

## Babylon Js 3d Engine Based On Webgl Web Audio And Javascript

Gain an in-depth knowledge in immersive web development to create augmented reality (AR) and virtual reality (VR) applications inside web browsers using WebXR API, WebGL, Three.js, and A-Frame. This project-based book will provide the practice and portfolio content to make the most of what the futures of spatial computing and immersive technology have to offer. Beginning with technical analysis of how web browsers function, the book covers programming languages such as WebGL, JavaScript, and HTML, with an eye on a complete understanding of the WebXR lifecycle. You'll then explore how contemporary web browsers work at the code level and see how to set up a local development server and use it with the Visual Studio Code IDE to create 3D animation in the WebGL programming language. With a familiarity of the web-rendering pipeline in place, you'll venture on to WebGL abstractions such as the Three.js JavaScript library and Mozilla's A-Frame XR Framework, which use WebXR to create high-end visual effects. In the final projects of the book, you'll create an augmented reality web session for an Android phone device, and create a VR scene in A-Frame (built on Three.js) to demo essential components of the WebXR API pertaining to user positioning and interaction. Game engines have become common-place for the creation of mixed reality content. However, developers not interested in learning entirely new workflows may be better suited to work within a medium almost universally open to all—the web; AR and VR Using the WebXR API will show you the way. What You'll Learn Master the creation of virtual reality and augmented reality features for web page Prepare to work as an immersive web developer with a portfolio of projects in sought-after technologies Review the fundamentals of writing shaders in WebGL Experience the unity between client, server, and cloud architecture as it applies to location-based AR Who This Book Is For Aspiring immersive web developers and developers already familiar with the fundamentals of web development who want to further explore topics such as spatial computing, computer vision, spatial anchors, and cloud-computing for multi-user social experiences. Create high-performance, visually stunning 3D applications for the Web, using HTML5 and related technologies such as CSS3 and WebGL—the emerging web graphics standard. With this book, you'll learn how to use the tools, frameworks, and libraries for building 3D models and animations, mind-blowing visual effects, and advanced user interaction in both desktop and mobile browsers. In two parts—Foundations and Application Development Techniques—author Tony Parisi provides a thorough grounding in theory and practice for designing everything from a simple 3D product viewer to immersive games and interactive training systems. Ideal for developers with Javascript and HTML experience. Explore HTML5 APIs and related technologies for creating 3D web graphics, including WebGL, Canvas, and CSS Work with the popular JavaScript 3D rendering and animation libraries Three.js and Tween.js Delve into the 3D content creation pipeline, and the modeling and animation tools for creating killer 3D content Look into several game engines and frameworks for building 3D applications, including the author's Vizi framework Create 3D environments with multiple objects and complex interaction, using examples and supporting code Examine the issues involved in building WebGL-based 3D applications for mobile browsers

Today, as in the past, public demonstrations are not only tools to prove, persuade, and promote, but also fundamental forms of social interaction and exchange. YouTube demos of makeup products by famous influencers, demonstrations of strength during street protests, demonstrations of military might in North Korea: public demonstrations are omnipresent in social life. Yet they are often perceived as isolated events, unworthy of systematic examination. In *The Demonstration Society*, Claude Rosental explores the underlying dynamics of what he calls a “demonstration society.” He shows how, both in today's world and historically, public demonstrations constitute not only tools to prove, persuade, and promote, but fundamental forms of interaction and exchange, and, in some cases, attempts to lead the world. Rosental compares demos with other forms of public demonstrations, drawing out both their peculiarities and common features. He analyzes the processes through which demonstrations are conceived and carried out, as well as the skills of their producers. He also compares contemporary demos with historical demonstrations including theaters of machines in the Renaissance, public demonstrations of natural philosophy in the seventeenth century, and demonstrations of the magic lantern in the nineteenth century. Above and beyond the entertainment they sometimes provide, demonstrations are experienced as intense moments that broadly involve alliances, material and symbolic goods, and, more generally, the future of individuals and collectives. Rosental elucidates the many ways in which we live today, as in the past, in a society of demonstration. Understand, train, and be ready to develop 3D Web applications/video games using the Babylon.js framework, even for beginners About This Book Understand the basics of 3D (along with the theory) before practicing Each mini-project provides previous features, alongside the new feature you are learning, to supply the examples Learn from the best of the best, a developer at Microsoft, France Who This Book Is For Babylon.JS Essentials is intended for developers who want to enter the world of 3D development for the Web, or developers who want to add the Babylon.js framework to their skill set. The notion of Oriented Object Programming would be helpful to understand the architecture of the Babylon.js framework. Also, a familiarity with Web development would be useful, to understand the principles used. What You Will Learn Understand what the TypeScript language is and its benefits (compared to JavaScript) in large projects such as 3D engines Learn the basics of 3D using Babylon.js without too much theory but with an emphasis on practice, for a better understanding of the architecture Know the usage of Material—a fundamental principle of 3D engines in Babylon.js—and then customize the appearance of 3D objects Integrate collisions and physics in gameplay. Understand the notion of impostor for physics simulation Manage, create, and spatialize audio tracks in 3D scenes Go further with the Babylon.js framework to create actions on events Create rendering effects provided by the Babylon.js framework, such as post-processes In Detail Are you familiar with HTML5? Do you want to build exciting games and Web applications? Then explore the exciting world of game and Web development with one of the best frameworks out there: Babylon.JS. Starting from the beginning, the book introduces the required basics for 3D development and the knowledge you need to use the Babylon.js framework. It focuses on the simplicity provided by Babylon.js and uses a combination of theory and practice. All the chapters are provided with example files ready to run; each example file provides the previously learned features of the framework. Finally, developers will be ready to easily understand new features added to the framework in the future. Style and approach The book is a comprehensive guide packed with ready-to-run examples with a mix of theory and practice.

