

Designed for passionate game developers—Engineered to build professional games

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Learn Modern OpenGL Graphics Programming in a Step-by-step Fashion.

Unity 2018 Shaders and Effects Cookbook

Unity 2021 Cookbook

Master the art of Shader programming to bring life to your Unity projects About This Book This book will help you master the technique of physically based shading in Unity 5 to add realism to your game quickly through precise recipes From an eminent author, this book offers you the fine technicalities of professional post-processing effects for stunning results This book will help you master Shader programming through easy-to-follow examples to create stunning visual effects that can be used in 3D games and high quality graphics. Who This Book Is For Unity Effects and Shader Cookbook is written for developers who want to create their first Shaders in Unity 5 or wish to take their game to a whole new level by adding professional post-processing effects. A solid understanding of Unity is required. What You Will Learn Understand physically based rendering to fit the aesthetic of your game Enter the world of post-processing effects to make your game look visually stunning Add life to your materials, complementing Shader programming with interactive scripts Design efficient Shaders for mobile platforms without sacrificing their realism Use state-of-the-art techniques such as volumetric explosions and fur shading Build your knowledge by understanding how Shader models have evolved and how you can create your own Discover what goes into the structure of Shaders and why lighting works the way it does Master the math and algorithms behind the most used lighting models In Detail Since their introduction to Unity, Shaders have been notoriously difficult to understand and implement in games: complex mathematics have always stood in the way of creating your own Shaders and attaining that level of realism you crave. With Shaders, you can transform your game into a highly polished, refined product with Unity's post-processing effects. Unity Shaders and Effects Cookbook is the first of its kind to bring you the secrets of creating Shaders for Unity3D—guiding you through the process of understanding vectors, how lighting is constructed with them, and also how textures are used to create complex effects without the heavy math. We'll start with essential lighting and finishing up by creating stunning screen Effects just like those in high quality 3D and mobile games. You'll discover techniques including normal mapping, image-based lighting, and how to animate your models inside a Shader. We'll explore the secrets behind some of the most powerful techniques, such as physically based rendering! With Unity Shaders and Effects Cookbook, what seems like a dark art today will be second nature by tomorrow. Style and approach The recipes in this book contain step-by-step instructions, complemented by screenshots and code, and real-world examples.

Programmable graphics shaders, programs that can be downloaded to a graphics processor (GPU) to carry out operations outside the fixed-function pipeline of earlier standards, have become a key feature of computer graphics. This book is designed to open computer graphics shader programming to the student, whether in a traditional class or on their own. It is intended to complement texts based on fixed-function graphics APIs, specifically OpenGL. It introduces a flexible, easy-to-use tool, glman, that helps you develop, test, and tune shaders outside an application that would use them. The success of Angry Birds, Peggle, and Fruit Ninja has proven that fun and immersive game experiences can be created in two dimensions. Furthermore, 2D graphics enable developers to quickly prototype ideas and mechanics using fewer resources than 3D.2D Graphics Programming for Games provides an in-depth single source on creating 2D graphics that c Essential Mathematics for Games and Interactive Applications, 2nd edition presents the core mathematics necessary for sophisticated 3D graphics and interactive physical simulations. The book begins with linear algebra and matrix multiplication and expands on this foundation to cover such topics as color and lighting, interpolation, animation and basic game physics. Essential Mathematics focuses on the issues of 3D game development important to programmers and includes optimization guidance throughout. The new edition Windows code will now use Visual Studio.NET. There will also be DirectX support provided, along with OpenGL - due to its cross-platform nature. Programmers will find more concrete examples included in this edition, as well as additional information on tuning, optimization and robustness. The book has a companion CD-ROM with exercises and a test bank for the academic secondary market, and for main market: code examples built around a shared code base, including a math library covering all the topics presented in the book, a core vector/matrix math engine, and libraries to support basic 3D rendering and interaction.

Unity 5.x Shaders and Effects Cookbook

A Comprehensive Guide to Creating HLSL Pixel Shaders for WPF and Silverlight Applications

Godot Engine Game Development in 24 Hours, Sams Teach Yourself

Developing 2D Games with Unity

Essential Mathematics for Games and Interactive Applications

Learn OpenGL

Creating iPhone and iPad Apps with Swift

If you have C# knowledge but now want to become truly confident in creating fully functional 2D RPG games with Unity, then this book will show you everything you need to know.

Unity 2021 Cookbook is a practical guide with recipes covering a wide variety of Unity's essential features. This new edition has been fully updated for Unity 2021 to help you discover not only the latest features but also modern game development practices.

Discover how to make your Unity projects look stunning with Shaders and screen effects

Explore modern game programming and rendering techniques to build games using C++ programming language and its popular libraries Key Features Learn how you can build basic 2D and complex 3D games with C++ Understand shadows, texturing, lighting, and rendering in 3D game development using OpenGL Uncover modern graphics programming techniques and GPU compute methods using the Vulkan API Book Description Although numerous languages are currently being used to develop games, C++ remains the standard for fabricating expert libraries and tool chains for game development. This book introduces you to the world of game development with C++. C++ Game Development By Example starts by touching upon the basic concepts of math, programming, and computer graphics and creating a simple side-scrolling action 2D game. You'll build a solid foundation by studying basic game concepts such as creating game loops, rendering 2D game scenes using SFML, 2D sprite creation and animation, and collision detection. The book will help you advance to creating a 3D physics puzzle game using modern OpenGL and the Bullet physics engine. You'll understand the graphics pipeline, which entails creating 3D objects using vertex and index buffers and rendering them to the scene using vertex and fragment shaders. Finally, you'll create a basic project using the Vulkan library that'll help you get to grips with creating swap chains, image views, render passes, and frame buffers for building high-performance graphics in your games. By the end of this book, you'll be ready with 3 compelling projects created with SFML, the Vulkan API, and OpenGL, and you'll be able take your game and graphics programming skills to the next level. What you will learn Understand shaders and how to write a basic vertex and fragment shader Build a Visual Studio project and add SFML to it Discover how to create sprite animations and a game character class Add sound effects and background music to your game Grasp how to integrate Vulkan into Visual Studio Create shaders and convert them to the SPIR-V binary format Who this book is for If you're a developer keen to learn game development with C++ or get up to date with game development, this book is for you. Some knowledge of C++ programming is assumed.

Real-Time 3D Rendering with DirectX and HLSL

Unity Shaders and Effects Cookbook

Over 140 recipes to take your Unity game development skills to the next level, 4th Edition

Practical GPU Graphics with wgpu and Rust

Foundations of 3D Graphics Programming

Godot Engine Game Development Projects

All-in-one, multi-platform game development

Pixel shaders are some of the more powerful graphic tools available for XAML programmers, but shader development bears little resemblance to traditional .NET programming. With this hands-on book, you'll not only discover how to use existing shaders in your Windows Presentation Foundation (WPF) and Silverlight applications, you'll also learn how create your own effects with XAML and Microsoft's HLSL shading language. In the process, you'll write, compile, and test custom XAML shaders with the Shazzam Shader Editor, a free utility developed by author Walt Ritscher. The book includes XAML and C# sample code, and Shazzam contains all of the sample shaders discussed. Learn how shaders help you extend the GPU's rendering capabilities Explore prevailing shader types, such as color modification, blurring, and spatial transformation Get a quick tour of the shader features, and use pre-built effects on image elements in your application Examine the XAML ShaderEffect class to understand how WPF and Silverlight use shaders Learn about the shader-specific tools available in Visual Studio and Expression Blend Get up to speed on HLSL basics and learn how to create a variety of graphics effects

OpenGL® Shading Language, Third Edition, extensively updated for OpenGL 3.1, is the experienced application programmer's guide to writing shaders. Part reference, part tutorial, this book thoroughly explains the shift from fixed-functionality graphics hardware to the new era of programmable graphics hardware and the additions to the OpenGL API that support this programmability. With OpenGL and shaders written in the OpenGL Shading Language, applications can perform better, achieving stunning graphics effects by using the capabilities of both the visual processing unit and the central processing unit. In this book, you will find a detailed introduction to the OpenGL Shading Language (GLSL) and the new OpenGL function calls that support it. The text begins by describing the syntax and semantics of this high-level programming language. Once this foundation has been established, the book explores the creation and manipulation of shaders using new OpenGL function calls. OpenGL® Shading Language, Third Edition, includes updated descriptions for the language and all the GLSL entry points added though OpenGL 3.1, as well as updated chapters that discuss transformations, lighting, shadows, and surface characteristics. The third edition also features shaders that have been updated to OpenGL Shading Language Version 1.40 and their underlying algorithms, including Traditional OpenGL fixed functionality Stored textures and procedural textures Image-based lighting Lighting with spherical harmonics Ambient occlusion and shadow mapping Volume shadows using deferred lighting Ward's BRDF model The color plate section illustrates the power and sophistication of the OpenGL Shading Language. The API Function Reference at the end of the book is an excellent guide to the API entry points that support the OpenGL Shading Language.

Bring realism to your games by mastering post-processing effects and advanced shading techniques in Unity 2018 Key Features Learn the secrets of creating AAA quality shaders without writing long algorithms Master shader programming through easy-to-follow examples Create stunning visual effects that can be used in 3D games Book Description Since their introduction to Unity, shaders have been seen as notoriously difficult to understand and implement in games. Complex mathematics has always stood in the way of creating your own shaders and attaining the level of realism you crave. Unity 2018 Shaders and Effects Cookbook changes that by giving you a recipe-based guide to creating shaders using Unity. It will show you everything you need to know about vectors, how lighting is constructed with them, and how textures are used to create complex effects without the heavy math. This book starts by teaching you how to use shaders without writing code with the post-processing stack. Then, you'll learn how to write shaders from scratch, build up essential lighting, and finish by creating stunning screen effects just like those in high-quality 3D and mobile games. You'll discover techniques, such as normal mapping, image-based lighting, and animating your models inside a shader. We'll explore how to use physically based rendering to treat light the way it behaves in the real world. At the end, we'll even look at Unity 2018's new Shader Graph system. With this book, what seems like a dark art today will be second nature by tomorrow. What you will learn Understand physically based rendering to fit the aesthetic of your game Write shaders from scratch in ShaderLab and HLSL/Cg Combine shader programming with interactive scripts to add life to your materials Design efficient shaders for mobile platforms without sacrificing their realism Use state-of-the-art techniques, such as volumetric explosions and fur shading Master the math and algorithms behind the most used lighting models Understand how shader models have evolved and how you can create your own Who this book is for Unity Shaders and Effects Cookbook is for developers who want to create their first shaders in Unity 2018 or wish to take their game to a whole new level by adding professional post-processing effects. A solid understanding of Unity is required to get the most from this book.

Get Started Quickly with DirectX 3D Programming: No 3D Experience Needed This step-by-step text demystifies modern graphics programming so you can quickly start writing professional code with DirectX and HLSL. Expert graphics instructor Paul Varcholik starts with the basics: a tour of the Direct3D graphics pipeline, a 3D math primer, and an introduction to the best tools and support libraries. Next, you'll discover shader authoring with HLSL. You'll implement basic lighting models, including ambient lighting, diffuse lighting, and specular highlighting. You'll write shaders to support point lights, spotlights, environment mapping, fog, color blending, normal mapping, and more. Then you'll employ C++ and the Direct3D API to develop a robust, extensible rendering engine. You'll learn about virtual cameras, loading and rendering 3D models, mouse and keyboard input, and you'll create a flexible effect and material system to integrate your shaders. Finally, you'll extend your graphics knowledge with more advanced material, including post-processing techniques for color filtering, Gaussian blurring, bloom, and distortion mapping. You'll develop shaders for casting shadows, work with geometry and tessellation shaders, and implement a complete skeletal animation system for importing and rendering animated models. You don't need any experience with 3D graphics or the associated math: Everything's taught hands-on, and all graphics-specific code is fully explained. Coverage includes • The Direct3D API and graphics pipeline • A 3D math primer: vectors, matrices, coordinate systems, transformations, and the DirectX Math library • Free and low-cost tools for authoring, debugging, and profiling shaders • Extensive treatment of HLSL shader authoring • Development of a C++ rendering engine • Cameras, 3D models, materials, and lighting • Post-processing effects • Device input, component-based architecture, and software services • Shadow mapping, depth maps, and projective texture mapping • Skeletal animation • Geometry and tessellation shaders • Survey of rendering optimization, global illumination, compute shaders, deferred shading, and data-driven engine architecture

Beginning 3D Game Development with Unity

Advances in Human Factors and Simulation

Build five cross-platform 2D and 3D games with Godot 3.0

A Practical Guide to Graphics Programming

Programming 3D Applications with HTML5 and WebGL

Creating Advanced GPU Graphics on Native Devices and the Web in Rust Using wgpu – the Next-Generation Graphics API

Leveraging the JavaFX APIs

Learn OpenGL will teach you the basics, the intermediate, and tons of advanced knowledge, using modern (core-profile) OpenGL. The aim of this book is to show you all there is to modern OpenGL in an easy-to-understand fashion, with clear examples and step-by-step instructions, while also providing a useful reference for later studies.

In just 24 sessions of one hour or less, this guide will help you create great 2D and 3D games for any platform with the 100% free Godot 3.0 game engine. Its straightforward, step-by-step approach guides you from basic scenes, graphics, and game flow through advanced shaders, environments, particle rendering, and networked games. Godot's co-creator and main contributorwalk you through building three complete games, offering advanced techniques you won't find anywhere else. Every lesson builds on what you've already learned, giving you a rock-solid foundation for real-world success. Step-by-step instructions carefully walk you through the most common Godot engine programming tasks and techniques Practical, hands-on examples show you how to apply what you learn Quizzes and exercises help you test your knowledge and stretch your skills Notes and tips point out shortcuts, solutions, and problems to avoid Learn how to... · Install Godot, create projects, and use the visual editor · Master the scene system, and organize games with Scene Trees · Create 2D graphics, 3D graphics, and animations · Use basic and advanced scripting to perform many game tasks · Process player input from any source · Control game flow, configurations, and resources · Maximize realism with Godot's physics and particle systems · Make the most of 3D shaders, materials, lighting, and shadows · Control effects and post-processing · Build richer, more sophisticated game universes with viewports · Develop networked games, from concepts to communication and input · Export games to the devices you've targeted · Integrate native code, third-party APIs, and engine extensions (bonus chapter)

Implementing shaders in your games can be notoriously challenging due to the complex math that stands in the way of attaining realism in games. This fourth edition, updated to Unity 2021, covers everything you need to know about vectors, constructing lighting with them, and using textures to create sophisticated effects without the complex math.

Graphics Shaders: Theory and Practice is intended for a second course in computer graphics at the undergraduate or graduate level, introducing shader programming in general, but focusing on the GLSL shading language. While teaching how to write programmable shaders, the authors also teach and reinforce the fundamentals of computer graphics. The second edition has been updated to incorporate changes in the OpenGL API (OpenGL 4.x and GLSL 4.x0) and also has a chapter on the new tessellation shaders, including many practical examples. The book starts with a quick review of the graphics pipeline, emphasizing features that are rarely taught in introductory courses, but are immediately exposed in shader work. It then covers shader-specific theory for vertex, tessellation, geometry, and fragment shaders using the GLSL 4.x0 shading language. The text also introduces the freely available glman tool that enables you to develop, test, and tune shaders separately from the applications that will use them. The authors explore how shaders can be used to support a wide variety of applications and present examples of shaders in 3D geometry, scientific visualization, geometry morphing, algorithmic art, and more. Features of the Second Edition: Written using the most recent specification releases (OpenGL 4.x and GLSL 4.x0) including code examples brought up-to-date with the current standard of the GLSL language. More examples and more exercises A chapter on tessellation shaders An expanded Serious Fun chapter with examples that illustrate using shaders to produce fun effects A discussion of how to handle the major changes occurring in the OpenGL standard, and some C++ classes to help you manage that transition The authors thoroughly explain the concepts, use sample code to describe details of the concepts, and then challenge you to extend the examples. They provide sample source code for many of the book's examples at www.cgeducation.org Develop Custom Lighting Systems

Multi-platform game development for iOS, Android, and more

The Cg Tutorial

Creating 3D Games

Unity 2021 Shaders and Effects Cookbook

CORP 2011 Proceedings/Tagungsband

2D Graphics Programming for Games

wgpu is the next-generation graphics API and future standard in Rust for both native devices and the web, aiming to provide modern 3D graphics and computation capabilities using GPU acceleration. This book provides all the tools you need to create advanced 3D graphics and GPU computing in Rust using this new wgpu API. First, this book will take you through the development environment for building wgpu applications in Rust, and then introduce Rust and wgpu basics, shader programs, GPU buffers, and rendering pipelines. Next, you will learn how to create primitives and simple objects in wgpu. As you progress through the chapters, you will get to grips with advanced wgpu topics, including 3D transformations, lighting calculations, colormaps, and textures. At the same time, you will learn how to create advanced 3D wgpu objects, including various 3D wireframes, 3D shapes, and simple and parametric 3D surfaces with colormaps and textures, as well as beautiful 2D and 3D fractal images described by complex functions. In addition, you will explore new wgpu features such as the compute shader and storage buffers, and use them to simulate large particle systems. By the end of this book, you will have the solid skills you need to build your own GPU-accelerated graphics and computing applications on both native devices and the web in Rust with the wgpu API. This book includes: - Development environment and tools for building wgpu apps in Rust. - Rust and wgpu basics, WGSL shaders, and rendering pipeline. - Primitives and simple shapes in wgpu. - 3D transformations, model, viewing, projection, and various coordinate systems. - GPU buffers, uniform buffer objects, animation, and camera controls. - Normal vectors, lighting model, ambient, diffuse, and specular light calculations. - UV coordinates, texture mapping. - Color model, colormaps, and color interpolation. - 3D shapes, wireframes, surfaces, and 3D charts. - 2D and 3D fractal images created in the fragment shader. - Compute shaders, storage buffers, and large particle system simulation.

Follow a walkthrough of the Unity Engine and learn important 2D-centric lessons in scripting, working with image assets, animations, cameras, collision detection, and state management. In addition to the fundamentals, you'll learn best practices, helpful game-architectural patterns, and how to customize Unity to suit your needs, all in the context of building a working 2D game. While many books focus on 3D game creation with Unity, the easiest market for an independent developer to thrive in is 2D games. 2D games are generally cheaper to produce, more feasible for small teams, and more likely to be completed. If you live and breathe games and want to create them then 2D games are a great place to start. By focusing exclusively on 2D games and Unity's ever-expanding 2D workflow, this book gives aspiring independent game developers the tools they need to thrive. Various real-world examples of independent games are used to teach fundamental concepts of developing 2D games in Unity, using the very latest tools in Unity's updated 2D workflow. New all-digital channels for distribution, such as Nintendo eShop, Xbox Live Marketplace, the Playstation Store, the App Store, Google Play, itch.io, Steam, and GOG.com have made it easier than ever to discover, buy, and sell games. The golden age of independent gaming is upon us, and there has never been a better time to get creative, roll up your sleeves, and build that game you've always dreamed about. Developing 2D Games with Unity can show you the way. What You'll Learn Delve deeper into useful 2D topics, such as sprites, tile slicing, and the brand new Tilemap feature. Build a working 2D RPG-style game as you learn.Construct a flexible and extensible game architecture using Unity-specific tools like Scriptable Objects, Cinemachine, and Prefabs.Take advantage of the streamlined 2D workflow provided by the Unity environment. Deploy games to desktop Who This Book Is For Hobbyists with some knowledge of programming, as well as seasoned programmers interested in learning to make games independent of a major studio.

MR technologies play an increasing role in different aspects of human-robot interactions. The visual combination of digital contents with real working spaces creates a simulated environment that is set out to enhance these aspects. This book presents and discusses fundamental scientific issues, technical implementations, lab testing, and industrial applications and case studies of Mixed Reality in Human-Robot Interaction. It is a reference book that not only acts as meta-book in the field that defines and frames Mixed Reality use in Human-Robot Interaction, but also addresses up-coming trends and emerging directions of the field. This volume offers a comprehensive reference volume to the state-of-the-art in the area of MR in Human-Robot Interaction, an excellent mix of contributions from leading researcher/experts in multiple disciplines from academia and industry. All authors are experts and/or top researchers in their respective areas and each of the chapters has been rigorously reviewed for intellectual contents by the editorial team to ensure a high quality. This book provides up-to-date insight into the current research topics in this field as well as the latest technological advancements and the best working examples.

Benefit from the latest rendering tech developments, currently covered only in papers and talks from Siggraph, in a way any developer or technical artist using Unity can take advantage of. This book starts by introducing how shader programming works in general, the common principles of different platforms (OpenGL, Vulkan, and DirectX), and the shading languages Unity uses: Cg, GLSL, and ShaderLab. Physically Based Shader Development for Unity 2017 discusses artistic choices, presenting various techniques (such as translucency and subsurface scattering) and BRDFs (Oren-Nayar, Cook-Torrance, and Ashikhmin-Shirley), and what they can be used for. Finally you'll cover the importance of optimizing your code by developing approximations, which achieve similar end results, but are computationally cheaper. By the end of your journey you'll be able to develop the look of your game or Unity-rendered animated short so that it looks both unique and impressively realistic, thanks to your own custom lighting system. What You Will Learn Master shader programming Gain all you need to know about physically based shading Take almost full control of the shader subsystem Discover what you can achieve with that control Implement a custom physically based lighting system and examine the logic behind every choice Who This Book Is For Most game developers (both indie and AA) that use Unity and technical artists who are responsible for the final look of a game.

iOS 10 SDK Development

Practical Shader Development

Practical Rendering and Computation with Direct3D 11

Over 50 recipes to help you transform your game into a visually stunning masterpiece, 4th Edition

Graphics Shaders

Physically Based Shader Development for Unity 2017

The Definitive Guide to Programmable Real-time Graphics

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 OpenGL. 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.

A project based guides to learn animation, advanced shaders, environments, particle rendering, and networked games with Godot 3.0 Key Features Learn the art of developing cross-platform games Leverage Godot's node and scene system to design robust, reusable game objects Integrate Blender easily and efficiently with Godot to create powerful 3D games Book Description Godot Engine Game Development Projects is an introduction to the Godot game engine and its new 3.0 version. Godot 3.0 brings a large number of new features and capabilities that make it a strong alternative to expensive commercial game engines. For beginners, Godot offers a friendly way to learn game development techniques, while for experienced developers it is a powerful, customizable tool that can bring your visions to life. This book consists of five projects that will help developers achieve a sound understanding of the engine when it comes to building games. Game development is complex and involves a wide spectrum of knowledge and skills. This book can help you build on your foundation level skills by showing you how to create a number of small-scale game projects. Along the way, you will learn how Godot works and discover important game development techniques that you can apply to your projects. Using a straightforward, step-by-step approach and practical examples, the book will take you from the absolute basics through to sophisticated game physics, animations, and other techniques. Upon completing the final project, you will have a strong foundation for future success with Godot 3.0. What you will learn Get started with the Godot game engine and editor Organize a game project Import graphical and audio assets Use Godot's node and scene system to design robust, reusable game objects Write code in GDScript to capture input and build complex behaviors Implement user interfaces to display information Create visual effects to spice up your game Learn techniques that you can apply to your own game projects Who this book is for Godot Engine Game Development Projects is for both new users and experienced developers, who want to learn to make games using a modern game engine. Some prior programming experience in C and C++ is recommended.

Over 100 recipes exploring the new and exciting features of Unity 5 to spice up your Unity skillset About This Book Built on the solid foundation of the popular Unity 4.x Cookbook, the recipes in this edition have been completely updated for Unity 5 Features recipes for both 2D and 3D games Provides you with techniques for the new features of Unity 5, including the new UI system, 2D game development, new Standard Shaders, and the new Audio Mixer Who This Book Is For From beginners to advanced users, from artists to coders, this book is for you and everyone in your team! Programmers can explore multimedia features, and multimedia developers can try their hand at scripting. Basic knowledge and understanding of the Unity platform, game design principles, and programming knowledge in C# is essential. What You Will Learn Immerse players with great audio, utilizing Unity 5's audio features including the new Audio Mixer, ambient sound with Reverb Zones, dynamic soundtracks with Snapshots, and balanced audio via Ducking Create better materials with Unity's new, physically-based, Standard Shader Measure and control time, including pausing the game, displaying clocks and countdown timers, and even implementing "bullet time" effects Improve ambiance through the use of lights and effects such as reflection and light probes Create stylish user interfaces with the new UI system, including power-bars, clock displays, and an extensible inventory system Save and load text and media assets from local or remote sources, publish your game via Unity Cloud, and communicate with websites and their databases to create online scoreboards Discover advanced techniques, including the publisher-subscriber and state patterns, performance bottleneck identification, and methods to maximize game performance and frame rates Control 2D and 3D character movement, and use NavMeshAgents to write NPC and enemy behaviors such as seek, flee, flock, and waypoint path following In Detail Unity 5 is a flexible and intuitive multiplatform game engine that is becoming the industry's de facto standard. Learn to craft your own 2D and 3D computer games by working through core concepts such as animation, audio, shaders, GUI, lights, cameras, and scripting to create your own games with Unity 5. Completely re-written to cover the new features of Unity 5, this book is a great resource for all Unity game developers, from those who have recently started using Unity right up to Unity professionals. The first half of the book focuses on core concepts of 2D game design while the second half focuses on developing 3D game development skills. In the first half, you will discover the new GUI system, the new Audio Mixer, external files, and animating 2D characters in 2D game development. As you progress further, you will familiarize yourself with the new Standard Shaders, the Mecanim system, Cameras, and the new Lighting features to hone your skills towards building 3D games to perfection. Finally, you will learn non-player character control and explore Unity 5's extra features to enhance your 3D game development skills. Style and approach Each chapter first introduces the topic area and explains how the techniques covered can enhance your games. Every recipe provides step-by-step instructions, followed by an explanation of how it all works, and useful additional refinements or alternative approaches. Every required resource and C# script (fully commented) is available to download, enabling you to follow each recipe yourself.

Mastering Unity 2D Game Development

3D Animation and Visualization for Web Pages

Unity 5.x Cookbook

Programming 2D Games