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Developing Virtual Reality Applications Oct 05 2020 Virtual Reality systems enable organizations to cut costs and time, maintain financial and organizational control over the development process, digitally evaluate products before having them created, and allow for greater creative exploration. In this book, VR developers Alan Craig, William Sherman, and Jeffrey Will examine a comprehensive collection of current,unique, and foundational VR applications in a multitude of fields, such as business, science, medicine, art, entertainment, and public safety among others. An insider's view of what works, what doesn't work, and why, Developing Virtual Reality Applications explores core technical information and background theory as well as the evolution of key applications from their genesis to their most current form. Developmental techniques are cross-referenced between different applications linking information to describe overall VR trends and fundamental best practices. This synergy, coupled with the most up to date research being conducted, provides a hands-on guide for building applications, and an enhanced, panoramic view of VR development. Developing Virtual Reality Applications is an indispensable one-stop reference for anyone working in this burgeoning field. Dozens of detailed application descriptions provide practical ideas for VR development in ALL areas of interest! Development techniques are cross referenced between different application areas, providing fundamental best practices!

Immersive Office 365 Nov 25 2019 Bring mixed reality into your office workplace by building immersive experiences using data and content from your Office 365 platform. Imagine being able to sit at your desk and surround yourself with a 3D chart showing your work relationships as mined from your relationships with others based on how you collaborate together. This book shows you how to access your Office 365 data using the Microsoft Graph API, and then helps you present that data in a 3D modeling visualization using the Microsoft HoloLens 2 as a mixed reality device. This book covers the growing number of tools and techniques you can use to access and visualize data on a Microsoft HoloLens 2 device. Foremost is the Graph API, giving access to the full range of data in Office 365. Also covered are Unity and Visual Studio, the development environments from which you can create mixed reality applications for Microsoft HoloLens 2. You will learn how to load data from and save data to your Office 365 platform based on several interesting use cases. You will be able to extend your digital workplace into a 3D space powered by Microsoft HoloLens 2. Whether you know Office 365 and want to move toward mixed reality, or whether you know the Microsoft HoloLens 2 and want to build functionality around Office 365 data, this book helps you step up and accomplish your goal of bridging between mixed reality and Office 365. What You Will Learn Create immersive experiences using Microsoft HoloLens 2 and Office 365 Access Office 365 data programmatically using the Microsoft Graph API Control your immersive experiences using natural gestures and eye tracking Understand and correctly use different visualization models Implement design patterns to write better code in Unity Know how to access services using web requests via DLLs Who This Book Is For Developers who want to expand their knowledge of the Office 365 platform into the world of mixed reality by creating immersive experiences and 3D visualizations using the Microsoft HoloLens 2 and similar devices, and mixed reality developers who want to extend their repertoire toward serving everyday business needs of workers in corporate office environments

Virtual Reality Blueprints Sep 15 2021 Join the virtual reality revolution by creating immersive 3D games and applications with Cardboard VR, Gear VR, OculusVR, and HTC Vive Key Features Develop robust, immersive VR experiences that are easy on the eye. Code 3D games and applications using Unity 3D game engine. Learn the basic principles of virtual reality applications Book Description Are you new to virtual reality? Do you want to create exciting interactive VR applications? There's no need to be daunted by the thought of creating interactive VR applications, it's much easier than you think with this hands-on, project-based guide that will take you through VR development essentials for desktop and mobile-based games and applications. Explore the three top platforms--Cardboard VR, Gear VR, and OculusVR --to design immersive experiences from scratch. You'll start by understanding the science-fiction roots of virtual reality and then build your first VR experience using Cardboard VR. You'll then delve into user interactions in virtual space for the Google Cardboard then move on to creating a virtual gallery with Gear VR. Then you will learn all about virtual movements, state machines, and spawning while you shoot zombies in the Oculus Rift headset. Next, you'll construct a Carnival Midway, complete with two common games to entertain players. Along the way, you will explore the best practices for VR development, review game design tips, discuss methods for combating motion sickness and identify alternate uses for VR applications What you will learn Use Unity assets to create object simulation. Implement simple touch controls in your application. Apply artificial intelligence to achieve player and character interaction. Add scripts for movement, tracking, grasping, and spawning. Create animated walkthroughs, use 360-degree media, and build engaging VR experiences. Deploy your games on multiple VR platforms. Who this book is for If you are a game developer and a VR enthusiast now looking to get stuck into the VR app development process by creating VR apps for different platforms, then this is the book for you. Familiarity with the Unity game engine and the C# language is key to getting the most from this book.

Cognitive and Affective Perspectives on Immersive Technology in Education Aug 03 2020 Immersive technology as an umbrella concept consists of multiple emerging technologies including augmented reality (AR), virtual reality (VR), gaming, simulation, and 3D printing. Research has shown immersive technology provides unique learning opportunities for experiential learning, multiple perspectives, and knowledge transfer. Due to its role in influencing learners' cognitive and affective processes, it is shown to have great potential in changing the educational landscape in the decades to come. However, there is a lack of general cognitive and affective theoretical framework to guide the diverse aspects of immersive technology research. In fact, lacking the cognitive and affective theoretical framework has begun to hamper the design and application of immersive technology in schools and related professional training. Cognitive and Affective Perspectives on Immersive Technology in Education is an essential research book that explores methods and implications for the design and implementation of upcoming immersive technologies in pedagogical and professional development settings. The book includes case studies that highlight the cognitive and affective processes in immersive technology as well as the successful applications of immersive technology in education. Featuring a wide range of topics such as curriculum design, K-12 education, and mobile learning, this book is ideal for academicians, educators, policymakers, curriculum developers, instructional designers, administrators, researchers, and students.

Designing Immersive 3D Experiences May 31 2020 Designing Immersive 3D Experiences can help any visual designer move into the fast-growing fields of 3D and extended reality (XR) design. Leading designer Ren e Stevens (Powered by Design) introduces a proven approach and an effective design thinking process you can use to create outstanding, immersive user experiences. Stevens guides you through creating your first XR project - and improving every project after that. Drawing on her experience building a major university's first course in Augmented Reality, she prepares visual designers to succeed with 3D and XR design in environments from mobile and web to wearables. Stevens begins by exploring what XR and 3D immersive design are, how they're evolving, and how you may already be using them. Next, she explores core concepts and technologies, from computer-human interaction to projection mapping and head-mounted displays. Then, you'll walk through projects from start to finish, learning how to: Perform upfront ideation for new XR/3D projects: set "why" goals, balance innovation with practicality, and keep it all human Build seamless and approachable user experiences and interfaces Prototype XR experiences Account for perception and other human factors Augment typography, color, audio, and voice Take your next steps with XR design, and more

Being Really Virtual Jan 26 2020 This book focuses on the recent developments of virtual reality (VR) and immersive technologies, what effect they are having on our modern, digitised society and explores how current developments and advancements in this field are leading to a virtual revolution. Using Ivan

Sutherland's 'The Ultimate Display' and Moore's law as a springboard, the author discusses both popular scientific and technological accounts of the past, present and possible futures of VR, looking at current research trends, developments, challenges and ethical considerations to the coming age of differing realities. Being Really Virtual is for researchers, designers and developers of VR and immersive technologies and anyone with an interest in the exponential rise of such technologies and how they are changing the very way we perceive, interact and communicate within our digital society.

Unity 2020 Virtual Reality Projects Nov 29 2022 Explore the latest features of Unity and build VR experiences including first-person interactions, audio fireball games, 360-degree media, art gallery tours, and VR storytelling Key FeaturesDiscover step-by-step instructions and best practices to begin your VR development journeyExplore Unity features such as URP rendering, XR Interaction Toolkit, and ProBuilderBuild impressive VR-based apps and games that can be experienced using modern devices like Oculus Rift and Oculus QuestBook Description This third edition of the Unity Virtual Reality (VR) development guide is updated to cover the latest features of Unity 2019.4 or later versions - the leading platform for building VR games, applications, and immersive experiences for contemporary VR devices. Enhanced with more focus on growing components, such as Universal Render Pipeline (URP), extended reality (XR) plugins, the XR Interaction Toolkit package, and the latest VR devices, this edition will help you to get up to date with the current state of VR. With its practical and project-based approach, this book covers the specifics of virtual reality development in Unity. You'll learn how to build VR apps that can be experienced with modern devices from Oculus, VIVE, and others. This virtual reality book presents lighting and rendering strategies to help you build cutting-edge graphics, and explains URP and rendering concepts that will enable you to achieve realism for your apps. You'll build real-world VR experiences using world space user interface canvases, locomotion and teleportation, 360-degree media, and timeline animation, as well as learn about important VR development concepts, best practices, and performance optimization and user experience strategies. By the end of this Unity book, you'll be fully equipped to use Unity to develop rich, interactive virtual reality experiences. What you will learnUnderstand the current state of virtual reality and VR consumer productsGet started with Unity by building a simple diorama scene using Unity Editor and imported assetsConfigure your Unity VR projects to run on VR platforms such as Oculus, SteamVR, and Windows immersive MRDesign and build a VR storytelling animation with a soundtrack and timelinesImplement an audio fireball game using game physics and particle systemsUse various software patterns to design Unity events and interactable componentsDiscover best practices for lighting, rendering, and post-processingWho this book is for Whether you're a non-programmer unfamiliar with 3D computer graphics or experienced in both but new to virtual reality, if you're interested in building your own VR games or applications, this Unity book is for you. Any experience in Unity will be useful but is not necessary.

*Virtual & Augmented Reality For Dummies Apr 30 2020 An easy-to-understand primer on Virtual Reality and Augmented Reality Virtual Reality (VR) and Augmented Reality (AR) are driving the next technological revolution. If you want to get in on the action, this book helps you understand what these technologies are, their history, how they're being used, and how they'll affect consumers both personally and professionally in the very near future. With VR and AR poised to become mainstream within the next few years, an accessible book to bring users up to speed on the subject is sorely needed—and that's where this handy reference comes in! Rather than focusing on a specific piece of hardware (HTC Vive, Oculus Rift, iOS ARKit) or software (Unity, Unreal Engine), Virtual & Augmented Reality For Dummies offers a broad look at both VR and AR, giving you a bird's eye view of what you can expect as they continue to take the world by storm. * Keeps you up-to-date on the pulse of this fast-changing technology * Explores the many ways AR/VR are being used in fields such as healthcare, education, and entertainment * Includes interviews with designers, developers, and technologists currently working in the fields of VR and AR Perfect for both potential content creators and content consumers, this book will change the way you approach and contribute to these emerging technologies.*

Unreal Engine 4 Virtual Reality Projects Nov 17 2021 Learn to design and build Virtual Reality experiences, applications, and games in Unreal Engine 4 through a series of practical, hands-on projects that teach you to create controllable avatars, user interfaces, and more. Key Features Learn about effective VR design and develop virtual reality games and applications for every VR platform Build essential features for VR such as player locomotion and interaction, 3D user interfaces, and 360 media players Learn about multiplayer networking and how to extend the engine using plugins and asset packs Book Description Unreal Engine 4 (UE4) is a powerful tool for developing VR games and applications. With its visual scripting language, Blueprint, and built-in support for all major VR headsets, it's a perfect tool for designers, artists, and engineers to realize their visions in VR. This book will guide you step-by-step through a series of projects that teach essential concepts and techniques for VR development in UE4. You will begin by learning how to think about (and design for) VR and then proceed to set up a development environment. A series of practical projects follows, taking you through essential VR concepts. Through these exercises, you'll learn how to set up UE4 projects that run effectively in VR, how to build player locomotion schemes, and how to use hand controllers to interact with the world. You'll then move on to create user interfaces in 3D space, use the editor's VR mode to build environments directly in VR, and profile/optimize worlds you've built. Finally, you'll explore more advanced topics, such as displaying stereo media in VR, networking in Unreal, and using plugins to extend the engine. Throughout, this book focuses on creating a deeper understanding of why the relevant tools and techniques work as they do, so you can use the techniques and concepts learned here as a springboard for further learning and exploration in VR. What you will learn Understand design principles and concepts for building VR applications Set up your development environment with Unreal Blueprints and C++ Create a player character with several locomotion schemes Evaluate and solve performance problems in VR to maintain high frame rates Display mono and stereo videos in VR Extend Unreal Engine's capabilities using various plugins Who this book is for This book is for anyone interested in learning to develop Virtual Reality games and applications using UE4. Developers new to UE4 will benefit from hands-on projects that guide readers through clearly-explained steps, while both new and experienced developers will learn crucial principles and techniques for VR development in UE4.

Immersive Technologies to Accelerate Innovation Jul 26 2022 The digital transformation of companies is both a competitive challenge and a complex step for large groups and industries, and at the same time a tremendous opportunity. This transformation is entering a new dimension with the development of immersive technologies such as virtual reality, mixed reality and augmented reality, which are revolutionizing the way we generate content as well as visualize and interact with models and data. The challenges of innovation and digital transformation within companies are now converging. Research shows the potential that immersive technologies have to accelerate the first steps of the innovation process. The objective of this book is to provide a clear vision of the state of research on immersive technologies for design and to deliver practical recommendations for companies wishing to improve their innovation process.

The Re-Emergence of Virtual Reality Aug 15 2021 In this short book, Evans interrogates the implications of VR's re-emergence into the media mainstream, critiquing the notion of a VR revolution by analysing the development and ownership of VR companies while also exploring the possibilities of immersion in VR and the importance of immersion in the interest and ownership of VR enterprises. He assesses how the ideologies and desires of both computer programmers and major Silicon Valley industries may influence how VR worlds are conceived and experienced by users while also exploring the mechanisms that create the immersive experience that underpins interest in the medium.

Learning Virtual Reality Dec 31 2022 As virtual reality approaches mainstream consumer use, a vibrant development ecosystem has emerged in the past few years. This hands-on guide takes you through VR development essentials for desktop, mobile, and browser-based applications. You'll explore the three go-to platforms—OculusVR, Gear VR, and Cardboard VR—as well as several VR development environments, programming tools, and techniques. If you're an experienced programmer familiar with mobile development, this book will help you gain a working knowledge of VR development through clear and simple examples. Once you create a complete application in the final chapter, you'll have a jumpstart on the next major entertainment medium. Learn VR basics for UI design, 3D graphics, and stereo rendering Explore Unity3D, the current development choice among game engines Create native applications for desktop computers with the Oculus Rift Develop mobile applications for Samsung's Gear VR with the Android and Oculus Mobile SDKs Build browser-based applications with the WebVR Javascript API and WebGL Create simple and affordable mobile apps for any smartphone with Google's Cardboard VR Bring everything together to build a 360-degree panoramic photo viewer

Cases on Immersive Virtual Reality Techniques Dec 19 2021 As virtual reality approaches mainstream consumer use, new research and innovations in the field have impacted how we view and can use this technology across a wide range of industries. Advancements in this technology have led to recent breakthroughs in sound, perception, and visual processing that take virtual reality to new dimensions. As such, research is needed to support the adoption of these new methods and applications. Cases on Immersive Virtual Reality Techniques is an essential reference source that discusses new applications of virtual reality and how they can be integrated with immersive techniques and computer resources. Featuring research on topics such as 3D modeling, cognitive load, and motion cueing, this book is ideally designed for educators, academicians, researchers, and students seeking coverage on the applications of collaborative virtual environments.

VR Developer Gems Feb 06 2021 This book takes the practicality of other "Gems" series such as "Graphics Gems" and "Game Programming Gems" and

provide a quick reference for novice and expert programmers alike to swiftly track down a solution to a task needed for their VR project. Reading the book from cover to cover is not the expected use case, but being familiar with the territory from the Introduction and then jumping to the needed explanations is how the book will mostly be used. Each chapter (other than Introduction) will contain between 5 to 10 "tips", each of which is a self-contained explanation with implementation detail generally demonstrated as pseudo code, or in cases where it makes sense, actual code. Key Features Sections written by veteran virtual reality researchers and developers Usable code snipits that readers can put to immediate use in their own projects. Tips of value both to readers entering the field as well as those looking for solutions that expand their repertoire.

Immersion Into Virtual Reality Dec 07 2020 What Is Immersion Into Virtual Reality Virtual reality (VR) gives users the impression that they are physically present in a setting that does not exist in the real world. The user of the virtual reality system is immersed in visuals, sounds, and other stimuli that together form an immersive whole environment, which is responsible for the creation of the perception. How You Will Benefit (I) Insights, and validations about the following topics: Chapter 1: Immersion (virtual reality) Chapter 2: Multimedia Chapter 3: Virtual reality Chapter 4: Augmented reality Chapter 5: Mixed reality Chapter 6: Head-mounted display Chapter 7: Metaverse Chapter 8: Virtual reality therapy Chapter 9: 360-degree video Chapter 10: Projection augmented model Chapter 11: Astronaut training Chapter 12: Oculus Rift Chapter 13: zSpace (company) Chapter 14: Windows Mixed Reality Chapter 15: Virtual reality headset Chapter 16: VR positional tracking Chapter 17: Virtual reality in primary education Chapter 18: Virtual reality game Chapter 19: Virtual reality applications Chapter 20: Immersive learning Chapter 21: Cinematic virtual reality (II) Answering the public top questions about immersion into virtual reality. (III) Real world examples for the usage of immersion into virtual reality in many fields. (IV) 17 appendices to explain, briefly, 266 emerging technologies in each industry to have 360-degree full understanding of immersion into virtual reality' technologies. Who This Book Is For Professionals, undergraduate and graduate students, enthusiasts, hobbyists, and those who want to go beyond basic knowledge or information for any kind of immersion into virtual reality.

Augmented and Mixed Reality for Communities Apr 22 2022 Using mixed and augmented reality in communities is an emerging media practice that is reshaping how we interact with our cities and neighbors. From the politics of city hall to crosswalks and playgrounds, mixed and augmented reality will offer a diverse range of new ways to interact with our communities. In 2016, apps for augmented reality politics began to appear in app stores. Similarly, the blockbuster success of Pokémon Go illustrated how even forgotten street corners can become a magical space for play. In 2019, a court case in Milwaukee, Wisconsin, extended first amendment rights to augmented reality. For all the good that these emerging media provide, there will and have been consequences. Augmented and Mixed Reality for Communities will help students and practitioners navigate the ethical design and development of these kinds of experiences to transform their cities. As one of the first books of its kind, each chapter in the book prepares readers to contribute to the Augmented City. By providing insight into how these emerging media work, the book seeks to democratize the augmented and mixed reality space. Authors within this volume represent some of the leading scholars and practitioners working in the augmented and mixed reality space for civic media, cultural heritage, civic games, ethical design, and social justice. Readers will find practical insights for the design and development to create their own compelling experiences. Teachers will find that the text provides in-depth, critical analyses for thought-provoking classroom discussions.

Getting Started with React VR Aug 27 2022 Create amazing 360 and virtual reality content that runs directly in your browsers with JavaScript and React VR 2.0 About This Book A practical guide to developing virtual reality experiences targeting web and mobile browsers Create customized 3D graphics for your virtual reality experiences with Three.js Explore the ReactVR library to create objects that seem real and see how they move in the Virtual world Import free models into VR and include those in your code Who This Book Is For This book is for web developers who want to use their existing skill set of HTML, CSS, and JavaScript to create virtual reality experiences. What You Will Learn Use Blender 2.79 to make virtual reality objects for Web VR. Import free models into VR and how to include those in your code Build a Virtual Museum with interactive art pieces Create your first VR App and customizing it Build animations by procedurally changing an object's position, using timers and Animated APIs Incorporate React Native code and JavaScript code in your VR world In Detail This book takes you on a journey to create intuitive and interactive Virtual Reality experiences by creating your first VR application using React VR 2.0.0. It starts by getting you up to speed with Virtual Reality (VR) and React VR components. It teaches you what Virtual Reality (VR) really is, why it works, how to describe 3D objects, the installation of Node.js (version 9.2.0) and WebVR browser. You will learn 3D polygon modeling, texturing, animating virtual objects and adding sound to your VR world. You will also discover ways to extend React VR with new features and native Three.js. You will learn how to include existing high-performance web code into your VR app. This book will also take you through upgrading and publishing your app. By the end of this book, you'll have a deep knowledge of Virtual Reality and a full-fledged working VR app to add to your profile! Style and approach A step-by-step practical guide to help readers build their first VR application.

Immersive Technology in Smart Cities Nov 05 2020 This book presents recent trends and enhancements in the convergence of immersive technology and smart cities. The authors discuss various domains such as medical education, construction, brain interface, interactive storytelling, edification, and journalism in relation to combining smart cities, IoT and immersive technologies. The book sets up a medium to promulgate insights and in depth understanding among experts in immersive technologies, IoT, HCI and associated establishments. The book also includes case studies, survey, models, algorithms, frameworks and implementations in storytelling, smart museum, medical education, journalism and more. Various practitioners, academicians and researchers in the domain contribute to the book.

Augmented Reality, Virtual Reality, and Computer Graphics Dec 27 2019 This book constitutes the refereed proceedings of the 8th International Conference on Augmented Reality, Virtual Reality, and Computer Graphics, AVR 2021, held in Italy, in September 2021. Due to COVID-19 pandemic the conference was held virtually. The 38 full and 14 short papers were carefully reviewed and selected from 69 submissions. The papers discuss key issues, approaches, ideas, open problems, innovative applications and trends in virtual reality, augmented reality, mixed reality, applications in cultural heritage, in medicine, in education, and in industry.

Cinematic Virtual Reality Mar 10 2021 With reference to traditional film theory and frameworks drawn from fields such as screenwriting studies and anthropology, this book explores the challenges and opportunities for both practitioners and viewers offered by the 360-degree storytelling form. It focuses on cinematic virtual reality (CVR), a format that involves immersive, high quality, live action or computer-generated imagery (CGI) that can be viewed through head mounted display (HMD) goggles or via online platforms such as YouTube. This format has surged in popularity in recent years due to the release of affordable high quality omnidirectional (360-degree) cameras and consumer grade HMDs. The book interrogates four key concepts for this emerging medium: immersion, presence, embodiment and proximity through an analysis of innovative case studies and with reference to practitioner interviews. In doing so, it highlights the specificity of the format and provides a critical account of practitioner approaches to the concept development, writing and realisation of short narrative CVR works. The book concludes with an account of the author's practice-led research into the form, providing a valuable example of creative practice in the field of immersive media.

Reality Check Oct 17 2021 Discover THE next big competitive advantage in business: learn how augmented and virtual reality can put your business ahead. Augmented reality (AR) and virtual reality (VR) are part of a new wave of immersive technologies that offer huge opportunities for businesses, across industries and regardless of their size. Most people think of AR or VR as a new development in video gaming like Pokémon GO, or an expensive marketing campaign by the Nikes of the world. The truth is, businesses of any size can put these new technologies to immediate use in areas that include: - Learning and development - Remote collaboration and assistance - Visualization of remote assets and environments - Sales and marketing - Consumer behaviour research Reality Check dispels the common misconceptions of AR and VR, such as them being too expensive or not easily scalable, and details how business leaders can integrate them into their business to deliver more efficient, impactful and cost-effective business solutions. The up and coming voice of AR and VR for businesses, Jeremy Dalton, uses case studies from organizations all over the world including Cisco, Ford, GlaxoSmithKline, La Liga and Vodafone to showcase the practical uses of immersive technologies. Reality Check makes cutting-edge technology accessible and grounds them into the everyday workings of normal businesses. It is your one-stop non-technical guide to incredibly exciting new technologies that will deliver results.

Unreal Engine Virtual Reality Quick Start Guide Oct 29 2022 Unreal Engine VR Quick Start Guide introduces designers to the guidelines and design processes necessary to build interactive VR experiences. Learn to use User Experience design techniques and Blueprint programming to create virtual reality gameplay for HTC Vive, Oculus Rift, PSVR, and Windows Mixed Reality headsets.

Creating Augmented and Virtual Realities Sep 03 2020 Despite popular forays into augmented and virtual reality in recent years, spatial computing still sits on the cusp of mainstream use. Developers, artists, and designers looking to enter this field today have few places to turn for expert guidance. In this book, Erin Pangilinan, Steve Lukas, and Vasanth Mohan examine the AR and VR development pipeline and provide hands-on practice to help you hone your skills. Through step-by-step tutorials, you'll learn how to build practical applications and experiences grounded in theory and backed by industry use cases. In each

section of the book, industry specialists, including Timoni West, Victor Prisacariu, and Nicolas Meuleau, join the authors to explain the technology behind spatial computing. In three parts, this book covers: Art and design: Explore spatial computing and design interactions, human-centered interaction and sensory design, and content creation tools for digital art Technical development: Examine differences between ARKit, ARCore, and spatial mapping-based systems; learn approaches to cross-platform development on head-mounted displays Use cases: Learn how data and machine learning visualization and AI work in spatial computing, training, sports, health, and other enterprise applications

Media Innovations AR and VR Aug 22 2019 Augmented and virtual reality are media innovations with specific characteristics. They create immersion in the user, as the user is immersed in the medium and its 360° environment. To successfully develop content and applications for AR and VR, psychological effects, the specifics of the 360° environment, the story, and the way the media is used must be aligned with the needs and experiences of the user. Content producers face novel challenges in content development, method selection, teamwork, and the overall production process of AR and VR experiences. The book introduces readers to the characteristics of immersive media and provides scientific evidence and practical tips to help them produce high-quality, user-centric content for immersive media. The scientifically derived success factors in the form of checklists are a guide and an ideal basis for standardizing the production process and further developing one's own projects. This book is a translation of the original German 1st edition Medieninnovationen AR und VR by Elle Langer, published by Springer-Verlag GmbH Germany, part of Springer Nature in 2020. The translation was done with the help of artificial intelligence (machine translation by the service DeepL.com). A subsequent human revision was done primarily in terms of content, so that the book will read stylistically differently from a conventional translation. Springer Nature works continuously to further the development of tools for the production of books and on the related technologies to support the authors.

Defying Reality Jun 12 2021 A fascinating exploration of the history, development, and future of virtual reality, a technology with world-changing potential, written by award-winning journalist and author David Ewalt, stemming from his 2015 Forbes cover story about the Oculus Rift and its creator Palmer Luckey. You've heard about virtual reality, seen the new gadgets, and read about how VR will be the next big thing. But you probably haven't yet realized the extent to which this technology will change the way we live. We used to be bound to a physical reality, but new immersive computer simulations allow us to escape our homes and bodies. Suddenly anyone can see what it's like to stand on the peak of Mount Everest. A person who can't walk can experience a marathon from the perspective of an Olympic champion. And why stop there? Become a dragon and fly through the universe. But it's not only about spectacle. Virtual and augmented reality will impact nearly every aspect of our lives—commerce, medicine, politics—the applications are infinite. It may sound like science fiction, but this vision of the future drives billions of dollars in business and is a top priority for such companies as Facebook, Google, and Sony. Yet little is known about the history of these technologies. In Defying Reality, David M. Ewalt traces the story from ancient amphitheaters to Cold War military laboratories, through decades of hype and failure, to a nineteen-year-old video game aficionado who made the impossible possible. Ewalt looks at how businesses are already using this tech to revolutionize the world around us, and what we can expect in the future. Writing for a mainstream audience as well as for technology enthusiasts, Ewalt offers a unique perspective on VR. With firsthand accounts and on-the-ground reporting, Defying Reality shows how virtual reality will change our work, our play, and the way we relate to one another.

Unity Virtual Reality Projects Jul 02 2020 Explore the world of Virtual Reality by building immersive and fun VR projects using Unity 3D About This Book Learn the basic principles of virtual reality applications and get to know how they differ from games and desktop apps Build various types of VR experiences, including diorama, first-person characters, riding on rails, 360 degree projections, and social VR A project-based guide that teaches you to use Unity to develop VR applications, which can be experienced with devices such as the Oculus Rift or Google Cardboard Who This Book Is For If you're a non-programmer unfamiliar with 3D computer graphics, or experienced in both but new to virtual reality, and are interested in building your own VR games or applications then this book is for you. Any experience in Unity is an advantage. What You Will Learn Create 3D scenes with Unity and Blender while learning about world space and scale Build and run VR applications for consumer headsets including Oculus Rift and Google Cardboard Build interactive environments with physics, gravity, animations, and lighting using the Unity engine Experiment with various user interface (UI) techniques that you can use in your VR applications Implement the first-person and third-person experiences that use only head motion gestures for input Create animated walkthroughs, use 360-degree media, and build multi-user social VR experiences Learn about the technology and psychology of VR including rendering, performance and VR motion sickness Gain introductory and advanced experience in Unity programming with the C# language In Detail What is consumer "virtual reality"? Wearing a head-mounted display you view stereoscopic 3D scenes. You can look around by moving your head, and walk around using hand controls or motion sensors. You are engaged in a fully immersive experience. On the other hand, Unity is a powerful game development engine that provides a rich set of features such as visual lighting, materials, physics, audio, special effects, and animation for creating 2D and 3D games. Unity 5 has become the leading platform for building virtual reality games, applications and experiences for this new generation of consumer VR devices. Using a practical and project-based approach, this book will educate you about the specifics of virtual reality development in Unity. You will learn how to use Unity to develop VR applications which can be experienced with devices such as the Oculus Rift or Google Cardboard. We will then learn how to engage with virtual worlds from a third person and first person character point of view. Furthermore, you will explore the technical considerations especially important and possibly unique to VR. The projects in the book will demonstrate how to build a variety of VR experiences. You will be diving into the Unity 3D game engine via the interactive Unity Editor as well as C-Sharp programming. By the end of the book, you will be equipped to develop rich, interactive virtual reality experiences using Unity. So, let's get to it! Style and approach This book takes a practical, project-based approach to teach specifics of virtual reality development in Unity. Using a reader-friendly approach, this book will not only provide detailed step-by-step instructions but also discuss the broader context and applications covered within.

Unity Virtual Reality Projects Jul 14 2021 Explore the world of Virtual Reality by building immersive and fun VR projects using Unity 3DAbout This Book• Learn the basic principles of virtual reality applications and get to know how they differ from games and desktop apps• Build various types of VR experiences, including diorama, first-person characters, riding on rails, 360 degree projections, and social VR• A project-based guide that teaches you to use Unity to develop VR applications, which can be experienced with devices such as the Oculus Rift or Google CardboardWho This Book Is ForIf you're a non-programmer unfamiliar with 3D computer graphics, or experienced in both but new to virtual reality, and are interested in building your own VR games or applications then this book is for you. Any experience in Unity is an advantage.What You Will Learn• Create 3D scenes with Unity and Blender while learning about world space and scale• Build and run VR applications for consumer headsets including Oculus Rift and Google Cardboard• Build interactive environments with physics, gravity, animations, and lighting using the Unity engine• Experiment with various user interface (UI) techniques that you can use in your VR applications• Implement the first-person and third-person experiences that use only head motion gestures for input• Create animated walkthroughs, use 360-degree media, and build multi-user social VR experiences• Learn about the technology and psychology of VR including rendering, performance and VR motion sickness• Gain introductory and advanced experience in Unity programming with the C# languageIn DetailWhat is consumer "virtual reality"? Wearing a head-mounted display you view stereoscopic 3D scenes. You can look around by moving your head, and walk around using hand controls or motion sensors. You are engaged in a fully immersive experience. On the other hand, Unity is a powerful game development engine that provides a rich set of features such as visual lighting, materials, physics, audio, special effects, and animation for creating 2D and 3D games. Unity 5 has become the leading platform for building virtual reality games, applications and experiences for this new generation of consumer VR devices.Using a practical and project-based approach, this book will educate you about the specifics of virtual reality development in Unity.You will learn how to use Unity to develop VR applications which can be experienced with devices such as the Oculus Rift or Google Cardboard. We will then learn how to engage with virtual worlds from a third person and first person character point of view. Furthermore, you will explore the technical considerations especially important and possibly unique to VR. The projects in the book will demonstrate how to build a variety of VR experiences. You will be diving into the Unity 3D game engine via the interactive Unity Editor as well as C-Sharp programming.By the end of the book, you will be equipped to develop rich, interactive virtual reality experiences using Unity.So, let's get to it!Style and approachThis book takes a practical, project-based approach to teach specifics of virtual reality development in Unity. Using a reader-friendly approach, this book will not only provide detailed step-by-step instructions but also discuss the broader context and applications covered within.

Virtual Reality with VRTK4 Sep 23 2019 Virtual reality is quickly becoming the next medium to communicate your ideas. Once siloed in make-believe world of science fiction, virtual reality can now touch any aspect of your life. This book shows you how to create original virtual reality content using the Unity game engine and the Virtual Reality Tool Kit. By the end of the book you'll be creating your own virtual reality experience using the fundamental building blocks within. You'll start by reviewing spatial computing, an emerging field that encompasses self-driving cars to space exploration. You'll also create your own virtual reality environments for use on headsets such as those from Oculus and HTC. Using the Unity3D game engine and the Virtual Reality Toolkit on a computer or laptop, you will walk through the fundamentals of virtual reality with as little code as possible. That is the beauty of Unity and the Virtual Reality

Toolkit. You will discover how to use buttons in a virtual space, gaze-tracking for user input, and physics for enabling interaction between a human and a virtual space. From game design to education to healthcare to human resources, virtual reality offers new and creative ways to engage users, students, patients, customers, and more. Not a coding book, Virtual Reality with VRTK4 shows that you don't need to be a computer or graphics whiz to begin creating your own virtual reality experiences. What You'll Learn Grasp Virtual Reality Toolkit and its interaction with Unity3DExplore the fundamental science of virtual realityReview the inner workings of Unity3D and its integration with VRTKUnderstand the big picture of C# coding in Unity3DIncorporate head and hand movement into virtual experiences Who This Book Is For Creative professionals or students who are familiar with computer design programs and want to begin prototyping their own original virtual reality work as quickly as possible.

Implementing Augmented Reality Into Immersive Virtual Learning Environments Jun 24 2022 The potential to integrate augmented reality into educational settings has led to the development of myriad programs for implementing these transformative technologies into education. However, the transformative learning processes possible for learners can best be developed through integration in immersive virtual learning environments. The integration of augmented reality (AR) technologies into education involves matching the potential of AR with the most effective instructional model for immersing learners in the learning process. With current research focused heavily on blended or online learning, augmented reality fits right into the new technologies and trends that are being developed and utilized on a consistent basis. There is a need for research that provides detailed curriculum guides, templates for designing virtual worlds, evaluation processes, and immersive learning procedures that can be utilized to provide the best educational environment for student success. Implementing Augmented Reality Into Immersive Virtual Learning Environments provides current research for the integration of transformative new technologies into multiple educational settings. Examining the why, what, and how of integrating augmented reality into immersive virtual learning technologies, this book covers various educational settings, such as nursing education, sports coaching, language education, and more. While highlighting the benefits for virtual reality, its role in remote learning, the logistics of simulation, and branches of it such as gamification, this book is ideally intended for teachers, school administrators, teacher educators, practitioners, IT specialists, educational software developers, researchers, academicians, and students interested in integrating augmented reality in educational programs.

Making Virtual Reality a Reality Oct 24 2019 Walks readers through the key components of developing library-led research and programming that leverages emerging technologies with the goal of engaging students and faculty. As educational curricula and research evolve to include advanced technologies, libraries must offer programming with these emerging technologies in mind, including the use of virtual reality (VR) and augmented reality (AR). Valk, Mi, and Schick present readers with tools for assessing their level of organizational readiness to begin such programs and, more importantly, how to sustain them with limited budgets, expertise, and resources. Building on their own experiences, the authors teach readers how to develop technology-rich classes, assess student projects, and overcome technical hurdles. They spotlight this kind of programming as integral to building strategic partnerships in an educational environment. Readers will learn how to adapt and design programs or initiatives in which the necessary technologies are rapidly changing, not only in higher education institutions, but also in K-12 schools. Worksheets and resources assist readers in reflecting on their own work and developing educational programming to suit their organizational needs. Teaches readers to develop courses and programs including immersive technologies Identifies free and low-cost resources Helps instructors evaluate devices Helps develop library-led research

Virtual Reality Jan 08 2021 A comprehensive overview of developments in augmented reality, virtual reality, and mixed reality—and how they could affect every part of our lives. After years of hype, extended reality—augmented reality (AR), virtual reality (VR), and mixed reality (MR)—has entered the mainstream. Commercially available, relatively inexpensive VR headsets transport wearers to other realities—fantasy worlds, faraway countries, sporting events—in ways that even the most ultra-high-definition screen cannot. AR glasses receive data in visual and auditory forms that are more useful than any laptop or smartphone can deliver. Immersive MR environments blend physical and virtual reality to create a new reality. In this volume in the MIT Press Essential Knowledge series, technology writer Samuel Greengard offers an accessible overview of developments in extended reality, explaining the technology, considering the social and psychological ramifications, and discussing possible future directions. Greengard describes the history and technological development of augmented and virtual realities, including the latest research in the field, and surveys the various shapes and forms of VR, AR, and MR, including head-mounted displays, mobile systems, and goggles. He examines the way these technologies are shaping and reshaping some professions and industries, and explores how extended reality affects psychology, morality, law, and social constructs. It's not a question of whether extended reality will become a standard part of our world, he argues, but how, when, and where these technologies will take hold. Will extended reality help create a better world? Will it benefit society as a whole? Or will it merely provide financial windfalls for a select few? Greengard's account equips us to ask the right questions about a transformative technology.

AR and VR Using the WebXR API Feb 18 2022 Gain an in-depth knowledge in immersive web development to create augmented reality (AR) and virtual reality (VR) applications inside web browsers using WebXR API, WebGL, Three.js, and A-Frame. This project-based book will provide the practice and portfolio content to make the most of what the futures of spatial computing and immersive technology have to offer. Beginning with technical analysis of how web browsers function, the book covers programming languages such as WebGL, JavaScript, and HTML, with an eye on a complete understanding of the WebXR lifecycle. You'll then explore how contemporary web browsers work at the code level and see how to set up a local development server and use it with the Visual Studio Code IDE to create 3D animation in the WebGL programming language. With a familiarity of the web-rendering pipeline in place, you'll venture on to WebGL abstractions such as the Three.js JavaScript library and Mozilla's A-Frame XR Framework, which use WebXR to create high-end visual effects. In the final projects of the book, you'll create an augmented reality web session for an Android phone device, and create a VR scene in A-Frame (built on Three.js) to demo essential components of the WebXR API pertaining to user positioning and interaction. Game engines have become common-place for the creation of mixed reality content. However, developers not interested in learning entirely new workflows may be better suited to work within a medium almost universally open to all—the web; AR and VR Using the WebXR API will show you the way. What You'll Learn Master the creation of virtual reality and augmented reality features for web page Prepare to work as an immersive web developer with a portfolio of projects in sought-after technologies Review the fundamentals of writing shaders in WebGL Experience the unity between client, server, and cloud architecture as it applies to location-based AR Who This Book Is For Aspiring immersive web developers and developers already familiar with the fundamentals of web development who want to further explore topics such as spatial computing, computer vision, spatial anchors, and cloud-computing for multi-user social experiences.

Immersive Learning Jan 20 2022 Most people want to reach their maximum potential; and the use of tools are no different. Some say power is influence. If this is true, then virtual reality has "superpowers" because of its ability to make the unreal viscerally real, engaging and immersive. Thanks to these powers VR can influence and affect education in ways that no technology tool has in the past. This book will help people understand the power and true potential of virtual reality (or VR). The prime directive of this book is to provide educators with a way of thinking about how to use virtual reality in education in order to reveal its true superpowers. And, to arm educators with several hands-on lessons to get them started on implementing VR as a tool to enhance learning outcomes. Ultimately, the book aims to have educators clearly understand VR's role in transforming education, thus reaching its maximum potential.

The Immersive Classroom Mar 29 2020 Discover the possibilities of immersive technology to deepen student engagement; activate learning through hunts, breakouts and labs; and explore global collaboration. Our classrooms are full of individuals who learn in diverse ways, and educators need creative teaching approaches to enrich learning for struggling students. When applied effectively, immersive technology in teaching can target students' interests, provide flexibility for a range of skill levels and empower students' choice in their learning. The Immersive Classroom highlights the possibilities of immersive technology to make a greater impact and reach all student populations. The book: • Provides step-by step instructions for how to mix individual tools to create an ecosystem of immersive technology. • Offers examples from leading educators who have implemented the tools and techniques discussed, giving readers easy-to-implement takeaways they can incorporate in their classrooms right away. • Includes interactive content, with more than 30 images that can be scanned in order to experience AR/VR tools for yourself! • Contains a robust index of more than 100 AR/VR tools along with device specifi cs and requirements. With this book, readers gain insights into customizing tools through app hacking and app smashing, and discover how pushing the use of augmented reality (AR) and virtual reality (VR) tools beyond their intended purpose can maximize their benefits, helping meet the needs of all students.

Augmented Reality for Developers May 12 2021 Build exciting AR applications on mobile and wearable devices with Unity 3D, Vuforia, ARToolKit, Microsoft Mixed Reality HoloLens, Apple ARKit, and Google ARCore About This Book Create unique AR applications from scratch, from beginning to end, with step-by-step tutorials Use Unity 3D to efficiently create AR apps for Android, iOS, and Windows platforms Use Vuforia, ARTookKit, Windows Mixed Reality, and Apple ARKit to build AR projects for a variety of markets Learn best practices in AR user experience, software design patterns, and 3D graphics Who This Book Is For The ideal target audience for this book is developers who have some experience in mobile development, either Android or iOS. Some broad web development

experience would also be beneficial. What You Will Learn Build Augmented Reality applications through a step-by-step, tutorial-style project approach Use the Unity 3D game engine with the Vuforia AR platform, open source ARToolKit, Microsoft's Mixed Reality Toolkit, Apple ARKit, and Google ARCore, via the C# programming language Implement practical demo applications of AR including education, games, business marketing, and industrial training Employ a variety of AR recognition modes, including target images, markers, objects, and spatial mapping Target a variety of AR devices including phones, tablets, and wearable smartglasses, for Android, iOS, and Windows HoloLens Develop expertise with Unity 3D graphics, UIs, physics, and event systems Explore and utilize AR best practices and software design patterns In Detail Augmented Reality brings with it a set of challenges that are unseen and unheard of for traditional web and mobile developers. This book is your gateway to Augmented Reality development—not a theoretical showpiece for your bookshelf, but a handbook you will keep by your desk while coding and architecting your first AR app and for years to come. The book opens with an introduction to Augmented Reality, including markets, technologies, and development tools. You will begin by setting up your development machine for Android, iOS, and Windows development, learning the basics of using Unity and the Vuforia AR platform as well as the open source ARToolKit and Microsoft Mixed Reality Toolkit. You will also receive an introduction to Apple's ARKit and Google's ARCore! You will then focus on building AR applications, exploring a variety of recognition targeting methods. You will go through multiple complete projects illustrating key market sectors including business marketing, education, industrial training, and gaming. By the end of the book, you will have gained the necessary knowledge to make quality content appropriate for a range of AR devices, platforms, and intended uses. Style and approach This book adopts a practical, step-by-step, tutorial-style approach. The design principles and methodology will be explained by creating different modules of the AR app.

Human 4.0 Apr 10 2021 Information technology is becoming ingrained in our everyday life. The consequence of this is that the line between humans and technology is more and more blurred, and tends to transform the human being into a cyber-organism. This transformation, accompanied by the emergence of Industry 4.0, brings us to define a new term: Human 4.0. This new generation of individuals has to deal with smart interconnected pervasive environments supported by the internet of things. Nevertheless, this merge between humans and technology is not straight-forward and requires an additional effort to reduce the gap between the human being and the machine. Such research implies a multidisciplinary approach to the interaction between biological organisms and artificial artefacts. This book intends to provide the reader with an insight into the new relationship with the technology brought about by Industry 4.0, and how it can make the human-machine interaction more efficient.

Unity® Virtual Reality Development with VRTK4 Mar 22 2022 Get hands-on practical knowledge of concepts and techniques for VR development using Unity® and VRTK version 4. This book is a step-by-step guide to learning VRTK 4 for developing immersive VR experiences.Unity is a powerful game engine for developing VR experiences. With its built-in support for all major VR headsets, it's the perfect tool for developers to realize their vision in VR. VRTK is a battle-tested VR solution for Unity; VRTK 4, in conjunction with Unity, has changed the dynamics of VR development.This book focuses on creating deep understanding of how advanced VR mechanics and techniques are built and utilized as a part of a VR framework. You will start off by setting up your devices for VR development and learn about the advantages of using VRTK 4 over alternate SDKs. You will learn to setup your very own custom VRTK Rig, find out how to setup various advanced VR mechanics and locomotion techniques, how to create several spatial UI objects, and how to setup Unity 2D UI controls. You will also cover advanced topics such as using angular and linear drives, setting up a VR Simulator to work with a XBox Controller, and realistic physics VR hands. By the end of this book, you will know how to create advanced VR mechanics that can be used within any VR experience, game, or App and deployed across several platforms and hardware. What You Will Learn Understand how to develop Immersive VR experiences Create a VR simulator to test your project Generate advanced Spatial UI that you can interact with physically using your hands Who This Book Is For?Unity game developers conversant with Unity's Editor. Basic knowledge of how Unity Prefabs function, how events work in general, and programming logic would be beneficial.

Extended Reality in Practice May 24 2022 EXTENDED REALITY IN PRACTICE As one of the leading business trends today, extended reality (XR) promises to revolutionize the way consumers experience their encounters with brands and products of all kinds. Top brands from Pepsi and Uber to Boeing and the U.S. Army are creating immersive digital experiences that capture the interest and imaginations of their target markets. In Extended Reality in Practice: 100+ Amazing Ways Virtual, Augmented and Mixed Reality are Changing Business and Society, celebrated futurist, technologist, speaker, and author Bernard Marr delivers a robust and accessible explanation of how all kinds of firms are developing innovative XR solutions to business problems. You'll discover the new ways that companies are harnessing virtual, augmented, and mixed reality to improve consumers' perception of their brands. You'll also find out why there are likely to be no industries that will remain untouched by the use of XR, and why these technologies are popular across the commercial, governmental, and non-profit spectrums. Perfect for Chief Executive Officers, business owners, leaders, managers, and professionals working in business development, Extended Reality in Practice will also earn a place in the libraries of professionals working within innovation teams seeking an accessible resource on the possibilities and potential created by augmented, virtual, and mixed reality technologies. An insightful exploration of extended reality from a renowned thought leader, technologist, and futurist Extended Reality in Practice: 100+ Amazing Ways Virtual, Augmented and Mixed Reality are Changing Business and Society offers readers a front-row seat to one of the most exciting and impactful business trends to find traction in years. Celebrated futurist and author Bernard Marr walks you through the ins and outs of XR, or extended reality, and how it promises to revolutionize everything from the experience of walking through an airport or shopping mall to grabbing a burger at a fast-food restaurant. Discover insightful and illuminating case studies from businesses and organizations in a variety of industries, including Burger King, BMW, Boeing, and the U.S. Army, and see how they're turning virtual, mixed, and augmented reality experiences into big wins for their stakeholders. You'll also find out about how XR can help businesses tackle the problems of lackluster engagement and lukewarm customer loyalty with reinvigorated consumer experiences. Ideal for executives, founders, business leaders and owners, and professionals of all sorts, Extended Reality in Practice is an indispensable guide to an indispensable new technology. The book is the leading resource for anyone seeking a one-stop reference for augmented, virtual, and mixed reality tech and their limitless potential for enterprise.

Storytelling for Virtual Reality Feb 27 2020 Storytelling for Virtual Reality serves as a bridge between students of new media and professionals working between the emerging world of VR technology and the art form of classical storytelling. Rather than examining purely the technical, the text focuses on the narrative and how stories can best be structured, created, and then told in virtual immersive spaces. Author John Bucher examines the timeless principles of storytelling and how they are being applied, transformed, and transcended in Virtual Reality. Interviews, conversations, and case studies with both pioneers and innovators in VR storytelling are featured, including industry leaders at LucasFilm, 20th Century Fox, Oculus, Insomniac Games, and Google. For more information about story, Virtual Reality, this book, and its author, please visit StorytellingforVR.com

Complete Virtual Reality and Augmented Reality Development with Unity Sep 27 2022 Get close and comfortable with Unity and build applications that run on HoloLens, Daydream, and Oculus Rift Key Features Build fun augmented reality applications using ARKit, ARCore, and Vuforia Explore virtual reality by developing more than 10 engaging projects Learn how to integrate AR and VR concepts together in a single application Book Description Unity is the leading platform to develop mixed reality experiences because it provides a great pipeline for working with 3D assets. Using a practical and project-based approach, this Learning Path educates you about the specifics of AR and VR development using Unity 2018 and Unity 3D. You'll learn to integrate, animate, and overlay 3D objects on your camera feed, before moving on to implement sensor-based AR applications. You'll explore various concepts by creating an AR application using Vuforia for both macOS and Windows for Android and iOS devices. Next, you'll learn how to develop VR applications that can be experienced with devices, such as Oculus and Vive. You'll also explore various tools for VR development: gaze-based versus hand controller input, world space UI canvases, locomotion and teleportation, timeline animation, and multiplayer networking. You'll learn the Unity 3D game engine via the interactive Unity Editor and C# programming. By the end of this Learning Path, you'll be fully equipped to develop rich, interactive mixed reality experiences using Unity. This Learning Path includes content from the following Packt products: Unity Virtual Reality Projects - Second Edition by Jonathan Linowes Unity 2018 Augmented Reality Projects by Jesse Glover What you will learn Create 3D scenes to learn about world space and scale Move around your scenes using locomotion and teleportation Create filters or overlays that work with facial recognition software Interact with virtual objects using eye gaze, hand controllers, and user input events Design and build a VR storytelling animation with a soundtrack and timelines Create social VR experiences with Unity networking Who this book is for If you are a game developer familiar with 3D computer graphics and interested in building your own AR and VR games or applications, then this Learning Path is for you. Any prior experience in Unity and C# will be an advantage. In all, this course teaches you the tools and techniques to develop engaging mixed reality applications.