Augmented Reality Vs Virtual Reality Differences And

“Virtual Reality & Augmented Reality in Industry” collects the proceedings of the 2nd Sino-German Workshop on the same topic held in Shanghai on April 16-17, 2009. The papers focus on the latest Virtual Reality (VR) / Augmented Reality (AR) technology and its application in industrial processes and presents readers with innovative methods, typical case studies and the latest information on VR/AR basic research results and industrial applications, such as 3D rendering, innovative human-machine design, VR/AR methodology and new tools for assisting in industry, virtual assembly, virtual factory, training and education, etc. The book is intended for computer scientists, IT engineers as well as researchers in Mechanical Engineering. Dr. Dengzhe Ma and Dr. Xiumin Fan are both professors at Shanghai Jiao Tong University, China; Dr.-Ing. Jürgen Gausemeier is a professor of Computer-Integrated Manufacturing at the Heinz Nixdorf Institute, University of Paderborn, Germany; Dipl.-Ing. Michael Grafe is a senior engineer in the Product Engineering Research Group at the Heinz Nixdorf Institute, University of Paderborn.

The 2-volume set LNCS 12242 and 12243 constitutes the refereed proceedings of the 7th International Conference on Augmented Reality, Virtual Reality, and Computer Graphics, AVR 2020, held in Lecce, Italy, in September 2020. The 45 full papers and 14 short papers presented were carefully reviewed and selected from 99 submissions. The papers discuss key issues, approaches, ideas, open problems, innovative applications and trends in virtual reality, augmented reality, mixed reality, 3D reconstruction visualization, and applications in the areas of cultural heritage, medicine, education, and industry. The conference was held virtually due to the COVID-19 pandemic. 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 turn for expert guidance. In this book, Erin Pangilinan, Steve Lukas, and Vasantha 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 Timon 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

New technologies and ongoing developments in the fields of Virtual reality, augmented reality and artificial intelligence are changing the ways in which we facilitate learning. Recognising the positive role these technologies can play in the learning and progress of students assessed as having special educational needs, this practical guide explains the characteristics, benefits, risks and potential applications of new technologies in the classroom. An innovative and timely resource, Virtual Reality, Augmented Reality and Artificial Intelligence in Special Education offers a background in the evidence-based theory and practice of using new technologies in an educational context. Accessible and free of complex jargon, chapters provide information on the development, intended uses and most current terminology used in relation to technologies, and explains how modern equipment, approaches and possibilities can be used to promote improved communication skills, independent learning and heightened self-esteem amongst students diagnosed with SEND. Offering a wealth of practical tips, downloadable resources and ideas for engaging with technology in the classroom, the text will support teachers to ensure that students can benefit from exciting technological advances and learn to use them appropriately. Demystifying a complex and varied field, this practical resource will inspire and inform teachers, SENCOs and practitioners working with children and students with SEND as they harness the use of technology in the classroom.

This book explains the basics of virtual reality, augmented reality and 360° videos in a simple way. We'll compare each technology, providing details on the similarities and differences in their interactions. Discover the origins of AR, VR and 360° films through exciting peeks into the historical context of these technologies. What are the special features of these technologies? We explore the technological prerequisites that enable these technologies, including the input and output devices. In terms of empirical research in this book, we consider successful industry case studies and analyze them through a comprehensive market analysis, while taking stock of their distinct characteristics. We'll take a look at each project's similarities and differences as well. With increasing attention from the media and investors, constant and rapid developments have taken place, leading to a growing number of VR, AR and 360° video users. There will surely be major achievements for these technologies in the near future as they become an integral part of the 21st century. This is one of the top readings for firsthand easy-to-understand insights into the world of these new technologies - VR, AR and 360° videos.

This book offers readers fresh insights on applying Extended Reality to Digital Anatomy, a novel emerging discipline. Indeed, the way professors teach anatomy in immersive virtual reality is changing rapidly. The novel technology-based approaches become ever more accessible. Recent studies show that Virtual (VR), Augmented (AR), and Mixed-Reality (MR) can improve both retention and learning outcomes. Readers will find relevant tutorials about three-dimensional reconstruction techniques to perform virtual dissections. Several chapters serve as practical manuals for students and teachers in anatomy to refresh or develop their Digital Anatomy skills. We developed this book as a support tool for collaborative efforts around Digital Anatomy, especially in distance learning, international and interdisciplinary contexts. We aim to leverage source material in this book to support new Digital Anatomy courses and syllabi in interdepartmental, interdisciplinary collaborations. Digital Anatomy - Applications of Virtual, Mixed and Augmented Reality provides a valuable tool to foster cross-disciplinary dialogues between anatomists, surgeons, radiologists, clinicians, computer scientists, course designers, and industry practitioners. It is the result of a multidisciplinary exercise and will undoubtedly catalyze new specialities and collaborative Master and Doctoral level courses world-wide. In this perspective, the UNESCO Chair in digital anatomy was created at the Paris Descartes University in 2015 (www.anatomieunesco.org). It aims to federate the education of anatomy around university partners from all over the world, wishing to use these new 3D modeling techniques of the human body.

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 immersive virtual learning environments. The implementation 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 contexts.
 programs.
State-of-the-Art Virtual Reality and Augmented Reality Knowhow is a compilation of recent advancements in digital technologies embracing a wide arena of disciplines. Amazingly, this book presents less business cases of these emerging technologies, but rather showcases the scientific use of VR/AR in healthcare, building industry and education. VR and AR are known to be resource intensive, namely, in terms of hardware and wearables - this is covered in a chapter on head-mounted display (HMD). The research work presented in this book is of excellent standard presented in a very pragmatic way; readers will appreciate the depth and breadth of the methodologies and discussions about the findings. We hope it serves as a springboard for future research and development in VR/AR and stands as a lighthouse for the scientific community.

This book constitutes the refereed proceedings of the Second International Conference on Augmented and Virtual Reality, AVR 2015, held in Lecce, Italy, in September 2015. The 32 papers and 8 short papers presented were carefully reviewed and selected from 82 submissions. The SALENTO AVR 2015 conference brings together a community of researchers from academia and industry, computer scientists, engineers, and physicians in order to share points of views, knowledge, experiences, and scientific and technical results related to state-of-the-art solutions and technologies on virtual and augmented reality applications for medicine, cultural heritage, education, industrial sectors, as well as the demonstration of advanced products and technologies.

Augmented Reality (AR) refers to the merging of a live view of the physical, real world with context-sensitive, computer-generated images to create a mixed reality. Through this augmented vision, a user can digitally interact with and adjust information about their surrounding environment on-the-fly. Handbook of Augmented Reality provides an extensive overview of the current and future trends in Augmented Reality, and chronicles the dramatic growth in this field. The book includes contributions from world experts in the field of AR from academia, research laboratories and private industry. Case studies and examples throughout the handbook help introduce the basic concepts of AR, as well as outline the Computer Vision and Multimedia techniques most commonly used today. The book is intended for a wide variety of readers including academicians, designers, developers, educators, engineers, practitioners, researchers, and graduate students. This book can also be beneficial for business managers, entrepreneurs, and investors.

The 2-volume set LNCS 11613 and 11614 constitutes the refereed proceedings of the 6th International Conference on Augmented Reality, Virtual Reality, and Computer Graphics, AVR 2019, held in Santa Maria al Bagno, Italy, in June 2019. The 32 full papers and 35 short papers presented were carefully reviewed and selected from numerous submissions. The papers discuss key issues, approaches, ideas, open problems, innovative applications and trends in virtual and augmented reality, 3D visualization and computer graphics in the areas of medicine, cultural heritage, arts, education, entertainment, military and industrial applications. They are organized in the following topical sections: virtual reality; medicine; augmented reality; cultural heritage; education; and industry.

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.

The 2-volume set LNCS 9768 and 9769 constitutes the refereed proceedings of the Third International Conference on Augmented Reality, Virtual Reality, and Computer Graphics, AVR 2016, held in Lecce, Italy, in June 2016. The 40 full papers and 29 short papers presented were carefully reviewed and selected from 131 submissions. The SALENTO AVR 2016 conference intended to bring together researchers, scientists, and practitioners to discuss key issues, approaches, ideas, open problems, innovative applications and trends in virtual and augmented reality, 3D visualization and computer graphics in the areas of medicine, cultural heritage, arts, education, entertainment, industrial and military sectors.

This book presents a collection of the latest research in the area of immersive technologies, presented at the International Augmented and Virtual Reality Conference 2018 in Manchester, UK, and showcases how augmented reality (AR) and virtual reality (VR) are transforming the business landscape. Innovations in this field are seen as providing opportunities for businesses to offer their customers unique services and experiences. The papers gathered here advance the state of the art in AR/VR technologies and their applications in various industries such as healthcare, tourism, hospitality, events, fashion, entertainment, retail, education and gaming. The volume collects contributions by prominent computer and social sciences experts from around the globe. Addressing the most significant topics in the field of augmented and virtual reality and sharing the latest findings, it will be of interest to academics and practitioners alike.

Virtual & Augmented Reality For DummiesJohn Wiley & Sons

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.

Virtual Reality gives people the opportunity to visit and explore worlds created by computers. With the use of headsets and headphones, users are transported to a fantasy world full of incredible experiences. Correlates with STEM instruction and NexGen standards. Includes glossary, websites, and bibliography for further reading.

The 2-volume set LNCS 10850 and 10851 constitutes the refereed proceedings of the 5th International Conference on Augmented Reality, Virtual Reality, and Computer Graphics, AVR 2018, held in Otranto, Italy, in June 2018. The 67 full papers and 26 short papers presented were carefully reviewed and selected from numerous submissions. The papers are organized in the following topical sections: virtual reality; augmented and mixed reality; computer graphics; human-computer interaction; applications of VR/AR in medicine; and applications of VR/AR in cultural heritage; and applications of VR/AR in industry.

How augmented reality and virtual reality are taking their places in contemporary media culture alongside film and television. T This book positions augmented reality (AR) and virtual reality (VR) firmly in contemporary media culture. The authors view AR and VR not as the latest hyped technologies but as media—the latest in a series of what they term “reality media,” taking their places alongside film and television. Reality media inserts a layer of media between us and our perception of the world; AR and VR do not replace reality but refashion a reality for us. Each reality medium mediates and mediates; each offers a new representation that we implicitly compare to our experience of the world in itself but also through other media. The authors show that as forms of reality media emerge, they not only chart a future path for media culture, but also redefine media past. With AR and VR in mind, then, we can recognize their precursors in eighteenth-century panoramas and the Broadway lights of the 1930s. A digital version of Reality Media, available through the book's website, invites readers to visit a series of virtual rooms featuring interactivity, 3-D models, videos, images, and texts that explore the themes of the book.

Augmented reality (AR) and virtual reality (VR) provide flexibility in education and have become widely used for the promotion of multimedia learning. This use coincides with mobile devices becoming prevalent, VR devices becoming more affordable, and the creation of user-friendly software that allows the development of AR/VR applications by non-experts. However, because the integration of AR and VR into education is a fairly new practice that is only in its initial stage, these processes and outcomes need to be improved. Designing, Deploying, and Evaluating Virtual and Augmented Reality in Education is an essential research book that presents current practices and procedures from different technology-implementation stages (design, deployment, and evaluation) to help educators use AR/VR applications in their own teaching practices. The book provides comprehensive information on AR and VR applications in different educational settings from various perspectives including but not limited to mobile learning, formal/informal learning, and integration strategies with practical and/or theoretical implications. Barriers and challenges to their implementation that are currently faced by educators are also addressed. This book is ideal for academicians, instructors, curriculum designers, policymakers, instructional designers, researchers, education professionals, practitioners, and students.

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 is the first comprehensive research monograph devoted to the use of augmented reality in education. It is written by a team of 58 world-leading researchers, practitioners and artists from 15 countries, pioneering in employing augmented reality as a new teaching and learning technology and tool. The authors explore the state of the art in educational augmented reality and its usage in a large variety of particular areas, such as medical education and training, English language education, chemistry learning, environmental and special education, dental training, mining engineering teaching, historical and fine art education. Augmented Reality in Education: A New Technology for Teaching and Learning is essential reading not only for educators of all types and levels, educational researchers and technology developers, but also for students (both graduates and undergraduates) and anyone who is interested in the educational use of emerging augmented reality technology.

Augmented and virtual reality (AR and VR) offer exciting opportunities for human computer interaction (HCI), the enhancement of places, and new business cases. Though VR is most popular for video games, especially among younger generations, AR and VR can also be used in applications that include military, medical, navigational, tourism, marketing, and maintenance uses. Research in these technologies along with 3D user interfaces has gained momentum in recent years and has solidified it as a staple technology for the foreseeable future. Multimedia and Sensory Input for Augmented, Mixed, and Virtual Reality includes a collection of business case studies covering a variety of topics related to AR, VR, and mixed reality (MR) including their use in possible applications. This book also touches on the diverse uses of AR and VR in many industries and discusses their importance, challenges, and opportunities. While discussing the use these technologies in sectors such as education, healthcare, and computer science, this book is ideal for computer scientists, engineers, practitioners, stakeholders, researchers, academicians, and students who are interested in the latest research on augmented, mixed, and virtual reality.

New Perspectives on Virtual and Augmented Reality discusses the possibilities of using virtual and augmented reality in the role of innovative pedagogy, where there is an urgent need to find ways to teach and support learning in a transformed learning environment. Technology creates opportunities to learn differently and presents challenges for education. Virtual reality solutions can be exciting, create interest in learning, make learning more accessible and make learning faster. This book analyses the capabilities of virtual, augmented and mixed reality by providing ideas on how to make learning more effective, how existing VR/AR solutions can be used as learning tools and how a learning process can be structured. The virtual reality (VR) solutions can be used successfully for educational purposes as their use can contribute to the construction of knowledge and the development of metacognitive processes. They also contribute to inclusive education by providing access to knowledge that would not otherwise be available. This book will be of great interest to academics, researchers and post-graduate students in the field of educational technology.

This book constitutes the refereed proceedings of the 14th International Conference on Virtual Reality and Augmented Reality, EuroVR 2017, held in Laval, France, in December 2017. The 10 full papers and 2 short papers presented were carefully reviewed and selected from 36 submissions. The papers are organized in four topical sections: interaction models and user studies, visual and haptic real-time rendering, perception and cognition, and rehabilitation and safety. This second edition provides easy access to important concepts, issues and technology trends in the field of multimedia technologies, systems, techniques, and applications. Over 1,100 heavily-illustrated pages — including 80 new entries — present concise overviews of all aspects of software, systems, web tools and hardware that enable video, audio and developing media to be shared and delivered electronically.

The 13th International Conference on Human–Computer Interaction, HCI Inter- tional 2009, was held in San Diego, California, USA, July 19–24, 2009, jointly with the Symposium on Human Interface (Japan) 2009, the 8th International Conference on Engineering Psychology and Cognitive Ergonomics, the 5th International Conference on Universal Access in Human–Computer Interaction, the Third International Confer- ence on Virtual and Mixed Reality, the Third International Conference on Internati- alization, Design and Global Development, the Third International Conference on Online Communities and Social Computing, the 5th International Conference on Augmented Cognition, the Second International Conference on Digital Human Mod- ing, and the First International Conference on Human Centered Design. A total of 4,348 individuals from academia, research institutes, industry and gove- mental agencies from 73 countries submitted contributions, and 1,397 papers that were judged to be of high scientific quality were included in the program. These papers - dress the latest research and development efforts and highlight the human aspects of the design and use of computing systems. The papers accepted for presentation thoroughly cover the entire field of human–computer interaction, addressing major advances in knowledge and effective use of computers in a variety of application areas. This book is written for librarians, by librarians: understanding that diverse communities use libraries, museums, and archives for a variety of different reasons. It makes augmented reality, virtual reality, and mixed reality applications much more accessible to professionals in libraries, museums, and archives.

Virtual and Augmented Reality have existed for a long time but were stuck to the research world or to some large manufacturing companies. With the appearance of low-cost devices, it is expected a number of new applications, including for the general audience. This book aims at making a statement about those novelties as well as distinguishing them from the complexes challenges they raise by proposing real use cases, replacing those recent evolutions through the VR/AR dynamic and by providing some perspective for the years to come.

This book constitutes the refereed proceedings of the 17th International Conference on Virtual Reality and Augmented Reality, EuroVR 2020, held in Valencia, Spain, in November 2020. The 12 full papers were carefully reviewed and selected from 35 submissions. The papers are organized in topical sections named: Perception, Cognition and
Behaviour; Training, Teaching and Learning; Tracking and Rendering; and Scientific Posters. This book features the latest research in the area of immersive technologies, presented at the 5th International Augmented and Virtual Reality Conference, held in Munich, Germany in 2019. Bridging the gap between academia and industry, it presents the state of the art in augmented reality (AR) and virtual reality (VR) technologies and their applications in various industries such as marketing, education, healthcare, tourism, events, fashion, entertainment, retail and the gaming industry. The volume is a collection of research papers by prominent AR and VR scholars from around the globe. Covering the most significant topics in the field of augmented and virtual reality and providing the latest findings, it is of interest to academics and practitioners alike.

This book features the latest research in the area of immersive technologies, presented at the 6th International Augmented Reality and Virtual Reality Conference, held in online in 2020. Bridging the gap between academia and industry, it presents the state of the art in augmented reality (AR) and virtual reality (VR) technologies and their applications in various industries such as marketing, education, health care, tourism, events, fashion, entertainment, retail and the gaming industry. The book is a collection of research papers by prominent AR and VR scholars from around the globe. Covering the most significant topics in the field of augmented and virtual reality and providing the latest findings, it is of interest to academics and practitioners alike.

Understanding Augmented Reality addresses the elements that are required to create augmented reality experiences. The technology that supports augmented reality will come and go, evolve and change. The underlying principles for creating exciting, useful augmented reality experiences are timeless. Augmented reality designed from a purely technological perspective will lead to an AR experience that is novel and fun for one-time consumption - but is no more than a toy. Imagine a filmmaking book that discussed cameras and special effects software, but ignored cinematography and storytelling! In order to create compelling augmented reality experiences that stand the test of time and cause the participant in the AR experience to focus on the content of the experience - rather than the technology - one must consider how to maximally exploit the affordances of the medium. Understanding Augmented Reality addresses core conceptual issues regarding the medium of augmented reality as well as the technology required to support compelling augmented reality. By addressing AR as a medium at the conceptual level in addition to the technological level, the reader will learn to conceive of AR applications that are not limited by today’s technology. At the same time, ample examples are provided that show what is possible with current technology. Explore the different techniques, technologies and approaches used in developing AR applications. Learn from the author’s deep experience in virtual reality and augmented reality applications to succeed right off the bat, and avoid many of the traps that catch new developers and users of augmented reality experiences. Some AR examples can be experienced from within the book using downloadable software.

"The goal of this book is to show how to put Virtual Reality in action by linking academic and informatics researchers with professionals who use and need VR in their day-a-day work, with a special focus on healthcare professionals and related areas for the purpose of exchanging the knowledge, information and technology from the international communities in the area of VR, AR and XR" –

The 2-volume set LNCS 10324 and 10325 constitutes the refereed proceedings of the 4th International Conference on Augmented Reality, Virtual Reality, and Computer Graphics, AVR 2017, held in Ugento, Italy, in June 2017. The 54 full papers and 24 short papers presented were carefully reviewed and selected from 112 submissions. The papers are organized in the following topical sections: virtual reality; augmented and mixed reality; computer graphics; human-computer interaction; applications of VR/AR in medicine; and applications of VR/AR in cultural heritage.

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 dorama, first-person characters, and rail-riding. Explore 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 the Immersive reality (VR, AR, and MR) is shaping multiple industries today. Everything, from marketing to retail and training to education, is being fundamentally changed by technology. This concise book will explore all the ways the technology is shaping our industries, disrupting our old way of life and new ways to improve processes. But like all technologies, we must bear in mind how we sustainably move into our future. The book summarises by exploring the ethics behind VR and AR, as well as the regulations we must bear in mind. Are you ready for the immersive reality revolution? Contents: - Introduction: The Immersive Reality Revolution- Education: Teaching Future Generations With Immersive Tech- Empathy: The Power of Immersion to Change Lives- Social Spaces: Shaping the Way We Communicate With One Another- AR Glasses: The Next Big Tech Battle- Training: Training the Next Generation of Employees Safely- Movies: A New Way to Watch Entertainment- Interview: Deep Dive Into Immersive Film- AR Creators: A New Channel for Marketing- Drones: Zooming in First Person- Arcades: The Gateway to VR- Meditation: Quiet in a Loud World- Ethics in Virtual and Augmented Reality- Control: Regulation and Risks in the Future- Epilogue: Where Immersive Technology Will Go Next Page 5/6