

Microsoft Hologram Hpu Architecture Detailed

This book presents a collection of the latest research in the area of immersive technologies, presented at the International Augmented and Virtual Reality Conference 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 applications in various industries such as healthcare, tourism, hospitality, events, fashion, entertainment, retail, education and gaming. The volume collects contributions from 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 findings, it will be of interest to academics and practitioners alike.

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 mobile 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 complex challenges they raise by proposing real use cases, replacing those recent evolutions through the VR/AR dynamic and by providing some perspectives for the years to come.

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

A new design expression is being formed in China as architects look internally for visionary design instead of toward the West.

For HoloLens and Mixed Reality Headsets

Optical Architectures for Augmented-, Virtual-, and Mixed-reality Headsets

10th International Conference, VAMR 2018, Held as Part of HCI International 2018, Las Vegas, NV, USA, July 15-20, 2018, Proceedings, Part I

The VR Book

Enterprise Application Architecture with .NET Core

Fundamentals of Wearable Computers and Augmented Reality

Transforming Education. Empowering the Students of Today to Create the World of Tomorrow

This book examines issues and implications of digital and social media marketing for emerging markets. These markets necessitate substantial adaptations of developed theories and approaches employed in the Western world. The book investigates problems specific to emerging markets, while identifying new theoretical constructs and practical applications of digital marketing. It addresses topics such as electronic word of mouth (eWOM), demographic differences in digital marketing, mobile marketing, search engine advertising, among others. A radical increase in both temporal and geographical reach is empowering consumers to exert influence on brands, products, and services.

Information and Communication Technologies (ICTs) and digital media are having a significant impact on the way people communicate and fulfil their socio-economic, emotional and material needs. These technologies are also being harnessed by businesses for various purposes including distribution and selling of goods, retailing of consumer services, customer relationship management, and influencing consumer behaviour by employing digital marketing practices. This book considers this, as it examines the practice and research related to digital and social media marketing.

This guide provides an inspiration and a vision for school leaders. It draws on two decades of global research, data, and experiences, taking an unflinching look at what works, and what doesn't in learning transformation. The result is a short-cut to success. Key concepts, red flags, and powerful questions designed to support transformation at systemic

and school level. With insights from thought leaders to align school stakeholders with modern educational thinking. You'll also find practical help in the form of roadmaps and checklists, as well as recommendations on using technology to teach the future-ready skills that are so vital to today's young people and the success of nations in a global economy. Every school leader should take time to look through this book before attempting transformational change. It is startling, uncomfortable at times, but it rewards you with a solid foundation on which to move forward.

Architect and design highly scalable, robust, clean and highly performant applications in .NET Core About This Book Incorporate architectural soft-skills such as DevOps and Agile methodologies to enhance program-level objectives Gain knowledge of architectural approaches on the likes of SOA architecture and microservices to provide traceability and rationale for architectural decisions Explore a variety of practical use cases and code examples to implement the tools and techniques described in the book Who This Book Is For This book is for experienced .NET developers who are aspiring to become architects of enterprise-grade applications, as well as software architects who would like to leverage .NET to create effective blueprints of applications. What You Will Learn Grasp the important aspects and best practices of application lifecycle management Leverage the popular ALM tools, application insights, and their usage to monitor performance, testability, and optimization tools in an enterprise Explore various authentication models such as social media-based authentication, 2FA and OpenID Connect, learn authorization techniques Explore Azure with various solution approaches for Microservices and Serverless architecture along with Docker containers Gain knowledge about the recent market trends and practices and how they can be achieved with .NET Core and Microsoft tools and technologies In Detail If you want to design and develop enterprise applications using .NET Core as the development framework and learn about industry-wide best practices and guidelines, then this book is for you. The book starts with a brief introduction to enterprise architecture, which will help you to understand what enterprise architecture is and what the key components are. It will then teach you about the types of patterns and the principles of software development, and explain the various aspects of distributed computing to keep your applications effective and scalable. These chapters act as a catalyst to start the practical implementation, and design and develop applications using different architectural approaches, such as layered architecture, service oriented architecture, microservices and cloud-specific solutions. Gradually, you will learn about the different approaches and models of the Security framework and explore various authentication models and authorization techniques, such as social media-based authentication and safe storage using app secrets. By the end of the book, you will get to know the concepts and usage of the emerging fields, such as DevOps, BigData, architectural practices, and Artificial Intelligence. Style and approach Filled with examples and use cases, this guide takes a no-nonsense approach to show you the best tools and techniques required to become a successful software architect.

This edited book is one of the first to describe how Autonomous Virtual Humans and Social Robots can interact with real people and be aware of the surrounding world using machine learning and AI. It includes:

- Many algorithms related to the awareness of the surrounding world such as the recognition of objects, the interpretation of various sources of data provided by cameras, microphones, and wearable sensors
- Deep Learning Methods to provide solutions to Visual Attention, Quality Perception, and Visual Material Recognition
- How Face Recognition and Speech Synthesis will replace the traditional mouse and keyboard interfaces
- Semantic modeling and rendering and shows how these domains play an important role in Virtual and Augmented Reality Applications. Intelligent Scene Modeling and Human-Computer Interaction explains how to understand the composition and build very complex scenes and emphasizes the semantic methods needed to have an intelligent interaction with them. It offers readers a unique opportunity to comprehend the rapid changes and continuous development in the fields of Intelligent Scene Modeling.

Emerging Applications and Theoretical Development

Motion and Depth Sensing for Natural User Interfaces

Augmented Reality for Developers

Volume 9

House of the Dragon

Microsoft HoloLens Developer's Guide

Windows 8 Secrets

"This book is a timely review of the various optical architectures, display technologies, and building blocks for modern consumer, enterprise, and defense head-mounted displays for various applications, including smart glasses, smart eyewear, and virtual-reality, augmented-reality, and mixed-reality headsets. Special attention is paid to the facets of the human perception system and the need for a human-centric optical design process that allows for the most comfortable headset that does not compromise the user's experience. Major challenges--from wearability and visual comfort to sensory and display immersion--must be overcome to meet market analyst expectations, and the book reviews the most appropriate optical technologies to address such challenges, as well as the latest product implementations"--

Virtual reality (VR) potentially provides our minds with direct access to digital media in a way that at first seems to have no limits. However, creating compelling VR experiences is an incredibly complex challenge. When VR is done well, the results are brilliant and pleasurable experiences that go beyond what we can do in the real world. When VR is done badly, not only is the system frustrating to use, but sickness can result. Reasons for bad VR are numerous; some failures come from the limitations of technology, but many come

from a lack of understanding perception, interaction, design principles, and real users. This book discusses such issues, focusing upon the human element of VR rather than technical implementation, for if we do not get the human element correct, then no amount of technology will make VR anything more than an interesting tool confined to research laboratories. Even when VR principles are fully understood, first implementations are rarely novel and never ideal due to the complex nature of VR and the countless possibilities. However, the VR principles discussed within enable us to intelligently experiment with the rules and iteratively design towards innovative experiences.

Digital technology and architecture have become inseparable, with new approaches and methodologies not just affecting the workflows and practice of architects but shaping the very character of architecture. In this compendious work, two dozen university professors and lecturers share their expertise: structured into six parts, the Atlas offers an orientation to the myriad ways in which computers are used in architecture today, such as: 3D Modelling and CAD; Rendering and Visualisation; Scripting, Text & Code; Digital Manufacturing and Model Making; GIS, BIM, Simulation, and Big Data & Machine Learning, to name but these. The Atlas understands itself as an orientation to the vast range of possibilities and professional profiles that digital technology puts on the table today.

Industrial revolutions have impacted both, manufacturing and service. From the steam engine to digital automated production, the industrial revolutions have conducted significant changes in operations and supply chain management (SCM) processes. Swift changes in manufacturing and service systems have led to phenomenal improvements in productivity. The fast-paced environment brings new challenges and opportunities for the companies that are associated with the adaptation to the new concepts such as Internet of Things (IoT) and Cyber Physical Systems, artificial intelligence (AI), robotics, cyber security, data analytics, block chain and cloud technology. These emerging technologies facilitated and expedited the birth of Logistics 4.0. Industrial Revolution 4.0 initiatives in SCM has attracted stakeholders' attentions due to its ability to empower using a set of technologies together that helps to execute more efficient production and distribution systems. This initiative has been called Logistics 4.0 of the fourth Industrial Revolution in SCM due to its high potential. Connecting entities, machines, physical items and enterprise resources to each other by using sensors, devices and the internet along the supply chains are the main attributes of Logistics 4.0. IoT enables customers to make more suitable and valuable decisions due to the data-driven structure of the Industry 4.0 paradigm. Besides that, the system's ability of gathering and analyzing information about the environment at any given time and adapting itself to the rapid changes add significant value to the SCM processes. In this peer-reviewed book, experts from all over the world, in the field present a conceptual framework for Logistics 4.0 and provide examples for usage of Industry 4.0 tools in SCM. This book is a work that will be beneficial for both practitioners and students and academicians, as it covers the theoretical framework, on the one hand, and includes examples of practice and real world.

Cinematics

Construction Robots: Volume 3

Theory and Practice for Next-Generation Spatial Computing

Real-Time 3D Rendering with DirectX and HLSL

Integrating Technology in Literacy Instruction

Digital Resources for Learning

HoloLens Blueprints

This is the first book to describe the Microsoft HoloLens wearable augmented reality device and provide step-by-step instructions on how developers can use the HoloLens SDK to create Windows 10 applications that merge holographic virtual reality with the wearer's actual environment. Best-selling author Allen G. Taylor explains how to develop and deliver HoloLens applications via Microsoft's ecosystem for third party apps. Readers will also learn how HoloLens differs from other virtual and augmented reality devices and how to create compelling applications to fully utilize its capabilities. What You Will Learn: The features and capabilities of HoloLens How to build a simple Windows 10 app optimized for HoloLens The tools and resources contained in the HoloLens SDK How to build several HoloLens apps, using the SDK tools

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.

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, ARToolKit, 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.

Lean Project Delivery and Integrated Practices in Modern Construction is the new and enhanced edition of the pioneering book Modern Construction by Lincoln H. Forbes and Syed M. Ahmed. This book provides a multi-faceted approach for applying lean methodologies to improve design and construction processes. Recognizing the wide diversity in the landscape of projects, and encompassing private and public sector activity, buildings and infrastructure, the book expands upon the detailed coverage of integrated project delivery and new lean tools and techniques to include: Greater emphasis on the importance of creating a lean culture and the initiatives required to transform the industry; Expanded discussions of the foundational writings in lean construction theory; Exploration of the synergies between "lean" and "green" initiatives; Specific procedures for modifying planning and scheduling activities to improve the performance of the project team; Expanded sections on quality, and topics that have become a part of the lean lexicon, such as Choosing by Advantages, "line of balance"/location-based scheduling, virtual design teams, takt time planning and set-based design; Discussion questions for beginners and advanced lean practitioners; and Improved cross-referencing within the text to help the reader navigate the frameworks, techniques and tools to support the application of lean principles. The techniques described here enhance the use of resources, reducing waste, minimizing delays, increasing quality and reducing overall costs. They enable practitioners to improve the quality of the built environment, secure higher levels of customer/owner satisfaction, and simultaneously improve their profitability. This book is essential reading for all those wanting to be at the forefront of construction management and lean thinking.

7th International Conference, AVR 2020, Lecce, Italy, September 7 – 10, 2020, Proceedings, Part I

Bringing Mixed Reality and HoloLens into the Digital Workplace

Human-Centered Design for Virtual Reality

Human Interface and the Management of Information: Applications in Complex Technological Environments

The Path to Becoming a Data-Driven Public Sector

Virtual Reality and Augmented Reality

Design Beyond Intelligence

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

Develop applications in Microsoft Kinect 2 using gesture and speech recognition, scanning of objects in 3D, and body tracking. Create motion-sensing applications for entertainment and practical uses, including for commercial products and industrial applications. Beginning Microsoft Kinect for Windows SDK 2.0 is dense with code and examples to ensure that you understand how to build Kinect applications that can be used in the real world. Techniques and ideas are presented to facilitate incorporation of the Kinect with other technologies.

What You Will Learn Set up Kinect 2 and a workspace for Kinect application development Access audio, color, infrared, and skeletal data streams from Kinect Use gesture and speech recognition Perform computer vision manipulations on image data streams Develop Windows Store apps and Unity3D applications with Kinect 2 Take advantage of Kinect Fusion (3D object mapping technology) and Kinect Ripple (Kinect projector infotainment system) Who This Book Is For Developers who want to include the simple but powerful Kinect technology into their projects, including amateurs and hobbyists, and professional developers

Develop applications and experiences for Microsoft's HoloLens and other Windows mixed reality devices. This easy-to-follow guide removes the mystery behind creating amazing

augmented reality experiences. Mixed reality development tools and resources are provided. Beginning Windows Mixed Reality Programming clearly explains all the nuances of mixed reality software development. You'll learn how to create 3D objects and holograms, interact with holograms using voice commands and hand gestures, use spatial mapping and 3D spatial sound, build with Microsoft's HoloToolkit, create intuitive user interfaces, and make truly awe-inspiring mixed reality experiences. Start building the holographic future today! What You Will Learn Prototype ideas quickly Get started with Unity, the preferred tool for animating 3D objects. Explore where to find 3D models for your project, or make your own! Use spatial sound, voice commands, and gestures Build with the HoloToolkit to make apps the easy way Publish to the Windows Store and make money from your app Who This Book Is For Programmers with little or no graphics or mixed reality experience

Thoroughly updated, this fourth edition focuses on modern techniques used to generate synthetic three-dimensional images in a fraction of a second. With the advent of programmable shaders, a wide variety of new algorithms have arisen and evolved over the past few years. This edition discusses current, practical rendering methods used in games and o

Build practical augmented reality applications with Unity, ARCore, ARKit, and Vuforia

Automating deployment by using System Center Configuration Manager

Thematic Area, HIMI 2022, Held as Part of the 24th HCI International Conference, HCII 2022, Virtual Event, June 26 - July 1, 2022, Proceedings, Part II

Virtual, Augmented and Mixed Reality: Interaction, Navigation, Visualization, Embodiment, and Simulation

Digital Transformation of Supply Chain Management

New Chinese Architecture

Logistics 4.0

This text addresses the changing literacies surrounding students and the need to communicate effectively using technology tools. Technology has the power to transform teaching and learning in classrooms and to promote active learning, interaction, and engagement through different tools and applications. While both technologies and research in literacy are rapidly changing and evolving, this book presents lasting frameworks for teacher candidates to effectively evaluate and implement digital tools to enhance literacy classrooms. Through the lens of Universal Design for Learning (UDL), this text prepares teacher candidates to shape learning environments that support the needs and desires of all literacy learners through the integration of technology and literacy instruction by providing a range of current models and frameworks. This approach supports a comprehensive understanding of the complex multiliteracies landscape. These models address technology integration and demonstrate how pedagogical knowledge, content knowledge, and technological knowledge can be integrated for the benefit of all learners in a range of contexts. Each chapter includes prompts for reflection and discussion to encourage readers to consider how literacy and technology can enable teachers to become agents of change, and the book also features Appendices with annotated resource lists of technology tools for students' varied literacy needs in our digital age.

Learn how Single-Task Construction Robots (STCRs) can improve productivity in the construction industry with this cross-disciplinary text. This third volume in The Cambridge Handbooks in Construction Robotics series discusses the STCRs employed on construction sites since the development of the approach in the 1980s, presents current applications, and highlights upcoming trends in the construction automation and robotics field. Two hundred different types of STCR are presented, from the simplest models comprising simple manipulators and mobile platforms, to those utilizing more sophisticated technologies such as aerial robotics, swarm robotics, exoskeletons, additive manufacturing technologies, self-assembling building structures, and humanoid robotics. Real-world case studies demonstrate the different application scenarios for each approach, and highlight the key implementation and management issues. With an easy-to-follow structure, and including hundreds of color illustrations, it provides an excellent toolkit for professional engineers, researchers, and students.

This edited book explores the use of technology to enable us to visualise the life sciences in a more meaningful and engaging way. It will enable those interested in visualisation techniques to gain a better understanding of the applications that can be used in visualisation, imaging and analysis, education, engagement and training. The reader will also be able to learn about the use of visualisation techniques and technologies for the historical and forensic settings. The reader will be able to explore the utilisation of technologies from a number of fields to enable an engaging and meaningful visual representation of the biomedical sciences. In this volume, there are chapters which examine forensic and historical visualisation techniques and digital reconstruction, ultrasound, virtual learning resources and patient utilised software and hardware. The use of HoloLens as a disruptive technology is discussed as well as historical items as a feature in a modern medical curriculum. It concludes with a fascinating chapter on pulse extraction from facial videos. All in all, this volume has something for everyone whether that is faculty, students, clinicians and forensic practitioners, patients, or simply having an interest in one or more of these areas.

This book constitutes the refereed proceedings of the 16th International Conference on Virtual Reality and Augmented Reality, EuroVR 2019, held in Tallinn, Estonia, in October 2019. The 11 full papers and 5 short papers presented together with 8 scientific posters were carefully

reviewed and selected from 54 submissions. The papers are organized in topical sections named: Immersive Interaction; Training, Teaching and Learning; Industrial Applications and Data Analysis; Perception, Cognition and Evaluation; and Scientific Posters.

Elementary Technologies and Single-Task Construction Robots

Digital and Social Media Marketing

Architectural Drawing Today

Réalité virtuelle et réalité augmentée

Biomedical Visualisation

The Second Digital Turn

A Practical Guide to Graphics Programming

This book addresses the theory and practice of using digital resources for contemporary learning, and how such resources can be designed, developed, and employed in a variety of learning activities and with various devices. Drawing on insights into learning theory, educational research and the practical design of digital resources for learning that the author has gained over the past 20 years, the book provides the first classification guide to digital resources for learning and links various types of digital resources for learning to both contemporary curriculum design and learning design models.

Prevalent types of data in scientific visualization are volumetric data, vector field data, and particle-based data. Particle data typically originates from measurements and simulations in various fields, such as life sciences or physics. The particles are often visualized directly, that is, by simple representants like spheres. Interactive rendering facilitates the exploration and visual analysis of the data. With increasing data set sizes in terms of particle numbers, interactive high-quality visualization is a challenging task. This is especially true for dynamic data or abstract representations that are based on the raw particle data. This book covers direct particle visualization using simple glyphs as well as abstractions that are application-driven such as clustering and aggregation. It targets visualization researchers and developers who are interested in visualization techniques for large, dynamic particle-based data. Its explanations focus on GPU-accelerated algorithms for high-performance rendering and data processing that run in real-time on modern desktop hardware. Consequently, the implementation of said algorithms and the required data structures to make use of the capabilities of modern graphics APIs are discussed in detail. Furthermore, it covers GPU-accelerated methods for the generation of application-dependent abstract representations. This includes various representations commonly used in application areas such as structural biology, systems biology, thermodynamics, and astrophysics. Data will not help you if you can't see it where you need it. Or can't collect it where you need it. Upon these principles, wearable technology was born. And although smart watches and fitness trackers have become almost ubiquitous, with in-body sensors on the horizon, the future applications of wearable computers hold so much more. A trusted reference for almost 15 years, *Fundamentals of Wearable Computers and Augmented Reality* goes beyond smart clothing to explore user interface design issues specific to wearable tech and areas in which it can be applied. Upon its initial publication, the first edition almost instantly became a trusted reference, setting the stage for the coming decade, in which the explosion in research and applications of wearable computers and augmented reality occurred. Written by expert researchers and teachers, each chapter in the second edition has been revised and updated to reflect advances in the field and provide fundamental knowledge on each topic, solidifying the book's reputation as a valuable technical resource as well as a textbook for augmented reality and ubiquitous computing courses. New Chapters in the Second Edition Explore: Haptics Visual displays Use of augmented reality for surgery and manufacturing Technical issues of image registration and tracking Augmenting the environment with wearable audio interfaces Use of augmented reality in preserving cultural heritage Human-computer interaction and augmented reality technology Spatialized sound and augmented reality Augmented reality and robotics Computational clothing From a technology perspective, much of what is happening now with wearables and augmented reality would not have been possible even five years ago. In the fourteen years since the first edition burst on the scene, the capabilities and applications of both technologies are orders of magnitude faster, smaller, and cheaper. Yet the book's overarching mission remains the same: to supply the fundamental information and basic knowledge about the design and use of wearable computers and augmented reality with the goal of enhancing people's lives.

Twenty-first century governments must keep pace with the expectations of their citizens and deliver on the promise of the digital age. Data-driven approaches are particularly effective for meeting those expectations and rethinking the way governments and citizens interact. This report highlights the important role data can play in creating conditions that improve public services, increase the effectiveness of public spending and inform ethical and privacy considerations. It presents a data-driven public sector framework that can help countries or organisations assess the elements needed for using data to make better-informed decisions across public sectors.

Models and Frameworks for All Learners

Intelligent Scene Modeling and Human-Computer Interaction

Atlas Digital Architecture

16th EuroVR International Conference, EuroVR 2019, Tallinn, Estonia, October 23–25, 2019, Proceedings

Beginning Windows Mixed Reality Programming

Mythes et réalités

Terminology, Concepts, Methods, Tools, Examples, Phenomena

This two-volume set LNCS 10909 and 10910 constitutes the refereed proceedings of the 10th International Conference on Virtual, Augmented and Mixed Reality, VAMR 2018, held as part of HCI International 2018 in Las Vegas, NV, USA. HCII 2018 received a total of 4346 submissions, of which 1171 papers and 160 posters were accepted for publication after a careful reviewing process. The 65 papers presented in this volume were organized in topical sections named: interaction, navigation, and visualization in VAMR; embodiment, communication, and collaboration in VAMR; education, training, and simulation; VAMR in psychotherapy, exercising, and health; virtual reality for cultural heritage, entertainment, and games; industrial and military applications.

This edited volume explores the use of technology to enable us to visualise the life sciences in a more meaningful and engaging way. It will enable those interested in visualisation techniques to gain a better understanding of the applications that can be used in imaging and analysis, education, engagement and training. The reader will be able to explore the utilisation of technologies from a number of fields to enable an engaging and meaningful visual representation of the life sciences. This use of technology-enhanced learning will be of benefit for the learner, trainer, in patient care and the wider field of education and engagement. By examining a range of techniques in image capture (photogrammetry, stereophotogrammetry, microphotogrammetry and autostereoscopy), this book will showcase the wide range of tools we can use. Researchers in this field will be able to find something suitable to apply to their work to enhance user engagement through improved visual means using the technologies we have available to us today. It will highlight the uses of these technologies to examine many aspects of the human body, and enable improved ways to enhance visual and tactile learning, including 3D printing. By demonstrating co-design processes, working directly with the end-stage users (including patients), it will also highlight successes in adopting tools like hand motion tracking rehabilitation for patients with conditions like multiple sclerosis. The book will also discuss the applications of immersive environments including virtual, augmented and mixed reality. The ultimate aim is to show how, by using these tools, we can enhance communication, mobile applications, health literacy and illustration of both normal and pathological processes in the body. By applying a wide range of tools and technologies, this volume will highlight the wide range of applications in education, training and learning both for students and faculty, but also for patient care and education. Therefore, the work presented here can be accessed by a wide range of users from faculty and students involved in the design and development of these processes, by examining the pedagogy around these technologies. Importantly, it presents material, which will be of benefit for the patient, engaging them to become more involved with techniques like physiotherapy.

Get a head start deploying Windows 10--with tips and best practices from experts in the field. This guide shows you how to deploy Windows 10 in an automated way without impacting end users by leveraging System Center Configuration Manager, which is the most used product to deploy Microsoft operating systems in the industry today.

SharePoint 2010 is among the many cutting-edge applications to be found within Microsoft's Office Suite software--our newest 3-panel guide will help you get the most out of this handy tool. The fluff-free content includes important definitions, tips, and step-by-step instructions on how to perform each key function within SharePoint; full-color screen shots are also provided for ease of use.

Myths and Realities

Immersive Office 365

Beginning Microsoft Kinect for Windows SDK 2.0

Augmented Reality and Virtual Reality

Volume 1

Deploying Windows 10

Transform the ways you communicate, create, collaborate, and explore using Microsoft HoloLens About This Book Create immersive augmented reality apps for Microsoft HoloLens from scratch Leverage the powerful HoloLens sensors to interact with real-world motions and gestures and make your app life-like Explore the powerful Unity 5 SDK along with the Windows Unified platform to get the most out of your HoloLens app Who This Book Is For If you are a developer who wants to create augmented reality apps for the Microsoft HoloLens platform, then this is the book for you. Coding experience with C# is assumed. What You Will Learn Design an app for HoloLens that is feasible and attractive to use Add gestures and interact with them Create sounds in the app and place them in a 3D space Use voice generation and voice recognition to make your apps more lifelike Interact with the physical environment to place holograms on top of physical objects Compare HoloLens with the other products and know how to use its strengths Use assets from third parties to enrich our app In Detail HoloLens, Microsoft's innovative augmented reality headset, overlaps holograms into a user's vision of their environment. Your ideas are closer to becoming real when you can create and work with holograms in relation to the world around you. If you are dreaming beyond virtual worlds, beyond screens, beyond pixels, and want to take a big leap in the world of augmented reality, then this is the book you want. Starting off with brainstorming and the design process, you will take your first steps in creating your application for HoloLens. You will learn to add gestures and write an app that

responds to verbal commands before gradually moving on creating sounds in the app and placing them in a 3D space. You will then communicate between devices in the boundaries of the UWP model. Style and approach This book takes a step-by-step, practical, tutorial-style approach where you will dive deep into HoloLens app development. You will work with the API and write your own complex scripts that would interact with the powerful HoloLens sensors and with realistic examples, you will be able to create immersive 3D apps for HoloLens.

Unveil the world of mixed reality with HoloLens About This Book Bring holographic insights to existing line-of-business applications, tools, and workflows Focus on developing end-to-end realistic holographic application. Build interactive model scripts and test them in Unity3D and holographic emulators Who This Book Is For This book is targeted at developers and designers working on mixed-reality developments for complex integrated scenarios using HoloLens. What You Will Learn Interact with holograms using different interaction models Develop your first holographic app Integrate holographic applications with cloud systems Visualize data feeds coming from the cloud through holograms Manage the application distribution of enterprise-enabled HoloLens Integrate HoloLens applications with services deployed on Azure Identify and create 3D Assets and Scenes Use HoloLens to explore the Internet of Things In Detail Do you want to create stunning applications with HoloLens? Are you a developer who is fascinated with Microsoft HoloLens and its capabilities? If so, this is the book for you. This book introduces and demystifies the HoloLens platform and shows you different ways of interaction with computers (mixed-reality). You will start your mixed-reality journey by understanding different types of digital reality. You will learn to build your first holographic app. Also, you will understand holographic application integration possibilities within Line of Business Applications using Azure. Moving ahead, you will create Integrated Solutions using IoT with HoloLens. Gradually you'll learn how to create and deploy apps on a device. You will learn to publish application to the store; if you are an enterprise developer, you will also manage and distribute applications for enterprise-enabled or domain-joined HoloLens. Finally, you will develop an end-to-end realistic holographic app, ranging from scenario identification to sketching, development, deployment, and, finally, production. Style and approach The book is a project-based guide to help you to create some really astonishing mixed-reality applications. It will provide end-to-end solutions and enable you to build stunning applications for HoloLens.

HoloLens BlueprintsPackt Publishing Ltd

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

Develop Microsoft HoloLens Apps Now

Sharepoint 2010

The Power of AR and VR for Business

Augmented Reality, Virtual Reality, and Computer Graphics

Real-Time Rendering, Fourth Edition

Creating Augmented and Virtual Realities

Interactive GPU-based Visualization of Large Dynamic Particle Data

This is the first textbook for architectural drawing with the computer that is based on understanding how digital drawing fundamentally differs from drawing with lead pencils on drafting boards. Cinematics: Architectural Drawing Today demonstrates a cinematically-inspired, cybernetically imaged, architectural drawing system for thinking about architecture as embedded in relationships within the world at large. It opens up the possibility of inventing new ways of building as framing flowing matter in order to live a philosophy of ?newness?. The authors, who have for fifteen years collaborated in teaching architectural students, link the architectural drawing text with research in the expanded field of architecture, which includes neurology, biology, ecology, physics, sustainability and philosophy. The book is written in an accessible and direct tone. Providing both an understanding of the visual perception behind drawing and practical exercises, it is set to become the key text book on the subject at both

undergraduate and graduate level. It is highly illustrated with black and white diagrams and drawings. Praise for Cinematics Sulan Kolatan, Max Fisher Visiting Professor at University of Michigan and Partner in KOL/MAC LLC, and William Mac Donald, Professor and Chair of Graduate Architecture and Urban Design at School of Architecture, Pratt Institute, and Partner in KOL/MAC LLC: 'By progressively positioning their architectural research on "digital drawing" as contemporary cultural practice, Brian Mc Grath and Jean Gardner demonstrate not only a unique lateral intelligence but ? to paraphrase George Lang's declaration that tradition is a conspiracy often used to keep the future from happening-? ensure that the future is happening now. This daringly analytical book precisely and effectively delineates heretofore hidden systems of emergent relations between ideology, methodology, representation, and production.? Joan Ockman, Director of the Temple Hoyne Buell Center for the Study of American Architecture, Graduate School of Architecture, Planning and Preservation, Columbia University: ?With this engaging, mind-expanding, and original guide to contemporary modalities of visualizing and representing architecture, the authors usher the not-yet-initiated into the digital design age.? Mark Robbins, Dean and Professor, Syracuse University School of Architecture ?Cinematics extends the parameters of representation by drawing on aspects of media, film and video. This book is an addition to the lineage of expanding the pictorial field - the Nude Descending a Staircase meeting the battleship Potemkin. The digital drawing methodology produces an explosive shattering of architectural space and reflects the understanding of multiple vantage points and the simultaneity of events in the manner of postmodern literature and filmmakers such as Godard. These drawings have the power to communicate as seductively as the moving image how architecture, space, inhabitation, perception and experience unfold over time. The book offers new ways to analyze space and more importantly new ways of generating it.? Professor Neil Spiller, Professor of Architecture and Digital Theory, Vice Dean, Bartlett School of Architecture, University College London: ?In a world of change, fluctuating points of view, duration and virtuality, it is vital for designers to reassess the representation of their work in new and non-orthogonal ways, This book addresses this most fundamental of design questions and explains various representational protocols for the designer at the cusp of the twenty-first century. A must have book.? Susan S Szenasy, Editor in Chief, Metropolis Magazine: ?A new generation of architects and designers has turned from the drafting table to computer drafting and design, seemingly seamlessly and without much turmoil. But, in reality, a whole new way of thinking about architecture has developed--the computer is changing way designers see the physical world. Cinematics: Architectural Drawing Today discusses the theory and practice of design in the digital age. Kim Tanzer, Association of Collegiate Schools of Architecture (ACSA) President 2007-08; Professor of Architect, University of Florida ?Five hundred years from now architects may look at Cinematics the way today's architects look at Alberti's On Painting--as a critical point of disciplinary redirection. In fact, if architecture is still being built 500 years from now it may well be a result of the cognitive shift McGrath and Gardner propose, asking us to ?lose perspective and find duration.? In the process of laying out a concrete set of design strategies, this book makes original connections between theory and ecology, science and art, technology and touch.? Karen Van Lengen Dean and Edward E Elson Professor of School of Architecture, University of Virginia: ?This is a serious and timely book that proposes new methods of representation for designers working in the digital age. The ?moving drawing system? celebrates the designer as a multidimensional thinker, a networked thinker, a flux conductor in search of new relationships and possibilities for cultural and environmental design. This book, with its stunning and sophisticated visual documentation, is destined to be an essential resource for the next generation of designers.? Michael Weinstock, Academic Head and Master of Technical Studies, Architectural Association School of Architecture: 'The presentation of a drawing system based on a cinematic understanding of the dynamics of architectural space is admirably clear, and the system has the potential to generate new spaces.?'

The first digital turn in architecture changed our ways of making; the second changes our ways of thinking. Almost a generation ago, the early software for computer aided design and manufacturing (CAD/CAM) spawned a style of smooth and curving lines and surfaces that gave visible form to the first digital age, and left an indelible mark on contemporary architecture. But today's digitally intelligent architecture no longer looks that way. In The Second Digital Turn, Mario Carpo explains that this is because the design professions are now coming to terms with a new kind of digital tools they have adopted--no longer tools for making but tools for thinking. In the early 1990s the design professions were the first to intuit and interpret the new technical logic of the digital age: digital mass-customization (the use of digital tools to mass-produce variations at no extra cost) has already changed the way we produce and consume almost everything, and the same technology applied to commerce at large is now heralding a new society without scale--a flat marginal cost society where bigger markets will not make anything cheaper. But today, the unprecedented power of computation also favors a new kind of science where prediction can be based on sheer information retrieval, and form finding by simulation and optimization can replace deduction from mathematical formulas. Designers have been toying with machine thinking and machine learning for some time, and the apparently unfathomable complexity of the physical shapes they are now creating already expresses a new form of artificial intelligence, outside the tradition of modern science and alien to the organic logic of our mind.

This two-volume set LNCS 13305 - 13306 constitutes the thoroughly refereed proceedings of the thematic area Human Interface and the

Management of Information, HIMI 2022, which was held as part of HCI International 2022 and took place virtually during June 26-July 1, 2022. The total of 1271 papers and 275 poster papers included in the 39 HCII 2022 proceedings volumes was carefully reviewed and selected from 5487 submissions. The papers included in the HCII-HIMI volume set were organized in topical sections as follows: Part I: Human-centered design approaches; information design and quality; visual design; visualization and big data; Information, cognition and learning. Part II: Recommender systems; robots and avatars appearance and embodiment; information in virtual and augmented reality; information in complex technological environments.

Réalité virtuelle (RV), réalité augmentée (RA), deux expressions que nous voyons fréquemment citées dans les médias, mais qui restent le plus souvent inconnues de la grande majorité, tant du grand public que du monde professionnel. En effet, la RV et la RA existent depuis longtemps mais restent jusque-là principalement cantonnées au monde de la recherche et au sein de quelques grandes entreprises. L'apparition de nouveaux matériels peu coûteux (visiocasques, capteurs, etc.) laisse entrevoir de nombreuses applications notamment pour le grand public. Réalité virtuelle et réalité augmentée a pour objectif d'aider à mieux comprendre ces technologies, leur fonctionnement et surtout les applications qu'elles proposent aux futurs utilisateurs. Afin d'apprécier les véritables avancées et distinguer les défis complexes qui restent à relever, cet ouvrage définit les concepts fondamentaux, décrit des exemples concrets d'utilisation et plonge ces évolutions récentes dans une dynamique temporelle en rappelant les faits majeurs des dix dernières années et en fournissant quelques pistes prospectives pour le futur.

Lean Project Delivery and Integrated Practices in Modern Construction