Chapter 1 : Mikael Bourges-Sevenier (Author of Core Web3d [With CDROM])

In MPEG-4 Jump-Start, two leaders of the Internet multimedia community introduce the MPEG-4 standard: its key concepts, capabilities, applications, requirements, and limitations. Aaron E. Walsh and Mikael Bourges-Sevenier cover what you need to know to start developing MPEG-4 players and content today, including.

Facial and Body Animation Profiles. This book was designed to enable professional programmers to jump directly into the new and exciting world of MPEG-4 development. As a collaborative effort by a number of designers and architects responsible for the MPEG-4 international standard, the book you hold in your hands is rich with details and insights from expert programmers whose careers revolve around MPEG-4 and related technologies. We hope you enjoy this book as much as we enjoyed writing it; welcome to our growing community of MPEG-4 developers! Most of us had spent many years improving and refining the algorithms in the standard. Before it could be approved as a formal standard, we had to write reference software to validate not only the decoding of the bitstreams but also the authoring tools needed to create them. The standard was mature enough that we were able to write a book that explains our experiences to managers, developers, and content authors, with the aim of helping them create MPEG-4 content and applications. Apart from the introduction Chapter 1 , the conclusion Chapter 12 , and the appendixes, the conceptual organization of the book follows the workflow of creating MPEG-4 contents. MPEG-4 content is first created using an authoring tool. At a terminal, the various streams are presented in time and composed before being rendered. At the rendering stage, a user can interact with the content. You will also learn how to send commands to modify the scene graph at any time. Even if a straight binary representation of the scene graph provides a substantial compression ratio, you will learn how to further reduce its size using quantization. We review how animations can be created in BIFS, and you will learn how to make synthetic streamed animations i. We reveal in this chapter that 2D mesh animation uses a dedicated synthetic animation stream. Facial animations use other specialized compression algorithms to reduce the amount of data needed to animate faces. Facial animation parameters are model-independent, so they can be used to animate models different from the ones used to generate the bitstream. Body animation extends facial animation with a dedicated framework. A generic humanoid is defined with special animation points and joints. Specific compression methods have been developed for them. As many MPEG-4 compression algorithms use arithmetic coding, we give the code of a generic arithmetic coder. BIFS uses node coding tables to encode the node of the scene graph. We explain how they are built. MPEG-4 can be thought of as a large suite of multimedia tools. Although extensive, not all of the tools offered by MPEG-4 are necessary for every application. To help developers decide which tools they should use for a given application, we introduce the notion of MPEG-4 profiles that have been defined for a set of applications and different levels upper complexity bounds that have been established. We have chosen to follow the standard and to give the methods to decode the bitstreams. We indicate considerations for writing the encoders in general; there exist many ways to encode, and many tricks and optimizations are possible. However, for interoperability purposes, there should be only one way to interpret the bitstreams. In many cases, writing the encoder is straightforward from the methods given. For updates, tools, and node coding tables, please visit the companion Web site established for this book http: An introduction to MPEG-4 audio. Audio composition and presentation. Enhanced modeling of 3D sound.

DOWNLOAD PDF MPEG-4 JUMP-START

MPEG-4 Jump-Start details the bitstream representation of many MPEG-4 tools using the Syntactic Description Language. We have chosen to follow the standard and to give the methods to decode the bitstreams.

This book is for every developer and technical decision-maker. The XML-based textual format for storing MPEG-4 contents and authoring commands MPEG-4 offers unprecedented opportunities for delivering media in any networked communications environmentâ€"Internet, Web, broadcast, satellite, or even wireless. Every Jump-Start book is: MPEG-4 in a Nutshell. Next Generation of Portals. Multimedia Conferencing and Communities. Major Features and Related Jargon. Objects, Scenes, and Worlds. Shapes, Geometry, and Appearance. Moving, Scaling, and Rotating. A Note on Coordinate Systems. New Scene Features and New Nodes. Face and Body Animation Nodes. Stream Synchronization and Control Nodes. Overview of the SDL Language. Structures Used by the Decoder. Why We Need Quantization. A Crash Course on Quantization. Local and Global QuantizationParameter Nodes. Quantizers 1 to 8. Quantizing Normals and Rotations 9, Quantizing Object Size 11, Linear Scalar Quantizers 13, FAP Estimation from Video. Connecting the Head to an Animated Body. Implications of FAP Normalization. Real Faces vs Animated Characters. Decode Frame Rate and Skip Frames. Decode Viseme and Expression. Face Model Predictability Hierarchy. Body Modeling and Animation. Geometry and Properties Coding. Extensible Media xMedia Objects.

Chapter 3 : MPEG-4 Jump-Start - CORE

Save your time and money. This book is out of date and only contains a portion of the information you seek about MPEG The remainder of the information you're looking for (i.e. Video compression, audio compression) is in "More MPEG-4 Jump-Start" according to this book.

MPEG-4 in a Nutshell. Next Generation of Portals. Multimedia Conferencing and Communities. Major Features and Related Jargon. Objects, Scenes, and Worlds. Shapes, Geometry, and Appearance. Moving, Scaling, and Rotating. A Note on Coordinate Systems. New Scene Features and New Nodes. Face and Body Animation Nodes. Stream Synchronization and Control Nodes. Overview of the SDL Language. Structures Used by the Decoder. Why We Need Quantization. A Crash Course on Quantization. Local and Global QuantizationParameter Nodes. Quantizers 1 to 8. Quantizing Normals and Rotations 9, Quantizing Object Size 11, Linear Scalar Quantizers 13, FAP Estimation from Video. Connecting the Head to an Animated Body. Implications of FAP Normalization. Real Faces vs Animated Characters. Decode Frame Rate and Skip Frames. Decode Viseme and Expression. Face Model Predictability Hierarchy. Body Modeling and Animation. Geometry and Properties Coding. Extensible Media xMedia Objects. Facial and Body Animation Profiles. With expertise in 2D, 3D, and multimedia technologies, he is actively involved in several areas of MPEG-4 development.

Chapter 4 : Papers and books on MPEG | MPEG

MPEG-4 Jump Start April 22nd, by Multimedia Mike Save for the yeoman's work that our little community does on the MultimediaWiki, it's generally quite difficult to come by solid technical data on specific multimedia codecs.

Digging into Java 3D. Java 3D in Action. Java 3D Design Goals. Java 3D versus Modeling File Formats. Exploring Key Java 3D Features. Scene Graph Programming Model. Java 3D Rendering Model. Convenience and Utility Classes. Java 3D and the Java Platform. Java and Java 3D. Stepping into a Virtual Universe. The VirtualUniverse and Locale. Exploring the HelloUniverse Scene Graph. Working with the Scene Graph. Making Changes to the Scene Graph. Other Scene Graph Operations. Recipe for a Java 3D Program. Creating and Loading Geometry. Loading Geometry from Files. Loading Other File Formats. Java 3D Fly Through. Environment Nodes in the Java 3D Explorer. Transformation, Viewing, and Picking. Transformations with Java 3D Explorer. Controlling Transforms with Mouse Behaviors. Finding a Good Vantage Point. Moving the ViewPlatform with the Mouse. Other Uses for Picking. A respected expert on graphics performance tuning for large-scale applications, he has worked on a number of the largest Java 3D projects in existence. Master interactive 3D development for the desktop and the Web-now! Java 3D Jump-Start is your concise introduction to the 3D technology that delivers the most power with the least coding. Every Jump-Start book is:

Note: Citations are based on reference standards. However, formatting rules can vary widely between applications and fields of interest or study. The specific requirements or preferences of your reviewing publisher, classroom teacher, institution or organization should be applied.

MPEG-4 in a Nutshell. Next Generation of Portals. Multimedia Conferencing and Communities. Major Features and Related Jargon. Objects, Scenes, and Worlds. Shapes, Geometry, and Appearance. Moving, Scaling, and Rotating. A Note on Coordinate Systems. New Scene Features and New Nodes. Face and Body Animation Nodes. Stream Synchronization and Control Nodes. Overview of the SDL Language. Structures Used by the Decoder. Why We Need Quantization. A Crash Course on Quantization. Local and Global QuantizationParameter Nodes. Quantizers 1 to 8. Quantizing Normals and Rotations 9, Quantizing Object Size 11, Linear Scalar Quantizers 13, FAP Estimation from Video. Connecting the Head to an Animated Body. Implications of FAP Normalization. Real Faces vs Animated Characters. Decode Frame Rate and Skip Frames. Decode Viseme and Expression. Face Model Predictability Hierarchy. Body Modeling and Animation. Geometry and Properties Coding. This book is for every developer and technical decision-maker. The XML-based textual format for storing MPEG-4 contents and authoring commands MPEG-4 offers unprecedented opportunities for delivering media in any networked communications environment--Internet, Web, broadcast, satellite, or even wireless. Every Jump-Start book is:

Chapter 6 : MPEG-4 Jump-Start : Mikael Bourges-Sevenier :

From the Book:PrefaceWelcome to MPEG-4 Jump-Start. This book was designed to enable professional programmers to jump directly into the new and exciting world of MPEG-4 development.

Walsh is chairman of Mantis Development Corp. MPEG-4 can be thought of as a toolkit for developing network-oriented multimedia applications based on any combination of still imagery, audio, video, 2D, and 3D content. Developed by the Moving Picture Experts Group http: After nearly a decade of development, MPEG-4 http: The first generation of MPEG-4 content servers, authoring tools, and players are available, while a variety of emerging products are poised to enter the fray. MPEG-4 introduces enhancements not supported by VRML, however, such as streaming, binary compression, content synchronization, intellectual property management and protection, and enhanced audio, video, and 2D capabilities. MPEG-4 also supports a number of mechanisms that enable interactive content. Programmatic control over scenes using Java is one such mechanism, and the focus of this article. These programs can be stored locally on the terminal or they can be embedded in the content itself, in which case the programs are downloaded along with the content although in a separate elementary stream. Upon arriving at the terminal, an MPEG-J program is processed by the Application Engine, through which it gains access to terminal resources and data as well as fundamental Java packages such as java. For instance, a low-priority video object such as a picture-in-a-picture shown during a newscast can be immediately replaced with a still-texture object when resources are low rather than degrading the entire scene. Likewise, a single piece of content such as a broadcast music video can be seamlessly scaled across a variety of playback devices: Low-power devices such as PDAs and outdated PCs might receive lower quality audio and video, while higher powered devices can receive higher quality content. This interface is found in the org. Listings One and Two , for example, import this entire package using the "wildcard" asterisk character: In this respect, MPEGlets can be compared to applets. Although applets have the option of overriding any of the lifecycle methods defined in the java. The method signatures for these required methods are: Any operations necessary to perform before the MPEGlet runs go here. This method is always called before the MPEGlet is executed as a separate thread via the run method. Any operations that are necessary to perform before the MPEGlet is stopped go here. This method is always called before destroy and can also be called anytime execution of the MPEGlet must cease. Any cleanup operations necessary to perform before the MPEGlet is destroyed go here.

Chapter 7 : MPEG-4 Jump Start | Breaking Eggs And Making Omelettes

Welcome to MPEG-4 Jump-Start. This book was designed to enable professional programmers to jump directly into the new and exciting world of MPEG-4 development. This book was designed to enable professional programmers to jump directly into the new and exciting world of MPEG-4 development.

Chapter 8 : The MPEG-4 Java API & MPEGlets | Dr Dobb's

MPEG-4 Jump-Start by Aaron E. Walsh, Mikael Bourges-Sevenier and a great selection of similar Used, New and Collectible Books available now at racedaydvl.com

Chapter 9 : Pearson - Java 3D API Jump-Start - Aaron E. Walsh & Doug Gehringer

In MPEG-4 Jump-Start, two leaders of the Internet multimedia community introduce every aspect of the MPEG-4 standard: its fundamental concepts, capabilities, applications, requirements, limitations, and more.