajax libraries. With this book, beginners can get all the modern web development knowledge you need from one expert source. Bestselling author Julie Meloni (Sams Teach Yourself PHP, MySQL and Apache All in One) teaches simply and clearly, through brief, hands-on lessons focused on knowledge you can apply immediately. Meloni covers all the building blocks of practical web design and development, integrating new techniques and features into every chapter. Each lesson builds on what's come before, showing you exactly how to use HTML, CSS, and JavaScript together to create great web sites.

If you know JavaScript and want to start creating 3D graphics that run in any browser, this book is a great choice for you. You don't need to know anything about math or WebGL; all that you need is general knowledge of JavaScript and HTML.

JavaScript is the programming language of the Internet, the secret sauce that makes the Web awesome, your favorite sites interactive, and online games fun! JavaScript for Kids is a lighthearted introduction that teaches programming essentials through patient, step-by-step examples paired with funny illustrations. You'll begin with the basics, like working with strings, arrays, and loops, and then move on to more advanced topics, like building interactivity with jQuery and drawing graphics with Canvas. Along the way, you'll write games such as Find the Buried Treasure, Hangman, and Snake. You'll also learn how to:

- Create functions to organize and reuse your code
- Write and modify HTML to create dynamic web pages
- Use the DOM and jQuery to make your web pages react to user input
- Use the Canvas element to draw and animate graphics
- Program real user-controlled games with collision detection and score keeping

With visual examples like bouncing balls, animated bees, and racing cars, you can really see what you're programming. Each chapter builds on the last, and programming challenges at the end of each chapter will stretch your brain and inspire your own amazing programs. Make something cool with JavaScript today! Ages 10+ (and their parents!)

"Learning Three.js is a hands-on guide which provides everything you need to start working with the powerful JavaScript library, and start creating awesome in-browser visualizations". Learning Three.js is written for anyone looking to get started with Three.js, or looking to improve their skills with the popular js library. The book assumes some knowledge of javascript, but you don't need any knowledge of Three.js itself to follow the book.

Summary

Deep learning has transformed the fields of computer vision, image processing, and natural language applications. Thanks to TensorFlow.js, now JavaScript developers can build deep learning apps without relying on Python or R. Deep Learning with JavaScript shows developers how they can bring DL technology to the web. Written by the main authors of the TensorFlow library, this new book provides fascinating use cases and in-depth instruction for deep learning apps in JavaScript in your browser or on Node. Foreword by Nikhil Thorat and Daniel Smilkov. About the technology

Running deep learning applications in the browser or on Node-based backends opens up exciting possibilities for smart web applications. With the TensorFlow.js library, you build and train deep learning models with JavaScript.

Offering uncompromising production-quality scalability, modularity, and responsiveness, TensorFlow.js really shines for its portability. Its models run anywhere JavaScript runs, pushing ML farther up the application stack. About the book In Deep Learning with JavaScript, you'll learn to use TensorFlow.js to build deep learning models that run directly in the browser. This fast-paced book, written by Google engineers, is practical, engaging, and easy to follow. Through diverse examples featuring text analysis, speech processing, image recognition, and self-learning game AI, you'll master all the basics of deep learning and explore advanced concepts, like retraining existing models for transfer learning and image generation. What's inside - Image and language processing in the browser - Tuning ML models with client-side data - Text and image creation with generative deep learning - Source code samples to test and modify About the reader For JavaScript programmers interested in deep learning. About the author Shanging Cai, Stanley Bileschi and Eric D. Nielsen are software engineers with experience on the Google Brain team, and were crucial to the development of the high-level API of TensorFlow.js. This book is based in part on the classic, Deep Learning with Python by François Chollet. TOC: PART 1 - MOTIVATION AND BASIC CONCEPTS 1 • Deep learning and JavaScript PART 2 - A GENTLE INTRODUCTION TO TENSORFLOW.JS 2 • Getting started: Simple linear regression in TensorFlow.js 3 • Adding nonlinearity: Beyond weighted sums 4 • Recognizing images and sounds using convnets 5 • Transfer learning: Reusing pretrained neural networks PART 3 - ADVANCED DEEP LEARNING WITH TENSORFLOW.JS 6 • Working with data 7 • Visualizing data and models 8 • Underfitting, overfitting, and the universal workflow of machine learning 9 • Deep learning for sequences and text 10 • Generative deep learning 11 • Basics of deep reinforcement learning PART 4 - SUMMARY AND CLOSING WORDS 12 • Testing, optimizing, and deploying models 13 • Summary, conclusions, and beyond

Explore the power of D3.js 5 and its integration with web technologies for building rich and interactive data visualization solutions Key Features Explore the latest D3.js 5 for creating charts, plots, and force-directed graphics Practical guide for creating interactive graphics and data-driven apps with JavaScript Build Real-time visualization and transition on web using SVG with D3.js Book Description This book is a practical hands-on introduction to D3 (Data-driven Documents): the most popular open-source JavaScript library for creating interactive web-based data visualizations. Based entirely on open web standards, D3 provides an integrated collection of tools for efficiently binding data to graphical elements. If you have basic knowledge of HTML, CSS and JavaScript you can use D3.js to create beautiful interactive web-based data visualizations. D3 is not a charting library. It doesn't contain any pre-defined chart types, but can be used to create whatever visual representations of data you can imagine. The goal of this book is to introduce D3 and provide a learning path so that you obtain a solid understanding of its fundamental concepts, learn to use most of its modules and functions, and gain enough experience to create your own D3 visualizations. You will learn how to create bar, line, pie and scatter charts, trees, dendograms, treemaps, circle packs, chord/ribbon diagrams, sankey diagrams, animated network diagrams, and maps using different geographical projections. Fundamental concepts are explained in each chapter and then applied to a larger example in step-by-step tutorials, complete with full code, from hundreds of examples you can download and run. This book covers D3 version 5 and is based on ES2015 JavaScript. What you will learn Learn to use D3.js version 5 and web standards to create beautiful interactive data-driven visualizations for the web Bind data to DOM elements, applying different scales, color schemes and configuring smooth animated transitions for data updates Generate data structures and layouts for many popular chart formats Apply interactive behaviors to any chart Create thematic maps based on GIS data using different geographical projections with interactive behaviors Load, parse and transform data from JSON and CSV formats Who this book is for The book is intended for web developers, web designers, data scientists, artists, and any developer who wish to create interactive data visualization for the Web using D3. The book assumes basic knowledge of HTML, CSS, and JavaScript.

Create high-performance, visually stunning 3D applications for the Web, using HTML5 and related technologies such as CSS3 and WebGL—the emerging web graphics standard. With this book, you'll learn how to use the tools, frameworks, and libraries for building 3D models and animations, mind-blowing visual effects, and advanced user interaction in both desktop and mobile browsers. In two parts—Foundations and Application Development Techniques—author Tony Parisi provides a thorough grounding in theory and practice for designing everything from a simple 3D product viewer to immersive games and interactive training systems. Ideal for developers with Javascript and HTML experience. Explore HTML5 APIs and related technologies for creating 3D web graphics, including WebGL, Canvas, and CSS Work with the popular JavaScript 3D rendering and animation libraries Three.js and Tween.js Delve into the 3D content creation pipeline, and the modeling and animation tools for creating killer 3D content Look into several game engines and frameworks for building 3D applications, including the author's Vizi framework Create 3D environments with multiple objects and complex interaction, using examples and supporting code Examine the issues involved in building WebGL-based 3D applications for mobile browsers

A hands-on, practical Introduction to coding! Do you want to learn to code? Perhaps you want to learn how to build the next social media sensation or blockbuster game? Or perhaps you just want to get some valuable coding experience under your belt? This easy-to-follow, practical, and fun guide is the perfect place to start on your coding journey. You'll be learning to program with JavaScript - the most popular programming language on Earth. And it runs in web browsers, making it particularly suited to creating web-based apps and games. But the principles and techniques that you'll learn will provide you with a foundation to go on and learn many other languages, too. You'll learn: Programming basics, including data types, variables and more How to use logic to control the flow of a program How to use loops to repeat code over and over again How to write functions that can be used to store code in reusable blocks How to store data in collections such as arrays, sets and maps How to create objects that store properties and actions And much more! Along the way, you'll build a collection of fun applications, including games and interactive web pages. Start learning to code today!

Like it or not, JavaScript is everywhere these days—from browser to server to mobile—and now you, too, need to learn the language or dive deeper than you have. This concise book guides you into and through JavaScript, written by a veteran programmer who once found himself in the same position. Speaking JavaScript helps you approach the language with four standalone sections. First, a quick-start guide teaches you just enough of the language to help you be productive right away. More experienced JavaScript programmers will find a complete and easy-to-read reference that covers each language feature in depth. Complete contents include: JavaScript quick start: Familiar with object-oriented programming? This part helps you learn JavaScript quickly and properly. JavaScript in depth: Learn details of ECMAScript 5, from syntax, variables, functions, and object-oriented programming to regular expressions and JSON with lots of examples. Pick a topic and jump in. Background: Understand JavaScript's history and its relationship with other programming languages. Tips, tools, and libraries: Survey existing style guides, best practices, advanced techniques, module systems, package managers, build tools, and learning resources. This book makes JavaScript less challenging to learn for newcomers, by offering a modern view that is as consistent as possible. Highlights: Get started quickly, by initially focusing on modern features. Test-driven exercises and quizzes available for most chapters (sold separately). Covers all essential features of JavaScript, up to and including ES2019. Optional advanced sections let you dig deeper. No prior knowledge of JavaScript is required, but you should know how to program.

JavaScript was written to give readers an accurate, concise examination of JavaScript objects and their supporting nuances, such as complex values, primitive values, scope, inheritance, the head object, and more. If you're an intermediate JavaScript developer and want to solidify your understanding of the language, or if you've only used JavaScript beneath the mantle of libraries such as jQuery or Prototype, this is the book for you. This updated and expanded second edition of Book provides a user-friendly introduction to the subject, Taking a clear structural framework, it guides the reader through the subject's core elements. A flowing writing style combines with the use of illustrations and diagrams throughout the text to ensure the reader understands even the most complex of concepts. This succinct and enlightening

overview is a required reading for all those interested in the subject . We hope you find this book useful in shaping your future career & Business.

Everything you need to know about developing hardware-accelerated 3D graphics with WebGL! As the newest technology for creating 3D graphics on the web, in both games, applications, and on regular websites, WebGL gives web developers the capability to produce eye-popping graphics. This book teaches you how to use WebGL to create stunning cross-platform apps. The book features several detailed examples that show you how to develop 3D graphics with WebGL, including explanations of code snippets that help you understand the why behind the how. You will also develop a stronger understanding of WebGL development from coverage that:

- Provides a comprehensive overview of WebGL and shows how it relates to other graphics-related technologies
- Addresses important topics such as the WebGL graphics pipeline, 3D transformations, texturing and lighting
- Teaches you how to write vertex shaders and fragment shaders for WebGL
- Includes a lot of useful guidelines, tips, and tricks for WebGL performance optimizations

Professional WebGL Programming is the first book on the market to delve into this fascinating topic and it puts you on your way to mastering the possibilities that exist with WebGL.

No matter how much experience you have with JavaScript, odds are you don't fully understand the language. This concise yet in-depth guide takes you inside scope and closures, two core concepts you need to know to become a more efficient and effective JavaScript programmer. You'll learn how and why they work, and how an understanding of closures can be a powerful part of your development skillset. Like other books in the "You Don't Know JS" series, Scope and Closures dives into trickier parts of the language that many JavaScript programmers simply avoid. Armed with this knowledge, you can achieve true JavaScript mastery. Learn about scope, a set of rules to help JavaScript engines locate variables in your code Go deeper into nested scope, a series of containers for variables and functions Explore function- and block-based scope, "hoisting", and the patterns and benefits of scope-based hiding Discover how to use closures for synchronous and asynchronous tasks, including the creation of JavaScript libraries

Summary D3.js in Action, Second Edition is completely revised and updated for D3 v4 and ES6. It's a practical tutorial for creating interactive graphics and data-driven applications using D3. Purchase of the print book includes a free eBook in PDF, Kindle, and ePub formats from Manning Publications. About the Technology Visualizing complex data is hard. Visualizing complex data on the web is darn near impossible without D3.js. D3 is a JavaScript library that provides a simple but powerful data visualization API over HTML, CSS, and SVG. Start with a structure, dataset, or algorithm; mix in D3; and you can programmatically generate static, animated, or interactive images that scale to any screen or browser. It's easy, and after a little practice, you'll be blown away by how beautiful your results can be! About the Book D3.js in Action, Second Edition is a completely updated revision of Manning's bestselling guide to data visualization with D3. You'll explore dozens of real-world examples, including force and network diagrams, workflow illustrations, geospatial constructions, and more. Along the way, you'll pick up best practices for building interactive graphics, animations, and live data representations. You'll also step through a fully interactive application created with D3 and React. What's Inside Updated for D3 v4 and ES6 Reusable layouts and components Geospatial data visualizations Mixed-mode rendering About the Reader Suitable for web developers with HTML, CSS, and JavaScript skills. No specialized data science skills required. About the Author Elijah Meeks is a senior data visualization engineer at Netflix. Table of Contents PART 1 - D3.JS FUNDAMENTALS An introduction to D3.js Information visualization data flow Data-driven design and interaction Chart components Layouts PART 2 - COMPLEX DATA VISUALIZATION Hierarchical visualization Network visualization Geospatial information visualization PART 3 - ADVANCED TECHNIQUES Interactive applications with React and D3 Writing layouts and components Mixed mode rendering Develop your JavaScript programming skills by learning strategies and techniques commonly used in modern full-stack application development Key Features Write and deploy full-stack applications efficiently with JavaScript Delve into JavaScript's multiple programming paradigms Get up to speed with core concepts such as modularity and functional programming to write efficient code Book Description In depth knowledge of JavaScript makes it easier to learn a variety of other frameworks, including React, Angular, and related tools and libraries. This book is designed to help you cover the core JavaScript concepts you need to build modern applications. You'll start by learning how to represent an HTML document in the Document Object Model (DOM). Then, you'll combine your knowledge of the DOM and Node.js to create a web scraper for practical situations. As you read through further lessons, you'll create a Node.js-based RESTful API using the Express library for Node.js. You'll also understand how modular designs can be used for better reusability and collaboration with multiple developers on a single project. Later lessons will guide you through building unit tests, which ensure that the core functionality of your program is not affected over time. The book will also demonstrate how constructors, async/await, and events can load your applications quickly and efficiently. Finally, you'll gain useful insights into functional programming concepts such as immutability, pure functions, and higher-order functions. By the end of this book, you'll have the skills you need to tackle any real-world JavaScript development problem using a modern JavaScript approach, both for the client and server sides. What you will learn Apply the core concepts of functional programming Build a Node.js project that uses the Express.js library to host an API Create unit tests for a Node.js project to validate it Use the Cheerio library with Node.js to create a basic web scraper Develop a React interface to build processing flows Use callbacks as a basic way to bring control back Who this book is for If you want to advance from being a frontend developer to a full-stack developer and learn how Node.js can be used for hosting full-stack applications, this is an ideal book for you. After reading this book, you'll be able to write better JavaScript code and learn about the latest trends in the language. To easily grasp the concepts explained here, you should know the basic syntax of JavaScript and should've worked with popular frontend libraries such as jQuery. You should have also used JavaScript with HTML and CSS but not necessarily Node.js.

Breathe life into your data by learning how to use D3.js V4 to visualize information About This Book Create complex visualizations powered by D3.js and open data. Provides an extensive set of visualizations that explore all the functionality provided by D3.js V4. Shows how to set up an easy-to-use environment to create stunning visualizations. Who This Book Is For The typical target audience of this book is JavaScript developers, designers, and visual artists who have some basic JavaScript programming knowledge and who now want to master pro-level techniques to create interactive data visualizations using web standards which work on desktop as well as mobile devices. What You Will Learn Learn how D3.js works to declaratively define visualizations. Create charts from scratch by using SVG and the D3.js APIs See how to prepare data for easy visualization using D3.js. Visualize hierarchical data using chart types provided by D3.js Explore the different options provided by D3.js to visualize linked data such as graphs. Spice up your visualizations by adding interactivity and animations. Learn how to use D3.js to visualize and interact with Geo- and Gis-related information sources. Create visualization by streaming data over WebSockets In Detail Do you want to make sense of your data? Do you want to create interactive charts, data trees, info-graphics, geospatial charts, and maps efficiently? This book is your ideal choice to master interactive data visualization with D3.js V4. The book includes a number of extensive examples that to help you hone your skills with data visualization. Throughout nine chapters these examples will help you acquire a clear practical understanding of the various techniques, tools and functionality provided by D3.js. You will first setup your D3.JS development environment and learn the basic patterns needed to visualize your data. After that you will learn techniques to optimize different processes such as working with selections; animating data transitions; creating graphs and charts, integrating external resources (static as well as streaming); visualizing information on maps; working with colors and scales; utilizing the different D3.js APIs; and much more. The book will also guide you through creating custom graphs and visualizations, and show you how to go from the raw data to beautiful visualizations. The extensive examples will include working with complex and realtime data streams, such as seismic data, geospatial data, scientific data, and more. Towards the end of the book, you will learn to add more functionality on top of D3.js by using it with other external libraries and

integrating it with EcmaScript 6 and Typescript Style and approach This book will have a real-world, case-study approach, where you will be given data sets from different domains. These data sets will have different visualization goals; some might need 2D or 3D charts, some might need automated workflows, others might require interactive maps. While you fulfill these goals, you will learn different techniques and best practices, which will enable you to perform data visualization tasks on your own

Given the demand for AI and the ubiquity of JavaScript, TensorFlow.js was inevitable. With this Google framework, seasoned AI veterans and web developers alike can help propel the future of AI-driven websites. In this guide, author Gant Laborde--Google Developer Expert in machine learning and the web--provides a hands-on end-to-end approach to TensorFlow.js fundamentals for a broad technical audience that includes data scientists, engineers, web developers, students, and researchers. You'll begin by working through some basic examples in TensorFlow.js before diving deeper into neural network architectures, DataFrames, TensorFlow Hub, model conversion, transfer learning, and more. Once you finish this book, you'll know how to build and deploy production-ready deep learning systems with TensorFlow.js. Explore tensors, the most fundamental structure of machine learning Convert data into tensors and back with a real-world example Combine AI with the web using TensorFlow.js Use resources to convert, train, and manage machine learning data Build and train your own training models from scratch

With Learning JavaScript Design Patterns, you'll learn how to write beautiful, structured, and maintainable JavaScript by applying classical and modern design patterns to the language. If you want to keep your code efficient, more manageable, and up-to-date with the latest best practices, this book is for you. Explore many popular design patterns, including Modules, Observers, Facades, and Mediators. Learn how modern architectural patterns—such as MVC, MVP, and MVVM—are useful from the perspective of a modern web application developer. This book also walks experienced JavaScript developers through modern module formats, how to namespace code effectively, and other essential topics. Learn the structure of design patterns and how they are written Understand different pattern categories, including creational, structural, and behavioral Walk through more than 20 classical and modern design patterns in JavaScript Use several options for writing modular code—including the Module pattern, Asynchronous Module Definition (AMD), and CommonJS Discover design patterns implemented in the jQuery library Learn popular design patterns for writing maintainable jQuery plug-ins "This book should be in every JavaScript developer's hands. It's the go-to book on JavaScript patterns that will be read and referenced many times in the future."—Andrée Hansson, Lead Front-End Developer, presis!

Presents an introduction to WebGL development and production concepts to create full 3D applications.

Discover over 65 recipes to help you create breathtaking data visualizations using the latest features of D3 About This Book Learn about D3 4.0 from the inside out and master its new features Utilize D3 packages to generate graphs, manipulate data, and create beautiful presentations Solve real-world visualization problems with the help of practical recipes Who This Book Is For If you are a developer familiar with HTML, CSS, and JavaScript, and you wish to get the most out of D3, then this book is for you. This book can serve as a desktop quick-reference guide for experienced data visualization developers. You'll also find this book useful if you're a D3 user who wants to take advantage of the new features introduced in D3 4.0. You should have previous experience with D3. What You Will Learn Get a solid understanding of the D3 fundamentals and idioms Use D3 to load, manipulate, and map data to any kind of visual representation on the web Create data-driven dynamic visualizations that update as the data does Leverage the various modules provided by D3 to create sophisticated, dynamic, and interactive charts and graphics Create data-driven transitions and animations within your visualizations Understand and leverage more advanced concepts such as force, touch, and Geo data visualizations In Detail This book gives you all the guidance you need to start creating modern data visualizations with D3 4.x that take advantage of the latest capabilities of JavaScript. The book starts with the basic D3 structure and building blocks and quickly moves on to writing idiomatic D3-style JavaScript code. You will learn how to work with selection to target certain visual elements on the page, then you will see techniques to represent data both in programming constructs and its visual metaphor. You will learn how map values in your data domain to the visual domain using scales, and use the various shape functions supported by D3 to create SVG shapes in visualizations. Moving on, you'll see how to use and customize various D3 axes and master transition to add bells and whistles to otherwise dry visualizations. You'll also learn to work with charts, hierarchy, graphs, and build interactive visualizations. Next you'll work with Force, which is one of the most awe-inspiring techniques you can add to your visualizations, and you'll implement a fully functional Choropleth map (a special purpose colored map) in D3. Finally, you'll learn to unit test data visualization code and test-driven development in a visualization project so you know how to produce high-quality D3 code. Style and approach This step-by-step guide to mastering data visualizations with D3 will help you create amazing data visualizations with professional efficiency and precision. It is a solution-based guide in which you learn through practical recipes, illustrations, and code samples.

Learn how to hack systems like black hat hackers and secure them like security experts Key Features Understand how computer systems work and their vulnerabilities Exploit weaknesses and hack into machines to test their security Learn how to secure systems from hackers Book Description This book starts with the basics of ethical hacking, how to practice hacking safely and legally, and how to install and interact with Kali Linux and the Linux terminal. You will explore network hacking, where you will see how to test the security of wired and wireless networks. You'll also learn how to crack the password for any Wi-Fi network (whether it uses WEP, WPA, or WPA2) and spy on the connected devices. Moving on, you will discover how to gain access to remote computer systems using client-side and server-side attacks. You will also get the hang of post-exploitation techniques, including remotely controlling and interacting with the systems that you compromised. Towards the end of the book, you will be able to pick up web application hacking techniques. You'll see how to discover, exploit, and prevent a number of website vulnerabilities, such as XSS and SQL injections. The attacks covered are practical techniques that work against real systems and are purely for educational purposes. At the end of each section, you will learn how to detect, prevent, and secure systems from these attacks. What you will learn Understand ethical hacking and the different fields and types of hackers Set up a penetration testing lab to practice safe and legal hacking Explore Linux basics, commands, and how to interact with the terminal Access password-protected networks and spy on connected clients Use server and client-side attacks to hack and control remote computers Control a hacked system remotely and use it to hack other systems Discover, exploit, and prevent a number of web application vulnerabilities such as XSS and SQL injections Who this book is for Learning Ethical Hacking from Scratch is for anyone interested in learning how to hack and test the security of systems like professional hackers and security experts.

This book is an easy-to-follow guide that shows the essential parts of Three.js through a set of extensive examples. Through the explanation of these examples, you'll learn everything you need to know about Three.js. If you already know JavaScript and want to quickly learn the essentials of Three.js, this book is for you. No prior knowledge of Three.js, WebGL, 3D modelling, or Maths is required.

[Copyright: 6b8feaccbe80c978e77d68e501436efd](#)