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Learning Web-based Virtual Reality Getting Started with React VR Building Virtual Reality with Unity and Steam Vr *Unreal Engine 4 Virtual Reality Projects Building Virtual Reality with Unity and Steam VR* **Unity Virtual Reality Projects Unity 2020 Virtual Reality Projects** *Learning Virtual Reality* **Virtual Reality Blueprints Augmented Reality for Developers Unreal Engine Virtual Reality Quick Start Guide Creating Augmented and Virtual Realities** Creating Augmented and Virtual Realities **Unity Virtual Reality Projects Mastering Oculus Rift Development A Hitchhiker's Guide to Virtual Reality The Virtual Reality Construction Kit Make** *Virtual and Augmented Reality (VR/AR)* **Virtual Reality Complete Virtual Reality and Augmented Reality Development with Unity Cardboard VR Projects for Android** *Getting Started with React VR* Virtual Reality Marketing *Virtual Reality Creations Google Daydream VR Cookbook* **Multimedia and Virtual Reality Engineering** *Unity Virtual Reality Projects Unity 2018 By Example* **Unity Virtual Reality Projects Augmented Reality Game Development** Make: Volume 52 **Virtual Reality** *The Immersive Classroom* **Journalism in the Age of Virtual Reality Enterprise Augmented Reality Projects** *The History of the Future* Innovating with Augmented Reality *Virtual Reality 1.0 – The 90's* **Communication in the Age of Virtual Reality**

virtually real a wave of new technology has rekindled the dream of virtual reality but what can you really do with it we take a look at how makers are embracing vr to build digital worlds and real life interfaces with them and show you how too meet the engineers at nasa that are making rovers and rockets in mixed reality discover some of the gear you ll need to get started with vr visit the makers at valve who brought the htc vive headset to life and see how it went from prototype to product then build a tactile rig for your vr pinball arcade create holograms with your cellphone and learn how to take 360 degree photos and videos to view in vr plus more than 20 projects including build a raspberry pi powered photo booth that sends photos to your friends and to the cloud make a diy monster detector for kids to scout out scary closets and attics learn the basics for creating propane powered fire art with an excerpt from our new book make fire and much more explore the latest features of unity 2018 to create immersive vr projects for oculus rift htc vive daydream and gear vr about this book a project based guide to teach you how to develop immersive and fun vr applications using unity 3d build experiences with interactable objects physics ui animations c scripting and other unity features explore the world of vr by building experiences such as diorama first person characters 360 degree projections social vr audio fireball game and vr storytelling 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 other 3d tools while learning about world space and scale build and run vr applications for specific headsets including oculus vive and daydream interact with virtual objects using eye gaze hand controllers and user input events move around your vr scenes using locomotion and teleportation implement an audio fireball game using physics and particle systems implement an art gallery tour with teleportation and data info design and build a vr storytelling animation with a soundtrack and timelines create social vr experiences with unity networking in detail unity has become the leading platform for building virtual reality games applications and experiences for this new generation of consumer vr devices unity virtual reality projects walks you through a series of hands on tutorials and in depth discussions on using the unity game engine with its practical and project based approach this book will get you up to speed with the specifics of virtual reality development in unity you will learn how to use unity to develop vr applications that can be experienced with devices such as oculus daydream and vive among the many topics and projects you will explore gaze based versus hand controller input world space ui canvases locomotion and teleportation software design patterns 360 degree media timeline animation and multiplayer networking you will learn the unity 3d game engine via the interactive unity editor as well as c programming by the end of the book you will be fully equipped to develop rich interactive virtual reality experiences using unity style and approach a practical step by step guide to building this volume addresses virtual reality vr a tantalizing communication medium whose essence challenges our most deeply held notions of what communication is or can be the editors have gathered an expert team of engineers social scientists and cultural theorists for the first extensive treatment of human communication in this exciting medium the first part introduces the reader to vr s state of the art as well as future trends in the next section leading research scientists discuss how knowledge of communication can be used to build more effective and exciting communication applications of virtual reality looking ahead the authors explore pioneering approaches to vr narratives interpersonal communication the use of 3d sound and the building of vr entertainment complexes in the final section the authors zoom out to view the big picture the psychological social and cultural implications of virtual reality thought provoking discussions consider important communication issues such as how will virtual reality influence perception of reality what are the legal issues defining communication in virtual reality what kind of cultural trends will this technology encourage 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 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 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 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 build exciting 2d 3d games and virtual reality applications with the help of hands on examples key features create five different types of games from scratch with unity 2018 import custom content into unity from third party tools such as maya and blender learn to build npcs with artificial intelligent behavior book description unity is the most exciting and popular engine used for developing games with its 2018 release unity has become the primary source of both game development and virtual reality content in unity 2018 by example you ll learn how to use unity in order to make amazing games from popular genres from action shooters to mind bending puzzle games to adventure and virtual reality vr games even if you have no previous experience of using unity this book will help you understand the toolsets it provides in depth in addition to this you ll understand how to create time critical collection games twin stick space shooters platformers and action fest games with intelligent enemies finally you ll get to grips with creating vr games with the new toolsets introduced by unity to help you develop amazing vr experiences to make things easier you will be provided with step by step tutorials for making five great games in unity 2018 along with a detailed explanation of all the fundamental concepts by the end of this book you ll have established a strong foundation in making games with unity 2018 what you will learn understand core unity concepts such as game objects components and scenes study level design techniques for building immersive and interesting worlds make functional games with c scripting use the toolset creatively to build games with different themes and styles handle player controls and input functionality work with terrains and world creation tools get to grips with making both 2d and 3d games who this book is for you don t need to have any previous experience with unity to enjoy unity 2018 by example although you need to have basic knowledge of c virtually real a wave of new technology has rekindled the dream of virtual reality but what can you really do with it we take a look at how makers are embracing vr to build digital worlds and real life interfaces with them and show you how too meet the engineers at nasa that are making rovers and rockets in mixed reality discover some of the gear you ll need to get started with vr visit the makers at valve who brought the htc vive headset to life and see how it went from prototype to product then build a tactile rig for your vr pinball arcade create holograms with your cellphone and learn how to take 360 degree photos and videos to view in vr plus more than 20 projects including build a raspberry pi powered photo booth that sends photos to your friends and to the cloud make a diy monster detector for kids to scout out scary closets and attics learn the basics for creating propane powered fire art with an excerpt from our new book make fire and much more with the advent of the internet and handheld or wearable media systems that plunge the user into 360o video augmented or virtual reality technology is changing how stories are told and created in this book john v pavlik argues that a new form of mediated communication has emerged experiential news experiential media delivers not just news stories but also news experiences in which the consumer engages news as a participant or virtual eyewitness in immersive multisensory and interactive narratives pavlik describes and analyzes new tools and approaches that allow journalists to tell stories that go beyond text and image he delves into developing forms such as virtual reality haptic technologies interactive documentaries and drone media presenting the principles of how to design and frame a story using these techniques pavlik warns that although experiential news can heighten user engagement and increase understanding it may also fuel the transformation of fake news into artificial realities and he discusses the standards of ethics and accuracy needed to build public trust in journalism in the age of virtual reality journalism in the age of virtual reality offers important lessons for practitioners seeking to produce quality experiential news and those interested in the ethical considerations that experiential media raise for journalism and the public annotation get an introduction to the technologies tools and techniques for programming virtual reality on the latest generation of desktop and mobile vr hardware with this hands on guide you ll learn essential development and production concepts including ui design stereo rendering 3d input and programming vr applications for native desktop mobile and the web you don t have to be a game development wizard or have 3d graphics experience to get started if you have basic programming skills and some familiarity with mobile development this book will help you gain a working knowledge of virtual reality through clear and simple examples 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 mobile and web based games a hitchhiker s guide to virtual reality brings together under one cover all the aspects of graphics video audio and haptics that have to work together to make virtual reality a reality like any good guide it reveals the practical things you need to know from the viewpoint of authors who have been there this two part guide covers the science technology and mathematics of virtual reality and then details its practical implementation the first part looks at how the interface between human senses and technology works to create virtual reality with a focus on vision the most important sense in virtual reality the second part of the book is tightly integrated with an accompanying cd which contains the programs for more than 30 virtual reality projects ranging in scope from a tool that simulates virtual sculpting to a suite of software for the control of a four projector immersive virtual environment 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 create amazing 360 and virtual reality content that runs directly in your browsers with javascript and react vr 2 0about 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 codewho this book is forthis 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 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 worldin detailthis 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 approacha step by step practical guide to help readers build their first vr application the complete up to date guide to building ar and vr games google s new arcore and daydream vr platforms enable you to deliver advanced augmented and virtual reality games and apps on a wide spectrum of modern android devices now for the first time there s a comprehensive deep dive into both arcore and daydream for every android developer and designer multi award winning ar vr developer sam keene takes a hands on approach leading you through all aspects of the arcore and daydream frameworks and sdks with step by step tutorials and advice for building pro quality ar vr games and apps keene presents his material as a cookbook of recipes to get you up and running with vr ar development as fast and as painlessly as possible the recipes in most chapters start by assembling the essential building blocks which are pieced together to create something larger you are then free to take these building blocks and turn them into your own creation keene also provides an extensive library of downloadable up to the minute arcore and daydream code to jumpstart your project in addition he takes you through crucial ux design principles and best practices learned from building large scale vr and ar apps at google google daydream vr cookbook shows you how to install and explore the google daydream development tools master basic and advanced daydream controller techniques implement intuitive vr user interfaces integrate audio video and realistic physics into your vr games install and explore the arcore sdk and development tools learn how to build ar apps that solve real user needs master ar game development using arcore optimize vr and ar game performance whether you are a software developer ux professional visual designer beginner or you come from a different design field this book is a great practical introduction to vr and ar develop mobile virtual reality apps using the native google cardboard sdk for android about this book learn how to build practical applications for google s popular diy vr headset build a reusable vr graphics engine on top of the cardboard java sdk and opengl es graphics libraries the projects in this book will showcase a different aspect of cardboard development from 3d rendering to handling user input who this book is for the book is for established android developers with a good knowledge level of java no prior opengl or graphics knowledge is required no prior experience with google cardboard is expected but those who are familiar with cardboard and are looking for projects to expand their knowledge can also benefit from this book what you will learn build google cardboard virtual reality applications explore the ins and outs of the cardboard sdk java classes and interfaces and apply them to practical vr projects employ android studio android sdk and the java language in a straightforward manner discover and use software development and android best practices for mobile and cardboard applications including considerations for memory management and battery life implement user interface techniques for menus and gaze based selection within vr utilize the science psychology mathematics and technology behind virtual reality especially those pertinent to mobile cardboard vr experiences understand cardboard vr best practices including those promoted by google design lab in detail google cardboard is a low cost entry level media platform through which you can experience virtual reality and virtual 3d environments its applications are as broad and varied as mobile smartphone applications themselves this book will educate you on the best practices and methodology needed to build effective stable and performant mobile vr applications in this book we begin by defining virtual reality vr and how google cardboard fits into the larger vr and android ecosystem we introduce the underlying scientific and technical principles behind vr including geometry optics rendering and mobile software architecture we start with a simple example app that ensures your environment is properly set up to write build and run the app then we develop a reusable vr graphics engine that you can build upon and from then on each chapter is a self contained project where you will build an example from a different genre of application including a 360 degree photo viewer an educational simulation of our solar system a 3d model viewer and a music visualizer given the recent updates that were rolled out at google i o 2016 the authors of cardboard vr projects for android have collated some technical notes to help you execute the projects in this book with google vr cardboard java sdk 0 8 released in may 2016 refer to the article at packtpub com sites default files downloads googlevrupdateguideforcardbook pdf which explains the updates to the source code of the projects style and approach this project based guide is written in a tutorial style project format where you will learn by doing it is accompanied by in depth explanations and discussions of various technologies and provides best practices and techniques the key problem with vr development is understanding how to set up a project and running it on your desktop or mobile vr device with this book you will not only learn the specifics of virtual reality development in unreal but also build immersive and fun vr projects that can be experienced on your vr devices this book takes a hands on approach to getting up and running with virtual reality using the unity game engine by utilizing the free steamvr 2 x libraries the book and its example code is compatible with the main virtual reality head mounted displays currently available the book also looks at some of the main issues surrounding virtual reality such as motion sickness and performance issues providing practical ways to reduce their impact to make better vr experiences key features discusses some of the key issues facing virtual reality and provides helpful tips for making better v r experiences practical examples geared to work with any headset compatible with steamvr including oculus rift htc vive and valve index uses the steamvr interaction system for interactions such as picking up and throwing objects operating user interfaces and capturing input events for your own scripts explore advanced spatialized audio with steam audio discover how to build user interfaces for virtual reality as well as discussing some best practices for v r based user interface design written by a games industry veteran with a proven track record having worked for ibm research in educational v r research projects and having made and launched v r experiences a complete guide to building cutting edge virtual reality projects here are 12 inexpensive virtual reality projects ranging from adapting a nintendo power glove to work on your pc to building 3 d goggles motion trackers 3 d sound systems biofeedback and more no programming or electronics experience required create your own augmented reality games from scratch with unity 5 about this book create your own augmented

reality game from scratch and join the virtual reality gaming revolution use the latest unity 5 vr sdk to create pro level ar games like pokemon go innovate and explore the latest and most promising trend of ar gaming in the mobile gaming industry who this book is for this book is for those who have a basic knowledge of game development techniques but no previous knowledge of unity is required some basic programming knowledge would be desirable but the book is an introduction to the topic the book is also suitable for experienced developers new to gis or gps development what you will learn build a location based augmented reality game called foodie go animate a player s avatar on a map use the mobile device s camera as a game background implement database persistence with sqllite4unity3d to carry inventory items across game sessions create basic ui elements for the game inventory menu and settings perform location and content searches against the google places api enhance the game s mood by adding visual shader effects extend the game by adding multiplayer networking and other enhancements in detail the heyday of location based augmented reality games is upon us they have been around for a few years but the release of pokemon go was a gamechanger that catalyzed the market and led to a massive surge in demand now is the time for novice and experienced developers alike to turn their good ideas into augmented reality ar mobile games and meet this demand if you are keen to develop virtual reality games with the latest unity 5 toolkit then this is the book for you the genre of location based ar games introduces a new platform and technical challenges but this book will help simplify those challenges and show how to maximize your game audience this book will take you on a journey through building a location based ar game that addresses the core technical concepts gis fundamentals mobile device gps mapping map textures in unity mobile device camera camera textures in unity accessing location based services and other useful unity tips the technical material also discusses what is necessary for further development to create a multiplayer version of the game at the end you will be presented with troubleshooting techniques in case you get into trouble and need a little help style and approach this book shows you how to create every step of the game and gives practical examples if you are interested in virtual reality want to learn how it works and want to create your own vr experiences this book is for you we walk you through a series of tutorials and in depth discussions using the unity game engine if a picture is worth a thousand words then virtual reality vr is priceless this book offers everything you need to know about the opportunities of vr for brands to better connect with consumers vr is booming by 2025 the industry is expected to become bigger than tv virtual reality marketing is a comprehensive exploration of all things vr providing readers with everything they need to know about the current vr landscape and the unprecedented opportunity it offers brands to create unique emotional connections with consumers a truly practical guide virtual reality marketing covers all aspects of the industry including interactive and passive vr 360 video social vr marketing and the role that influencers and bloggers are set to play in its development it also looks to the future exploring how vr is evolving and the changes it will undergo in the future packed with fascinating case studies tips and strategies and written by a recognized industry expert who has facilitated vr coverage for major international brands including facebook audi google and mercedes f1 this book is the leading resource for any reader looking to incorporate vr in their own marketing campaigns 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 explore the new frontier of virtual reality with the oculus rift and bring the vr revolution to your own projects about this book create immersive 3d games especially designed for the oculus rift platform build complex realistic virtual reality vr games with the unity engine create striking vr environments with advanced graphical techniques who this book is for this book is for aspiring indie developers and vr enthusiasts who want to bring their ideas into virtual reality with a new platform that provides an unprecedented level of realism and immersion what you will learn increase immersion with 3d audio and intuitive interfaces create group vr experiences using multi player networking design fun and engaging mechanics that utilize vr principles explore the best ways to navigate and interact using the oculus rift design intuitive ways to navigate and interact with scenes in vr add stunning realism to a scene with three dimensional audio invent mechanics and features that take full advantage of vr hardware in detail virtual reality vr is changing the world of gaming and entertainment as we know it vr headsets such as the oculus rift immerse players in a virtual world by tracking their head movements and simulating depth giving them the feeling that they are actually present in the environment we will first use the oculus sdk in the book and will then move on to the widely popular unity engine showing you how you can add that extra edge to your vr games using the power of unity in this book you ll learn how to take advantage of this new medium by designing around each of its unique features this book will demonstrate the unity 5 game engine one of most widely used engines for vr development and will take you through a comprehensive project that covers everything necessary to create and publish a complete vr experience for the oculus rift you will also be able to identify the common perils and pitfalls of vr development to ensure that your audience has the most comfortable experience possible by the end of the book you will be able to create an advanced vr game for the oculus rift and you ll have everything you need to bring your ideas into a new reality style and approach this book takes a step by step tutorial approach with illustrative examples to help you implement the projects on your own the book lets you first get to grips with the oculus sdk and then moves on to the unity engine to add realistic graphics and features in your games this comprehensive textbook offers a scientifically sound and at the same time practical introduction to virtual and augmented reality vr ar readers will gain the theoretical foundation needed to design implement or enhance vr ar systems evaluate and improve user interfaces and applications using vr ar methods assess and enrich user experiences and develop a deeper understanding of how to apply vr ar techniques whether utilizing the book for a principal course of study or reference reading students of computer science education media natural sciences engineering and other subject areas can benefit from its in depth content and vivid explanation the modular structure allows selective sequencing of topics to the requirements of each teaching unit and provides an easy to use format from which to choose specific themes for individual self study instructors are provided with extensive materials for creating courses as well as a foundational text upon which to build their advanced topics the book enables users from both research and industry to deal with the subject in detail so they can properly assess the extent and benefits of vr ar deployment and determine required resources technology enthusiasts and professionals can learn about the current status quo in the field of vr ar and interested newcomers can gain insight into this fascinating world grounded on a solid scientific foundation this textbook addresses topics such as perceptual aspects of vr ar input and output devices including tracking interactions in virtual worlds real time aspects of vr ar systems and the authoring of vr ar applications in addition to providing a broad collection of case studies 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 this is the complete practical introduction to virtual reality and multimedia for those wishing to build systems it covers the foundations and engineering needed to design and construct projects incorporating video audio and textural elements and including the use of the latest hardware to create an artificial world for education information or entertainment production and authoring platforms are described computer animation and hypertext are covered but those looking for pages of software listings and computerspeak will be disappointed this book is about the nuts and bolts sound and video cards head mounted displays crystaleyes glasses other 3d glasses for entertainment audio and video production and realistic auditory and visual stimulation including stereoscopy the creation of cyberspace and strategies to achieve a complete cyberatmosphere are presented three dimensional sound generation and video techniques that have never previously been published are revealed this is the handbook for anyone working in the industry or hoping to enter it it also provides a guide for those hoping to cross fertilise the industry coming from audio video computing or engineering backgrounds a complete technical guide to mm and vr includes a hypertext edition of the book with added audio and graphics on cd hardware software video and never before published 3d audio techniques covered 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 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 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 design end to end ar solutions for domains such as marketing retail manufacturing tourism automation and training key featuresuse leading ar development frameworks such as arcore arkit and vuforia across key industriesidentify the market potential of ar for designing visual solutions in different business sectorsbuild multi platform ar projects for various platforms such as unity ios and androidbook description augmented reality ar is expanding its scope from just being used in mobile and game applications to enterprise different industries are using ar to enhance assembly line visualization guide operators performing difficult tasks attract more customers and even improve training techniques in this book you ll gain comprehensive insights into different aspects of developing ar based apps for six different enterprise sectors focusing on market needs and choosing the most suitable tool in each case you ll delve into the basics of unity and get familiar with unity assets materials and resources which will help you build a strong foundation for working on the different ar projects covered in the book you ll build real world projects for various industries such as marketing retail and automation in a step by step manner this will give you hands on experience in developing your own industrial ar apps while building the projects you ll explore various ar frameworks used in the enterprise environment

such as vuforia easyar arcore and arkit and understand how they can be used by themselves or integrated into the unity 3d engine to create ar markers 3d models and components of an ar app by the end of this book you ll be well versed in using different commercial ar frameworks as well as unity for building robust ar projects what you will learnunderstand the basics of unity application development and c scriptinglearn how to use android studio along with arcore and sceneform to build ar prototypes for android devicesenable ar experiences on the web with arcore and webarexplore emerging ar authoring tools such as augmented class for educationunderstand the differences and similarities between handheld and head mounted display hmd environments and how to build an app for each targetbecome well versed in using xcode with arkit and scenekit to develop ar portals for ios deviceswho this book is for this book is for anyone interested in emerging and interactive technologies or looking to build ar applications for any domain although no prior augmented reality experience is required having some skills in object oriented programming oop will be helpful with this book and software any user can explore and build virtual worlds while learning about the latest virtual reality innovations includes rend386 the new 3 d virtual reality software package and freznel 3 d glasses 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 did you ever wonder who built the first head mounted display who first detailed a coherent theory of cyberspace who wrote about cybersex and the challenges it creates who worried about addiction to vr did anyone ever cure cyber sickness from 1991 to 1996 cyberedge journal covered these stories and hundreds more cej was read in more than 40 countries by thousands of vr investors researchers entrepreneurs vendors and aficionados appreciated for its no vr hype attitude cyberedge journal was the publication of record for the vr industry in the 90 s author ben delaney was the publisher and editor of cyberedge journal and was one of the most respected commentators and presenters in the field and went on to publish the industry defining multi year market study the market for visual simulation virtual reality systems until 2004 now that vr is enjoying a renaissance it s time to understand where it came from and avoid making the same mistakes that were made in the first golden age of vr the 1990 s it s also a good time to remember the excitement and sense of adventure as well as the people that characterized those time virtual reality 1 0 describes not just some of the hot topics of vr but also the origins issues and solutions that were chronicled in the pages of cyberedge journal complemented by over 100 photos and drawings there is a surprisingly contemporary feel to these old articles in addition more than a dozen vr pioneers have contributed new reminiscences of their work in vr another treat the book is introduced by one of the acknowledged leaders of vr research and industry dr thomas furness founding director of the world famous human interface technology laboratory at the university of washington this book is a re issue of sex drugs and tessellation with minor edits augmented reality ar has many advantages that include increased engagement and interaction as well as enhanced innovation and responsiveness ar technology has applications in almost all domains such as medical training retail repair and maintenance of complex equipment interior design in architecture and construction business logistics tourism and classroom education innovating with augmented reality applications in education and industry explains the concepts behind ar explores some of its application areas and gives an in depth look at how this technology aligns with education 4 0 due to the rapid advancements in technology future education systems must prepare students to work with the latest technologies by enabling them to learn virtually in augmented ways in varied platforms by providing an illusion of physical objects which takes the students to a new world of imagination ar and virtual reality vr create virtual and interactive environments for better learning and understanding ar applications in education are covered in four chapters of this book including a chapter on how gamification can be made use of in the teaching and learning process the book also covers other application areas of ar and vr one such application area is the food and beverage industry with case studies on virtual 3d food employee training product customer interaction restaurant entertainment restaurant tours and product packaging the application of ar in the healthcare sector medical education and related devices and software are examined in the book s final chapter the book also provides an overview of the game development software unity a real time development platform for 2d and 3d ar and vr as well as the software tools and techniques used in developing ar based apps this book introduces readers to the captivating world of virtual reality vr which is being hailed as the next frontier in technological user experience major tech companies such as facebook and microsoft are investing millions if not billions in vr perfect for students interested in the stem disciplines this book teaches them what virtual reality is how it goes beyond just gaming and is being applied to solving real world problems by creating virtual environments for users finally readers learn about the bright future of virtual reality the golden age of virtual reality is here take the first step into v r programming and development with jeff w murraybuilding virtual reality with unity and steamvr murray explores some of the topical issues surrounding virtual reality including v r sickness telepresence performance issues and practical ways to diminish these detrimental effects to make a more comprehensive experience building virtual reality also grants readers a hands on approach with the unity game engine and programming the example projects and sample c code found in the text are compatible with all steamvr supported virtual reality head mounted displays that are currently available this text is the essential survival guide to vr and vr development for any reader author bio jeff w murray has written two books game development for ios with unity3d c game programming cookbook for unity3d both published by crc press in his game development career spanning over 14 years he has worked with some of the world murray key features discusses some of the key issues facing virtual reality and provides helpful tips for making better v r experiences develop v r applications with practical examples geared to work with both the oculus rift and htc vive as well as open source virtual reality osvr headsets like the hdk find out how to build both standing and seated experiences tips on optimizing performance with the unity profilers explore examples specifically for htc vive controllers and picking up and throwing physics objects including haptic feedback discover how to build user interfaces for virtual reality as well as discussing some best practices for v r based user interface design written by a games industry veteran who has been a v r developer since the first oculus development kit create web based vr applications and deploy them to github pages with this short practical tutorial crammed with hands on examples this book covers topics such as vr the webvr api and a frame in learning based virtual reality you will build a number of 3d vr based applications in these apps you will be able to test the vr environments walk through the virtual world interact with the objects and perceive these virtual realities with the help of google cardboard by the end of the book you will have a complete understanding of what webvr is knowledge of what vr devices are available and the requirements to start working on webvr you will also be comfortable in using a frame and its various components to build your own vr projects what you will learn experience webvr the webvr api and webvr libraries make use of various pieces of vr hardware see popular webvr projects use a frame to build your own webvr projects who this book is for developers who want to build and deploy web based virtual reality technology understanding of html5 javascript and css is required this learning path makes you an expert developer of ar and vr applications by teaching you everything from the basic principles of ar application

development to developing immersive and fun vr applications using unity 3d and unity 2018 the dramatic larger than life true story behind the founding of oculus and its quest for virtual reality by the bestselling author of console wars drawing on over a hundred interviews with the key players driving this revolution the history of the future weaves together a rich cinematic narrative that captures the breakthroughs breakdowns and human drama of trying to change the world the result is a super accessible and supremely entertaining look at the birth of a game changing new industry from iconic books like neuromancer to blockbuster films like the matrix virtual reality has long been hailed as the ultimate technology but outside of a few research labs and military training facilities this tantalizing vision of the future was nothing but science fiction until 2012 when oculus founder palmer luckey then just a rebellious teenage dreamer living alone in a camper trailer invents a device that has the potential to change everything with the help of a videogame legend a serial entrepreneur and many other colorful characters luckey s scrappy startup kickstarts a revolution and sets out to bring vr to the masses as with most underdog stories things don t quite go according to plan but what happens next turns out to be the ultimate entrepreneurial journey a tale of battles won and lost lessons learned and neverending twists and turns including an unlikely multi billion dollar acquisition by facebook s mark zuckerberg which shakes up the landscape in silicon valley and gives oculus the chance to forever change our reality drawing on over a hundred interviews with the key players driving this revolution the history of the future weaves together a rich cinematic narrative that captures the breakthroughs breakdowns and human drama of trying to change the world the result is a super accessible and supremely entertaining look at the birth of a game changing new industry