

An Introduction To Unreal Engine 4 Focal Press Game Design Workshops

Mastering Unreal Engine: A Beginner's Guide introduces developers of all ages to the beautiful and valuable world of Unreal Engine in particular and game development in general. Unreal Engine is a complete development suite for anyone working with real-time technology when it comes to game development. It provides flexibility and power to artists across many sectors to generate cutting-edge entertainment, engaging visualizations, and immersive virtual environments for games and infotainment alike. Unreal Engine is a prominent game creation engine that is free to use. The majority of people associate Unreal Engine with 3D games. However, it may also be used to create 2D games with ease. It is the de facto standard in the world of game development. That said, it is not hard to be confused when getting started with Unreal Engine because of the wide range of features that it provides. Mastering Unreal Engine will teach you exactly where to begin. You will learn how to download Unreal Engine, construct your first game, start your game, receive an introduction to blueprints, and ultimately, develop a workable framework. Unreal Engine is a robust game development engine that offers a wide range of features for creating 2D and 3D games on various platforms. Unreal Engine technology powers hundreds of games, and thousands of people have created careers and businesses on the skills they learned while working with this engine. To help you get the most out of this powerful piece of technology, Mastering Unreal Engine begins with simple game ideas and playable projects that you can complete at your own pace. The book starts by covering the foundations of using Unreal Engine to build a simple game level. You will also learn how to add such details to the game as actors, animation, and effects. Mastering Unreal Engine talks at length about the various features of the Unreal Engine game engine, how to install it and how to construct a project in C++, and good coding practices for game development. Furthermore, the book also covers certain niche areas, such as how to utilize Visual Studio in gaming, and how to use existing predefined blueprints to grow and foster a game. More importantly, Mastering Unreal Engine is perhaps one of the first beginner-level books in its league that covers topics related to the Behavior Tree and Blackboard with Artificial Intelligence and multiplayer gameplay in Unreal Engine. Note: This book assumes you have a working knowledge of C++ programming. Learn more about our other Mastering titles at: <https://www.routledge.com/Mastering-Computer-Science/book-series/MCS>

Combine the powerful UE4 with Blender to create visually appealing and comprehensive game environments About This Book The only resource that shows how you can incorporate Blender into your Unreal Engine 4 Game environment Create amazing 3D game environments by leveraging the power of Blender and Unreal Engine 4 Practical step-by-step approach with plenty of illustrative examples to get you started immediately Who This Book Is For This book would be ideal for 3D artists and game designers who want to create amazing 3D game environments and leverage the power of Blender with Unreal Engine 4. 3D design basics would be necessary to get the most out of this book. Some previous experience with Blender would be helpful but not essential What You Will Learn Create a fully functioning game level of your own design using Blender and Unreal Engine 4 Customize your level with detailed 3D assets created with Blender Import assets into Unreal Engine 4 to create an amazing finished product Build a detailed dynamic environment with goals and an ending Explore Blender's incredible animation tools to animate elements of your game Create great environments using sound effects, particle effects, and class blueprints In Detail Unreal Engine 4 now has support for Blender, which was not available in earlier versions. This has opened up new possibilities and that is where this book comes in. This is the first book in the market combining these two powerful game and graphic engines. Readers will build an amazing high-level game environment with UE4 and will show them how to use the power of Blender 3D to create stunning animations and 3D effects for their game. This book will start with creating levels, 3D assets for the game, game progression, light and environment control, animation, and so on. Then it will teach readers to add amazing visual effects to their game by applying rendering, lighting, rigging, and compositing techniques in Blender. Finally, readers will learn how to smoothly transfer blender files to UE4 and animate the game assets. Each chapter will add complexities to the game environment. Style and approach This will have a clear, step-by-step approach to creating game assets in Blender and then importing them to UE4 to create stunning game environments. All asset creation techniques are explained in detail along with tips on how to use them to create your own game environments. The book offers end-to-end coverage of how to design a game level from scratch.

An example-based practical guide to get you up and running with Unreal Engine 4.X About This Book A unique resource on Unreal with an interactive example based approach that is sure to get you up and running immediately Will feature four unique game projects that increase in complexity which will enable readers to build their game development skills using Unreal Engine 4 and the C++ programming language Will be the most up to date book in the market on Unreal with full coverage of the new features of UE4 Who This Book Is For Unreal Engine 4.X by Example was written for keen developers who wish to learn how to fully utilise Unreal Engine 4 to make awesome and engrossing game titles. Whether you are brand new to game development or a seasoned expert, you will be able to make use of the engine with C++. Experience with both C++ and other game engines is preferred before embarking on the Unreal by Example journey, but with a little external research into the basics of C++ programming, this book can take a complete game development novice to an Unreal Engine Developer! What You Will Learn Use C++ with Unreal Engine to boost the development potential of any Unreal Engine project Vastly improve workflow and content creation with the visual scripting system blueprint Design, test, and implement interesting game worlds using Unreal Engines built-in editor Build a networked, feature-rich first person shooter that you can play with others over LAN Build design-centric game worlds that play to needs of your game ideas Paint your game worlds via the creation and modification of visual shaders called materials Gain knowledge of other game development disciplines through the use of the Animation and Material tool sets Create feature-rich game projects with a sophisticated visual quality and feature set In Detail With Unreal Engine 4 being made free to use, for any keen game developer it is quickly becoming the most popular game engine in today's development industry. The engine offers a rich feature set that can be customized and built upon through the use of C++. This book will cover how to work with Unreal Engine's tool set all the way from the basics of the editor and the visual scripting system blueprint to the in-depth low-level creation of content using C++. This book will provide you with the skills you need to create feature-rich, captivating, and refined game titles with Unreal Engine 4. This book will take you through the creation of four unique game projects, designed so that you will be ready to apply the engine's rich development capabilities. You will learn not only to take advantage of the visual tools of the engine, but also the vast and powerful programming feature set of Unreal Engine 4. Style and approach The best resource that any beginner level game developer can dream of with examples on leveraging the amazing graphics engine, beautiful character animation and game world generations etc. by means of exciting real world game generation. This book would be a very unique resource for any game developer who wants to get up and running with Unreal. The unique example-driven approach will take you through the most basic games towards the more complex ones and will gradually build your skill level.

If you are really passionate about games and have always wanted to write your own, this book is perfect for you. It will help you get started with programming in C++ and explore the immense functionalities of UE4.

Unreal Engine 4 Shaders and Effects Cookbook

Learn C++ and Unreal Engine by Creating a Complete Action Game

Developing Stunning Interactive Visualizations, Animations, and Renderings

Unreal Engine 4.X By Example

Mastering Unreal Technology: Vol. 1: Introduction to Level Design with Unreal Engine 3. Vol. 1

A Beginner's Guide

Game Development and Simulation with Unreal Technology explores the use of Unreal Engine 4 (UE4) for the development of real-time digital interactive contents to be used in computerized games or simulations. The engine is considered in three main iterations: from the basic use of the engine to build games and simulation content out of the box, to i

Learn how to use Unreal Engine 4 by building 3D and multiplayer games using Blueprints Key Features Learn the fundamentals of Unreal Engine such as project templates, Blueprints, and C++ Learn to design games; use UMG to create menus and HUDs, and replication to create multiplayer games Build dynamic game elements using Animation Blueprints and Behavior Trees Book Description Unreal Engine is a popular game engine for developers to build high-end 2D and 3D games. This book is a practical guide, starting off by quickly introducing you to the Unreal Engine 4 (UE4) ecosystem. You will learn how to create Blueprints and C++ code to define your game's functionality. You will be familiarized with the core systems of UE4 such as UMG, Animation Blueprints, and Behavior Trees. You will also learn how to use replication to create multiplayer games. By the end of this book, you will have a broad, solid knowledge base to expand upon on your journey with UE4. What you will learn Use project templates to give your game a head start Create custom Blueprints and C++ classes and extend from Epic's base classes Use UMG to create menus and HUDs for your game Create more dynamic characters using Animation Blueprints Learn how to create complex AI with Behavior Trees Use replication to create multiplayer games Optimize, test, and deploy a UE4 project Who this book is for Readers who already have some game development experience and Unity users who would like to try UE4 will all benefit from this book. Knowledge of basic Object-Oriented Programming topics such as variables, functions, and classes is assumed.

The Official, Full-Color Guide to Developing Interactive Visualizations, Animations, and Renderings with Unreal Engine 4 Unreal Engine 4 (UE4) was created to develop video games, but it has gone viral among architecture, science, engineering, and medical visualization communities. UE4's stunning visual quality, cutting-edge toolset, unbeatable price (free), and unprecedented ease of use redefines the state of the art and has turned the gaming, film, and visualization industries on their heads. Unreal Engine 4 for Design Visualization delivers the knowledge visualization professionals need to leverage UE4's immense power. World-class UE4 expert Tom Shannon introduces Unreal Engine 4's components and technical concepts, mentoring you through the entire process of building outstanding visualization content—all with realistic, carefully documented, step-by-step sample projects. Shannon answers the questions most often asked about UE4 visualization, addressing issues ranging from data import and processing to lighting, advanced materials, and rendering. He reveals important ways in which UE4 works differently from traditional rendering systems, even when it uses similar terminology. Throughout, he writes from the perspective of visualization professionals in architecture, engineering, or science—not gaming. Understand UE4's components and development environment Master UE4's pipeline from source data to delivered application Recognize and adapt to the differences between UE4 and traditional visualization and rendering techniques Achieve staggering realism with UE4's Physically Based Rendering (PBR) Materials, Lighting, and Post-Processing pipelines Create production-ready Materials with the interactive real-time Material Editor Quickly set up projects, import massive datasets, and populate worlds with accurate visualization data Develop bright, warm lighting for architectural visualizations Create pre-rendered animations with Sequencer Use Blueprints Visual Scripting to create complex interactions without writing a single line of code Work with (and around) UE4's limitations and leveraging its advantages to achieve your vision All UE4 project files and 3ds Max source files, plus additional resources and links, are available at the book's companion website.

Blueprints Visual Scripting for Unreal Engine is a step-by-step approach to building a fully functional game, one system at a time. Starting with a basic First Person Shooter template, each chapter will extend the prototype to create an increasingly complex and robust game experience. You will progress from creating basic shooting mechanics to gradually more complex systems that will generate user interface elements and intelligent enemy behavior. Focusing on universally applicable skills, the expertise you will develop in utilizing Blueprints can translate to other types of genres. By the time you finish the book, you will have a fully functional First Person Shooter game and the skills necessary to expand on the game to develop an entertaining, memorable experience for your players. From making customizations to player movement to creating new AI and game mechanics from scratch, you will discover everything you need to know to get started with game development using Blueprints and Unreal Engine 4.

Game Development and Simulation with Unreal Technology

Unreal Engine 4 Scripting with C++ Cookbook

Game Engine Architecture, Second Edition

Foundation for Simple to Complex Games Using Unreal Engine 4

Introduction to Level Design with Unreal Engine 3

Game Engine Architecture, Third Edition

Hailed as a "must-have textbook" (CHOICE, January 2010), the first edition of Game Engine Architecture provided readers with a complete guide to the theory and practice of game engine software development. Updating the content to match today's landscape of game engine architecture, this second edition continues to thoroughly cover the major components that make up a typical commercial game engine. New to the Second Edition Information on new topics, including the latest variant of the C++ programming language, C++11, and the architecture of the eighth generation of gaming consoles, the Xbox One and PlayStation 4 New chapter on audio technology covering the fundamentals of the physics, mathematics, and technology that go into creating an AAA game audio engine Updated sections on multicore programming, pipelined CPU architecture and optimization, localization, pseudovectors and Grassman algebra, dual quaternions, SIMD vector math, memory alignment, and anti-aliasing Insight into the making of Naughty Dog's latest hit, The Last of Us The book presents the theory underlying various subsystems that comprise a commercial game engine as well as the data structures, algorithms, and software interfaces that are typically used to implement them. It primarily focuses on the engine itself, including a host of low-level foundation systems, the rendering engine, the collision system, the physics simulation, character animation, and audio. An in-depth discussion on the "gameplay foundation layer" delves into the game's object model, world editor, event system, and scripting system. The text also touches on some aspects of gameplay programming, including player mechanics, cameras, and AI. An awareness-building tool and a jumping-off point for further learning, Game Engine Architecture, Second Edition gives readers a solid understanding of both the theory and common practices employed within each of the engineering disciplines covered. The book will help readers on their journey through this fascinating and multifaceted field.

Create responsive and intelligent game AI using Blueprints in Unreal Engine 4 About This Book Understand and apply your Game AI better through various projects such as adding randomness and probability, and introducing movement Configure and debug Game AI logic using multiple methodologies Bridge the gap between your knowledge and Game AI in Unreal Engine 4 Who This Book Is For This book is for programmers and artists who want to expand their knowledge of Game AI in relation to Unreal Engine 4. You are recommended to have some experience of exploring Unreal Engine 4 prior to this book because we jump straight into Game AI. What You Will Learn Understand the fundamental components of Game AI within Unreal Engine 4 Skillfully introduce Game AI within Unreal Engine 4 Configure, customize, and assign Navigation and AI components to your pawn Create, debug, and analyze Game AI behavior Design responsive Game AI using the Behavior Tree methodology Create smart objects designed to interact with AI Utilize advanced AI features within your project to maximize the user experience In Detail Unreal Engine is a powerful game development engine that provides rich functionalities to create 2D and 3D games. Developers have the opportunity to build cross-platform mobile and desktop games from scratch. This book will show you how to apply artificial intelligence (AI) techniques to your Unreal project using blueprints as your scripting language. You will start with an introduction to AI, and learn how it is applied to gaming. Then you'll jump right in and create a simple AI bot and apply basic behaviors to allow it to move randomly. As you progress, you'll find out how to implement randomness and probability traits. Using NavMesh, you will impart navigation components such as character movement, MoveTo nodes, settings, and world objects, and implement Behavior Trees. At the end of the book, you will troubleshoot any issues that might crop up while building the game. Style and approach This easy-to-follow project-based guide throws you directly into the excitement of Game AI in an approachable and comprehensive manner.

Get the best out of your games by scripting them using UE4 About This Book A straightforward and easy-to-follow format A selection of the most important tasks and problems Carefully organized instructions to solve problems efficiently Clear explanations of what you did Solutions that can be applied to solve real-world problems Who This Book Is For This book is intended for game developers who understand the fundamentals of game design and C++ and would like to incorporate native code into the games they make with Unreal. They will be programmers who want to extend the engine, or implement systems and Actors that allow designers control and flexibility when building levels. What You Will Learn Build function libraries (Blueprints) containing reusable code to reduce upkeep Move low-level functions from Blueprint into C++ to improve performance Abstract away complex implementation details to simplify designer workflows Incorporate existing libraries into your game to add extra functionality such as hardware integration Implement AI tasks and behaviors in Blueprints and C++ Generate data to control the appearance and content of UI elements In Detail Unreal Engine 4 (UE4) is a complete suite of game development tools made by game developers, for game developers. With more than 100 practical recipes, this book is a guide showcasing techniques to use the power of C++ scripting while developing games with UE4. It will start with adding and editing C++ classes from within the Unreal Editor. It will delve into one of Unreal's primary strengths, the ability for designers to customize programmer-developed actors and components. It will help you understand the benefits of when and how to use C++ as the scripting tool. With a blend of task-oriented recipes, this book will provide actionable information about scripting games with UE4, and manipulating the game and the development environment using C++.

Towards the end of the book, you will be empowered to become a top-notch developer with Unreal Engine 4 using C++ as the scripting language. Style and approach A recipe based practical guide to show you how you can leverage C++ to manipulate and change your game behavior and game design using Unreal Engine 4.

An Introduction to Unreal Engine 4AK Peters

A Practical Guide Using the Unreal Engine

Game Development Projects with Unreal Engine

Mastering Unreal Engine

Amsterdam, The Netherlands, October 8-10 and 15-16, 2016, Proceedings, Part III

Learning Unreal Engine Game Development

Elevating Game Experiences with Unreal Engine 5

Over 40 recipes to accelerate the process of learning game design and solving development problems using Unreal Engine About This Book Explore the quickest way to tackle common challenges faced in Unreal Engine Create your own content, levels, light scenes, and materials, and work with Blueprints and C++ scripting An intermediate, fast-paced Unreal Engine guide with targeted recipes to design games within its framework Who This Book Is For This book is for those who are relatively experienced with Unreal Engine 4 and have knowledge of its fundamentals. Working knowledge of C++ is required. What You Will Learn Discover editor functionalities for an in-depth insight into game design Develop environments using terrain for outdoor areas and a workflow for interiors as well using brushes Design various kinds of materials with unique features, such as mirrors and glows Explore the various ways that lighting can be used in the engine Build various level effects using Blueprints, Unreal's visual scripting system Set up a development environment and develop custom functionality with C++ for your games Create healthbars and main menus with animations using Slate, Unreal's UI solution, through the UMG Editor Package and create an installer to get your project out into the world In Detail Unreal Engine is powerful tool with rich functionalities to create games. It equips you with the skills to easily build mobile and desktop games from scratch without worrying about which platform they will run on. You can focus on the individual complexities of game development such as animation and rendering. This book takes you on a journey to jumpstart your game design efforts. You will learn various aspects of the Unreal engine commonly encountered with practical examples of how it can be used, with numerous references for further study. You will start by getting acquainted with Unreal Engine 4 and building out levels for your game. This will be followed by recipes to help you create environments, place meshes, and implement your characters. You will then learn to work with lights, camera, and shadows to include special effects in your game. Moving on, you'll learn Blueprint scripting and C++ programming to enable you to achieve trigger effects and add simple functionalities. By the end of the book, you will see how to create a healthbar and main menu, and then get your game ready to be deployed and published. Style and approach This book offers detailed, easy-to-follow recipes that will help you master a wide range of Unreal Engine 4's features. Every recipe provides step-by-step instructions, with explanations of how these features work, and alternative approaches and research materials so you can learn even more.

The Unreal Engine is a powerful program for building games. Learn how to navigate the Unreal editor by building a Coin Collector game! By the end of this book, you know how to create a game from scratch that responds to user input through keyboard controls. This book makes creating your own game easy and efficient. You learn both the coding and artistic sides to game development. As such, you gain a unique perspective that is familiar with the different skills needed to make a game. Ready to begin? Build optimized, efficient, and real-time applications that are production-ready using Unreal Engine's Material Editor Key Features Create stunning visual effects for 3D games and high-quality graphics Design efficient Shaders for mobile platforms without sacrificing their realism Discover what goes into the structure of Shaders and why lighting works the way it does Book Description Unreal Engine 4 is a powerful game engine, one which has seen a recent boost in widespread adoption thanks to its ease of use and the powerful rendering pipeline that it packs. Seeing as how it's relatively easy to create stunning presentations and visuals, Unreal has quickly become a strong contender in industries where this kind of software had been previously denied entry. With that in mind, this book aims to help you get the most out of Unreal Engine 4 - from creating awe-inspiring graphics to delivering optimized experiences to your users. This is possible thanks to a mixture of hands-on experience with real materials and the theory behind them. You will immediately know how to create that material that you want to display, and you'll also end up with the knowledge that will let you know how to control it. All of this will be done without losing sight of two key components of any real-time application - optimization, and efficiency. The materials that you create will be light and efficient, and they will vary depending on your target platform. You'll know which techniques can be used in any kind of device and which ones should be kept to high-end machines, giving you the confidence to tackle any material-related task that you can imagine. Hop onboard and discover how! What you will learn Master Unreal Engine's rendering pipeline for developing real-time graphics Use physically based rendering (PBR) for building materials and lighting solutions Build optimized materials for games targeting multiple platforms Understand Unreal Engine's node and functions for creating desirable effects Design and build production-ready shaders Explore Unreal Engine's Material Editor for building complex materials and textures Who this book is for This book is for developers who want to create their first Shaders in Unreal Engine 4 or wish to take their game to a whole new level by adding professional post-processing effects. A solid understanding of Unreal is required to get the most from this book.

Discover how Unreal Engine 4 allows you to create exciting games using C++ and Blueprints. This book starts with installing, launching, and examining the details of Unreal Engine. Next, you will learn about Blueprints and C++ and how to leverage them.

The following chapters talk in detail about gameplay, basic physics, and ray-casting for game development in Unreal Engine. Furthermore, you'll create material, meshes, and textures. The last chapter brings all the concepts together by building a demo game. By the end of the book, you'll be equipped with the know-how and techniques needed to develop and deploy your very own game in Unreal Engine. What You Will Learn Discover Blueprints and how to apply them in Unreal Engine 4 Get started with C++ programming in Unreal Engine 4 Apply the concepts of physics and ray-casting Work with the Gameplay Framework Who This Book Is For Beginners interested in learning Blueprints visual scripting and C++ for programming games in Unreal Engine 4

would find this book useful.

Learning C++ by Creating Games with UE4

Unreal Engine 4 Game Development Essentials

Mastering Unreal Technology, Volume I

3D Game Design with Unreal Engine 4 and Blender

Unreal Engine 4 for Design Visualization

Unreal Engine VR Cookbook

Using Unreal Engine 3, the authors teach aspiring game makers the fundamentals of designing a computer game. The only prerequisite is a basic working knowledge of computers and a desire to build an original game. To get the most out of the book, the authors recommend gathering up some friends and working through the book together as a team and with time limits, mimicking the key elements of real world commercial game development. This book mirrors the curriculum used at CampGame, a six week summer program organized for high school students at The New York University and Arizona State University that has been running successfully for over five years. Students enter with no prior knowledge of game making whatsoever, and through the course of six intensive weeks, they finish as teams of budding game developers who have already completed fully functional games with their own designs, code, and art. Unreal® is a registered trademark of Epic Games, Inc. Copyright in the Unreal Development Kit, Unreal Tournament, and Unreal Engine 3 is owned by Epic Games. Content of those programs included in screen shots in this book is copyrighted by Epic Games and used with the permission of Epic Games.

Presents a guide to game development and modding using Unreal Engine.

This is the eBook of the printed book and may not include any media, website access codes, or print supplements that may come packaged with the bound book. " With his YouTube channel, Mitch ' s VR Lab, Mitch has helped thousands of people understand the foundations of locomotion and interaction mechanics with clear and concise UE4 videos. I ' m thrilled that he has taken the time to bring all his knowledge and experience in working with Unreal Engine and Virtual Reality to the Unreal® Engine VR Cookbook. Mitch is uniquely qualified to share this book with the world. "

—Luis Cataldi, Unreal Engine Education, Epic Games, Inc. For game developers and visualization specialists, VR is the next amazing frontier to conquer—and Unreal Engine 4 is the ideal platform to conquer it with. Unreal® Engine VR Cookbook is your complete, authoritative guide to building stunning experiences on any Unreal Engine 4-compatible VR hardware. Renowned VR developer and instructor Mitch McCaffrey brings together best practices, common interaction paradigms, specific guidance on implementing these paradigms in Unreal Engine, and practical guidance on choosing the right approaches for your project. McCaffrey ' s tested " recipes " contain step-by-step instructions, while empowering you with concise explanations of the underlying theory and math. Whether you ' re creating first-person shooters or relaxation simulators, the techniques McCaffrey explains help you get immediate results, as you gain " big picture " knowledge and master nuances that will help you succeed with any genre or project. Understand basic VR concepts and terminology Implement VR logic with Blueprint visual scripting Create basic VR projects with Oculus Rift, HTC Vive, Gear VR, Google VR, PSVR, and other environments Recognize and manage differences between seated and standing VR experiences Set up trace interactions and teleportation Work with UMG and 2D UIs Implement character inverse kinematics (IK) for head and hands Define effective motion controller interaction Help users avoid motion sickness Optimize VR applications Explore the VR editor, community resources, and more If you ' re ready to master VR on Unreal Engine 4, this is the practical resource you ' ve been searching for! Register your product at informit.com/register for convenient access to downloads, updates, and corrections as they become available.

Unreal Engine 4 (UE4) is a popular and award-winning game engine that powers some of the most popular games. A truly powerful tool for game development, there has never been a better time to use it for both commercial and independent projects. With more than 100 recipes, this book shows how to unleash the power of C++ while developing games ...

Bring your game ideas to life using the new Unreal Engine 5 and C++

Programming professional 3D games with Unreal Engine 4

Introduction to Unreal

Developing Virtual Reality with UE4

Game Audio Implementation

Learn to build your first games and bring your ideas to life using UE4 and C++

A step-by-step guide that paves the way for developing fantastic games with Unreal Engine 4 About This Book Learn about game development and the building blocks that go into creating a game A simple tutorial for beginners to get acquainted with the Unreal Engine architecture Learn about the features and functionalities of Unreal Engine 4 and how to use them to create your own games Who This Book Is For If you are new to game development and want to learn how games are created using Unreal Engine 4, this book is the right choice for you. You do not need prior game development experience, but it is expected that you have played games before. Knowledge of C++ would prove to be useful. What You Will Learn Learn what a game engine is, the history of Unreal Engine, and how game studios create games Explore the Unreal Engine 4 editor controls and learn how to use the editor to create a room in a game level Understand the basic structures of objects in a game, such as the differences between BSP and static meshes Make objects interactive using level blueprints Learn more about computer graphics rendering; how materials and light are rendered in your game Get acquainted with the Material Editor to create materials and use different types of lights in the game levels Utilize the various editors, tools, and features such as UI, the particle system, audio, terrain manipulation, and cinematics in Unreal Engine 4 to create game levels In Detail Unreal Engine 4 is a powerful game development engine that provides rich functionalities to create 2D and 3D games across multiple platforms. Many people know what a game is and they play games every day, but how many of them know how to create a game? Unreal Engine technology powers hundreds of games, and thousands of individuals have built careers and companies around skills developed using this engine. Learning Unreal Engine 4 Game Development starts with small, simple game ideas and playable projects that you can actually finish. The book first teaches you the basics of using Unreal Engine to create a simple game level. Then, you'll learn how to add details such as actors, animation, effects, and so on to the game. The complexity will increase over the chapters and the examples chosen will help you learn a wide variety of game development techniques. This book aims to equip you with the confidence and skills to design and build your own games using Unreal Engine 4. By the end of this book, you'll have learnt about the entire Unreal suite and know how to successfully create fun, simple games. Style and approach This book explains in detail what goes into the development of a game, provides hands-on examples that you can follow to create the different components of a game, and provides sufficient background/theory to equip you with a solid foundation for creating your own games.

In just 24 lessons of one hour or less, learn how to start using Unreal Engine 4 to build amazing games for Windows, Mac, PS4, Xbox One, iOS, Android, the web, Linux-or all of them! Sams Teach Yourself Unreal Engine 4 Game Development in 24 Hours' straightforward, step-by-step approach shows you how to work with Unreal Engine 4's interface, its workflows, and its most powerful editors and tools. In just hours you'll be creating effects, scripting warfare, implementing physics-even developing for mobile devices and HUDs. Every lesson builds on what you've already learned, giving you a rock-solid foundation for real-world success. Organize new projects and work with the Gameplay Framework Master Unreal's units and control systems Import 3D models and work with the Static Mesh Editor Create new landscapes and use Unreal's foliage system Bring characters and creatures to life with the Persona Editor Apply materials and build lighting Integrate and modify audio with the Unreal Sound Cue Editor Craft particle effects and simulate physics Set up and react to player inputs Build levels and entirely new worlds Get started with powerful Blueprint visual scripting system Script an arcade game from start to finish Create events that respond to player actions Spawn Actors during gameplay Design and create action-based encounters Optimize games for mobile devices and touch-based inputs Build menus with Unreal's UMG UI Designer Prepare your game for deployment Step-by-step instructions carefully walk you through the most common Unreal Engine 4 game development tasks. 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 and solutions. All the project files and assets you'll need are available for download, including "before-and-after" files demonstrating initial setup and proper completion for every exercise.

Mastering Unreal Engine: A Beginner's Guide introduces developers of all ages to the beautiful and valuable world of Unreal Engine in particular and game development in general. Unreal Engine is a complete development suite for anyone working with real-time technology when it comes to game development. It provides flexibility and power to artists across many sectors to generate cutting-edge entertainment, engaging visualizations, and immersive virtual environments for games and infotainment alike. Unreal Engine is a prominent game creation engine that is free to use. The majority of people associate Unreal Engine with 3D games. However, it may also be used to create 2D games with ease. It is the de facto standard in the world of game development. That said, it is not hard to be confused when getting started with Unreal Engine because of the wide range of features that it provides. Mastering Unreal Engine will teach you exactly where to begin. You will learn how to download Unreal Engine, construct your first game, start your game, receive an introduction to blueprints, and ultimately, develop a workable framework. Unreal Engine is a robust game development engine that offers a wide range of features for creating 2D and 3D games on various platforms. Unreal Engine technology powers hundreds of games, and thousands of people have created careers and businesses on the skills they learned while working with this engine. To help you get the most out of this powerful piece of technology, Mastering Unreal Engine begins with simple game ideas and playable projects that you can complete at your own pace. The book starts by covering the foundations of using Unreal Engine to build a simple game level. You will also learn how to add such details to the game as actors, animation, and effects. Mastering Unreal Engine talks at length about the various features of the Unreal Engine game engine, how to install it and how to construct a project in C++, and good coding practices for game development. Furthermore, the book also covers certain niche areas, such as how to utilize Visual Studio in gaming, and how to use existing predefined blueprints to grow and foster a game. More importantly, Mastering Unreal Engine is perhaps one of the first beginner-level books in its league that covers topics related to the Behavior Tree and Blackboard with Artificial Intelligence and multiplayer gameplay in Unreal Engine. Note: This book assumes you have a working knowledge of C++ programming. Learn more about our other Mastering titles at: <https://www.routledge.com/Mastering-Computer-Science/book-series/MCS>

Learn the tools and techniques of game design using a project-based approach with Unreal Engine 4 and C++ Key FeaturesKickstart your career or dive into a new hobby by exploring game design with UE4 and C++Learn the techniques needed to prototype and develop your own ideasReinforce your skills with project-based learning by building a series of games from scratchBook Description Game development can be both a creatively fulfilling hobby and a full-time career path. It's also an exciting way to improve your C++ skills and apply them in engaging and challenging projects. Game Development Projects with Unreal Engine starts with the basic skills you'll need to get started as a game developer. The fundamentals of game design will be explained clearly and demonstrated practically with realistic exercises. You'll then apply what you've learned with challenging activities. The book starts with an introduction to the Unreal Editor and key concepts such as actors, blueprints, animations, inheritance, and player input. You'll then move on to the first of three projects: building a dodgeball game. In this project, you'll explore line traces, collisions, projectiles, user interface, and sound effects, combining these concepts to showcase your new skills. You'll then move on to the second project; a side-scroller game, where you'll implement concepts including animation blending, enemy AI, spawning objects, and collectibles. The final project is an FPS game, where you will cover the key concepts behind creating a multiplayer environment. By the end of this Unreal Engine 4 game development book, you'll have the confidence and knowledge to get started on your own creative UE4 projects and bring your ideas to life. What you will learnCreate a fully-functional third-person character and enemiesBuild navigation with keyboard, mouse, gamepad, and touch controlsProgram logic and game mechanics with collision and particle effectsExplore AI for games with Blackboards and Behavior TreesBuild character animations with Animation Blueprints and MontagesTest your game for mobile devices using mobile previewAdd polish to your game with visual and sound effectsMaster the fundamentals of game UI design using a heads-up displayWho this book is for This book is suitable for anyone who wants to get started using UE4 for game development. It will also be useful for anyone who has used Unreal Engine before and wants to consolidate, improve and apply their skills. To grasp the concepts explained in this book better, you must have prior knowledge of the basics of C++ and understand variables, functions, classes, polymorphism, and pointers. For full compatibility with the IDE used in this book, a Windows system is recommended.

Blueprints Visual Scripting for Unreal Engine

Unreal Engine 4 Game Development in 24 Hours, Sams Teach Yourself

Create Professional VR Apps Without Coding

Unreal Engine C++ the Ultimate Developer's Handbook

Beginning Unreal Game Development

Unreal Engine 4 Game Development Quick Start Guide

Get hands-on with game development tools and techniques to build game project using the latest version of Unreal Engine and C++, two of the most widely used tools in the games industry Key Features

Kickstart your career or develop a new hobby by learning game development with Unreal Engine 5 and C++ Learn techniques to prototype and develop your own ideas with key images printed in color Reinforce

your skills with project-based learning by building a series of games from scratch Book Description Immerse yourself in the Unreal game projects with this book, written by four highly experienced industry

professionals with many years of combined experience with Unreal Engine. Elevating Game Experiences with Unreal Engine 5 will walk you through the latest version of Unreal Engine by helping you get hands-

on with the game creation projects. The book starts with an introduction to the Unreal Editor and key concepts such as actors, blueprints, animations, inheritance, and player input. You'll then move on to

the first of three projects, building a dodgeball game, where you'll learn the concepts of line traces, collisions, projectiles, user interface, and sound effects. You'll also discover how to combine

these concepts to showcase your new skills. The second project, a side-scroller game, will help you implement concepts such as animation blending, enemy AI, spawning objects, and collectibles. And

finally, you'll cover the key concepts in creating a multiplayer environment as you work on the third project, an FPS game. By the end of this Unreal Engine book, you'll have a broad understanding of how

to use the tools that the game engine provides to start building your own games. What you will learn Create a fully functional third-person character and enemies Implement navigation with keyboard, mouse,

and gamepad Program logic and game mechanics with collision and particle effects Explore AI for games with Blackboards and behavior trees Build character animations with animation blueprints and montages

Polish your game with stunning visual and sound effects Explore the fundamentals of game UI using a heads-up display Discover how to implement multiplayer in your games Who this book is for This book is

for game developers looking to get started with using Unreal Engine 5 for their game development projects. Anyone who has used Unreal Engine before and wants to consolidate, improve, and apply their

skills will find this book useful. To better grasp the concepts explained in this book, prior knowledge of C++ basics such as variables, functions, classes, polymorphism, and pointers is required. For

full compatibility with the IDE used in this book, a Windows system is recommended.

The three-volume set LNCS 9913, LNCS 9914, and LNCS 9915 comprises the refereed proceedings of the Workshops that took place in conjunction with the 14th European Conference on Computer Vision, ECCV 2016,

held in Amsterdam, The Netherlands, in October 2016. The three-volume set LNCS 9913, LNCS 9914, and LNCS 9915 comprises the refereed proceedings of the Workshops that took place in conjunction with the

14th European Conference on Computer Vision, ECCV 2016, held in Amsterdam, The Netherlands, in October 2016. 27 workshops from 44 workshops proposals were selected for inclusion in the proceedings. These

address the following themes: Datasets and Performance Analysis in Early Vision; Visual Analysis of Sketches; Biological and Artificial Vision; Brave New Ideas for Motion Representations; Joint ImageNet

and MS COCO Visual Recognition Challenge: Geometry Meets Deep Learning; Action and Anticipation for Visual Learning; Computer Vision for Road Scene Understanding and Autonomous Driving; Challenge on

Automatic Personality Analysis; Biomechanics Computing; Benchmarking Multi-Target Tracking; MOTChallenge; Assistive Computer Vision and Robotics; Transferring and Adapting Source Knowledge in Computer Vision;

Recovering 6D Object Pose; Robust Reading; 3D Face Alignment in the Wild and Challenge; Egocentric Perception, Interaction and Computing; Local Features: State of the Art, Open Problems and Performance

Evaluation; Crowd Understanding; Video Segmentation; The Visual Object Tracking Challenge Workshop; Web-scale Vision and Social Media; Computer Vision for Audio-visual Media; Computer VISION for ART

Analysis; Virtual/Augmented Reality for Visual Artificial Intelligence; Joint Workshop on Storytelling with Images and Videos and Large Scale Movie Description and Understanding Challenge.

This book serves as an introduction to the level design process in Unreal Engine 4. By working with a number of different components within the Unreal Editor, readers will learn to create levels using

BSPs, create custom materials, create custom Blueprints complete with events, import objects, create particle effects, create sound effects and combine them to create a complete playable game level. The

book is designed to work step by step at the beginning of each chapter, then allow the reader to complete similar tasks on their own to show an understanding of the content. A companion website with

project files and additional information is included.

In this new and improved third edition of the highly popular Game Engine Architecture, Jason Gregory draws on his nearly two decades of experience at Midway, Electronic Arts and Naughty Dog to present

both the theory and practice of game engine software development. In this book, the broad range of technologies and techniques used by AAA game studios are each explained in detail, and their roles within

a real industrial-strength game engine are illustrated. New to the Third Edition This third edition offers the same comprehensive coverage of game engine architecture provided by previous editions, along

with updated coverage of: computer and CPU hardware and memory caches, compiler optimizations, C++ language standardization, the IEEE-754 floating-point representation, 2D user interfaces, plus an

entirely new chapter on hardware parallelism and concurrent programming. This book is intended to serve as an introductory text, but it also offers the experienced game programmer a useful perspective on

aspects of game development technology with which they may not have deep experience. As always, copious references and citations are provided in this edition, making it an excellent jumping off point for

those who wish to dig deeper into any particular aspect of the game development process. Key Features Covers both the theory and practice of game engine software development Examples are grounded in

specific technologies, but discussion extends beyond any particular engine or API. Includes all mathematical background needed. Comprehensive text for beginners and also has content for senior engineers.

Mastering Unreal Technology

Mastering Unreal Technology, Volume II

Over 70 recipes for mastering post-processing effects and advanced shading techniques

An Introduction to Unreal Engine 4

The faster way to build games using UE4 Blueprints

Publisher's note: This edition from 2019 is based on Unreal Engine 4 and does not make use of the most recent Unreal Engine features. A new third edition, updated for Unreal Engine 5 blueprints including new topics, such as implementing procedural generation and creating a product configurator, has now been published. Key FeaturesDesign a fully functional game in UE4 without writing a single line of codeImplement visual scripting to develop gameplay mechanics, UI, visual effects, VR and artificial intelligenceDeploy your game on multiple platforms and share it with the worldBook Description

Blueprints is the visual scripting system in Unreal Engine that enables programmers to create baseline systems and can be extended by designers. This book helps you explore all the features of the Blueprint Editor and guides you through using Variables, Macros, and Functions. You'll also learn about object-oriented programming (OOP) and discover the Gameplay Framework. In addition to this, you'll learn how Blueprint Communication allows one Blueprint to access information from another Blueprint. Later chapters will focus on building a fully functional game using a step-by-step approach. You'll start with a basic first-person shooter (FPS) template, and each chapter will build on the prototype to create an increasingly complex and robust game experience. You'll then progress from creating basic

shooting mechanics to more complex systems, such as user interface elements and intelligent enemy behavior. The skills you will develop using Blueprints can also be employed in other gaming genres. In the concluding chapters, the book demonstrates how to use arrays, maps, enums, and vector operations. Finally, you'll learn how to build a basic VR game. By the end of this book, you'll have learned how to build a fully functional game and will have the skills required to develop an entertaining experience for your audience. What you will learnUnderstand programming concepts in BlueprintsCreate prototypes and iterate new game mechanics rapidlyBuild user interface elements and interactive menusUse advanced Blueprint nodes to manage the complexity of a gameExplore all the features of the Blueprint editor, such as the Components tab, Viewport, and Event GraphGet to grips with object-oriented programming (OOP) concepts and explore the Gameplay FrameworkLearn Virtual Reality development with UE BlueprintWho

this book is for anyone who is interested in developing games or applications with UE4. Although basic knowledge of Windows OS is required, experience in programming or UE4 is not necessary.

Prepare for Unreal Engine 5! Learn the fundamentals of the C++ programming language as well as Unreal Engine's code base for creating and packaging a complete hack and slash action game. Implement combat, AI and Behavior Trees, animation, gameplay mechanics, interfaces and delegates, collision and physics, ray casting, game saving, menu and HUD creation via UMG, and much more.

Mastering Unreal Technology, Volume II: Advanced Level Design Concepts with Unreal Engine 3 is your start-to-finish guide to state-of-the-art Unreal Tournament 3 modding and level design. Here's everything you need to know to take your game design skills to the next level, creating content with breakthrough depth and interactivity! Your authors aren't just the world's #1 Unreal game development trainers: They've built the training mods that shipped with Unreal Tournament. Now, working with the full cooperation of Unreal Engine 3's creators, Epic Games, they introduce innovative, pro-quality techniques you'll find nowhere else: outstanding solutions for everything from particle effects to physics, materials to cinematics. Packed with tips, hands-on tutorials, and expert insight, Mastering Unreal Technology, Volume II will help you take Unreal Tournament 3 and Unreal Engine 3 to the limit...and then blow right by it! You'll find expert tips on Creating advanced materials that leverage the full power of UnrealEd's Material Editor Bringing levels to life with objects affected by gravity, collisions, and player influence Creating fire, smoke, sparks, and more with Unreal Engine 3's particle effects system Building custom user interfaces, including Heads-Up Displays (HUDs) that update constantly Using SoundCues to mix, modulate, crossfade, and attenuate sounds Generating real-time camera-based effects, including depth of field, motion blur, and color adjustment Using post process effects to quickly transform a scene's look and feel without changing existing materials or textures Animating characters and vehicles that move with unprecedented realism Creating in-game cinematics that develop your characters and move your story forward

Master the basics of Unreal Engine 4 to build stunning video games About This Book Get to grips with the user interface of Unreal Engine 4 and find out more about its various robust features Create dream video games with the help of the different tools Unreal Engine 4 offers Create video-games and fully utilize the power of Unreal Engine 4 to bring games to life through this step-by-step guide Who This Book Is For If you have a basic understanding of working on a 3D environment and you are interested in video game development, then this book is for you. A solid knowledge of C++ will come in handy. What You Will Learn Download both the binary and source version of Unreal Engine 4 and get familiar with the UI Get to know more about the Material Editor and how it works Add a post process to the scene and alter it to get a unique look for your scene Acquaint yourself with the unique and exclusive feature of Unreal Engine 4-Blueprints Find out more about Static and Dynamic lighting and the difference between various lights Use Matinee to create cut scenes Create a health bar for the player with the use of Unreal Motion Graphics (UMG) Get familiar with Cascade Particle Editor In Detail Unreal Engine 4 is a complete suite of game development tools that gives you power to develop your game and seamlessly deploy it to iOS and Android devices. It can be used for the development of simple 2D games or even stunning high-end visuals. Unreal Engine features a high degree of portability and is a tool used by many game developers today. This book will introduce you to the most popular game development tool called Unreal Engine 4 with hands-on instructions for building stunning video games. You will begin by creating a new project or prototype by learning the essentials of Unreal Engine by getting familiar with the UI and Content Browser. Next, we'll import a sample asset from Autodesk 3ds max and learn more about Material Editor. After that we will learn more about Post Process. From there we will continue to learn more about Blueprints, Lights, UMG, C++ and more. Style and approach This step-by-step guide will help you gain practical knowledge about Unreal Engine through detailed descriptions of all the tools offered by Unreal Engine.

Unreal Engine 4.x Scripting with C++ Cookbook

Unreal Engine 4 for Beginners

Using C++: From Beginner to Pro

Mastering Unreal Technology: Introduction to UnrealScript with Unreal Engine 3

Unreal Game Development

Advanced Level Design Concepts with Unreal Engine 3

Get started creating video games using Unreal Engine 4 (UE4) and learning the fundamentals of game development. Through hands-on, step-by-step tutorials, you will learn to design engaging environments and a build solid foundation for more complex games. Discover how to utilize the 3D game design software behind the development of immensely popular games for PC, console, and mobile. Beginning Unreal Game Development steers you through the fundamentals of game development with UE4 to design environments that both engage the player and are aesthetically pleasing. Author David Nixon shows you how to script logic, define behaviors, store data, and create characters. You will learn to create user interfaces, such as menus, load screens, and head-up displays (HUDs), and manipulate audio to add music, sound effects, and dialogue to your game. The book covers level editors, actor types, blueprints, character creation and control, and much more. Throughout the book, you'll put theory into practice and create an actual game using a series of step-by-step tutorials. With a clear, step-by-step approach, Beginning Unreal Game Development builds up your knowledge of Unreal Engine 4 so you can start creating and deploying your own 3D video games in no time. What You Will Learn Learn the fundamentals of game design Understand how to use Unreal Engine 4 Design amazing levels for your characters to play in Script logic to control the behavior of the world you create Who This Book Is For This book is for beginners with no prior game design or programming experience. It is also intended for video game enthusiasts who are brand-new to the world of game development and want to learn how to design a game from scratch using UE4.

Mastering Unreal Technology, Volume I: Introduction to Level Design with Unreal Engine 3 is your start-to-finish guide to modding and level design with the world's hottest new gaming engine: Unreal Engine 3. Here's everything you need to know to jumpstart your skills and create stunning new content and games for consoles and PCs alike! Your authors aren't just the world's #1 Unreal game development trainers: They've even built the training modules that shipped with Unreal Tournament 3: Limited Collector's Edition. Now, working with the full cooperation of Unreal Engine 3's creators, Epic Games, they introduce every facet of game development—from simple level creation to materials, lighting, and terrain...even advanced level optimization and streaming! Packed with tips, hands-on tutorials, and expert techniques, Mastering Unreal Technology, Volume I is all you need to create levels that look spectacular and work brilliantly...levels that gamers just can't stop playing! You'll find expert tips on Understanding the game development process from start to finish Planning projects for greater efficiency, faster delivery, and better quality Crafting worlds with stunning beauty and clarity Bringing amazing realism to characters, objects, and props Making the most of Unreal Engine 3's massively upgraded lighting system Scripting complex gameplay quickly and easily with Unreal Kismet Building animated game assets with Unreal Matinee Testing game performance during live gameplay Optimizing levels by improving the interaction between lights and surfaces Using advanced level streaming to create vast, rich, highly playable levels Winner of the Front Line Award for best game development book of 2009!

Apply the techniques needed to build VR applications for mobile and standalone head-mounted displays (HMDs) using the Unreal Engine. This book covers the entire VR ecosystem including production tools, Unreal engine, workflows, performance and optimization, and presents two fully-developed projects to reinforce what you've learned. Media designers, CG artists and other creatives will be able to take advantage of real-time engine techniques and easy-to-learn visual scripting logic to turn their creations into immersive and interactive VR worlds. Gear VR, the Oculus Go and other Android based VR HMDs are becoming exciting new platforms for immersive business presentations, entertainment and educational solutions. The Unreal engine, one of the world's most powerful and popular game engines, is now free to use and has become increasingly popular for real-time visualizations and enterprise solutions in recent years. With Unreal's powerful blueprint visual scripting system, non-coders can now design blueprints in Unreal, unlock the power of rapid prototyping, and create complex interactions without a line of code. Get your copy of Unreal for Mobile and Standalone VR today and begin using this powerful tool-set to create high-end VR apps for a wide range of applications from games, B2B, to education. What You'll Learn Explore the VR ecosystem, including history, recent trends and future outlook Review tool set, graphics and animation pipeline (Blender, Zbrush, Substance Painter and others) Examine graphics optimization techniques Set up a project and the target platform Design interaction with Unreal blueprints Deployments, testing, further optimization Who This Book Is For Multimedia designers, CG artists, producers, app developers. No coding experience is required.

Game Audio Implementation offers a unique practical approach to learning all about game audio. If you've always wanted to hear your sound or music in a real game then this is the book for you. Each chapter is accompanied by its own game level where you can see the techniques and theories in action before working through over 70 exercises to develop your own demo level. Taking you all the way from first principles to complex interactive systems in the industry standard Unreal Engine® you'll gain the skills to implement your sound and music along with a deep transferable knowledge of the principles you can apply across a range of other game development tools. The accompanying website (www.gameaudioimplementation.com) includes: 12 downloadable demonstration games A unique exercise level for you to develop for your portfolio An up-to-date online bibliography with further reading for each chapter A free sound library with hundreds of game SFX

Unreal for Mobile and Standalone VR

Develop quality game components and solve scripting problems with the power of C++ and UE4, 2nd Edition

Beginning Unreal Engine 4 Blueprints Visual Scripting

Unreal Engine Game Development Cookbook

Unreal Engine 4 AI Programming Essentials

Computer Vision - ECCV 2016 Workshops

Mastering Unreal Technology, Volume III: Introduction to UnrealScript with Unreal Engine 3 helps game developers take full advantage of UnrealScript to build powerful new games, and shows modders how to use UnrealScript to extend existing games in ways their creators never imagined. The only start-to-finish UnrealScript tutorial, it's authored by the world's leading Unreal Engine game development trainers, in close collaboration with Epic Games, the creator of Unreal Engine. The authors teach through real-world examples and sample code, not oversimplified theoretical exercises. Their start-to-finish coverage includes: " Understanding what UnrealScript can do in new games, and how it can be used to mod existing games " Working with UnrealScript classes, variables, operators, expressions, functions, control statements, and loops " Making the most of the UnrealScript preprocessor " Working with advanced UnrealScript features, including iterators, states, delegates, interfaces, and replication " Applying object-oriented techniques in the UnrealScript environment For professional game designers, independent modders, and students seeking a route into the game development industry, Mastering Unreal Technology, Volume III: Introduction to UnrealScript with Unreal Engine 3 will be simply indispensable.