Autodesk[®] In Games

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Autodesk digital entertainment creation technology empowers game artists and developers with middleware solutions and content creation tools for building innovative game experiences.

From 3D sculpting and advanced rigging tools to easy-to-integrate middleware libraries, Autodesk gives you what you need to realize your vision for the game.



Far Cry 2. Image courtesy of Ubisoft.

Far Cry 2 provides a truly open-world experience in a dynamic environment that includes a day and night cycle, destructible vegetation, and realistic fire propagation. The speed and flexibility of 3ds Max was crucial to the unconventional pipeline that we needed to populate this huge game expanse with highly detailed art assets.

Creative Collaboration

Cutting-Edge Game Middleware

Autodesk is a maker of world-renowned game middleware products. These high-performance technologies are innovative, easy to integrate, flexible and backed by solid support. When combined with Autodesk art creation tools, the result is more integrated systems that enable development teams to create amazing games more efficiently than ever.

Powerful Art Creation Tools

Autodesk provides game art teams with a broad set of tools for creating 3D characters, props, environments and animation for immersive games. Autodesk also makes innovative software solutions for solving very specific challenges in game development: challenges such as facial animation, motion data editing, and normal map baking.

Intelligent Assets

Interoperability Technology

Integrated into many Autodesk Media & Entertainment applications is support for the Autodesk[®] FBX[®] technology, an open framework for 3D data transfer that creates a high-level of interoperability among Autodesk products as well as third-party applications.

—Alexandre Amancio Art Director <u>Ubis</u>oft

Code You Can Build On

Use Autodesk Kynapse and Autodesk HumanIK middleware to create innovative, new gaming experiences.



Warhammer Online: Age of Reckoning. Image courstesy of Mythic Entertainment, an EA Studio.



Resistance 2 is a trademark of Sony Computer Entertainment America Inc. Developed by Insomniac Games. © 2008 Sony Computer Entertainment America Inc.

The huge world of Warhammer meant we needed a very robust pathfinding solution. Autodesk Kynapse gave us an algorithmic exploration solution that enabled our AI driven actors to path with the same constraints and freedom as players.

—Matt Shaw Chief Technology Officer Mythic Entertainment, an EA Studio

With Kynapse and HumanIK, programmers can create exciting gameplay faster. These high-performance, flexible middleware technologies, optimized for multiple game platforms such as Sony PLAYSTATION®3, Microsoft® Xbox 360®, Nintendo Wii™, and the PC have been production proven on numerous AAA games.

As a leading artificial intelligence (AI) solution, Kynapse middleware is used to create believable, immersive, in-game Non Player Characters (NPCs). Kynapse streamlines the process of creating top-quality games with its wealth of advanced, runtime technologies along with efficient development tools and an architecture designed for easy integration and customization.

The popular HumanIK animation middleware enhances your animation system by enabling your player characters to interact and procedurally adapt to game environments. The result is fewer gameplay constraints; so that your game comes to life through 3D character animation experiences that are more believable and immersive.

Because of their widespread adoption, it's not difficult to find programmers experienced in working with Kynapse and HumanIK. And, you can rest assured that Autodesk middleware is backed by world-class support and services.

The Data Flow

Use Autodesk FBX interoperability technology to build highly efficient, scalable workflows.

3ds Max, Maya and MotionBuilder allowed us to iterate quickly and create content in record time. It also enabled us to go beyond anything we've done before. Without Autodesk's software, combined with our own proprietary Unreal Engine 3 toolset, we would have been hard-pressed to finish the game in such a short development cycle.

—Chris Perna Art Director Epic Games, Inc.



Gears of War 2. Image courtesy of Epic Games, Inc.

As a platform-independent 3D data framework, FBX supports high-fidelity 3D asset exchange that removes barriers to software compatibility. It is a widely used and supported data standard that enables you to move files between FBX-enabled applications: including Autodesk applications, as well as in-house software that integrates FBX. This leaves you, and your facility, free to build the most efficient workflows for your projects using the best software products for the job.

There is also a free C++ FBX software developer kit* (SDK) that is easily picked up by programmers. Learn more at **www.autodesk.com/fbx.**

*Free products are subject to the terms and conditions of the end-user license agreement that accompanies the software.



Warhammer Online: Age of Reckoning. Image courstesy of Mythic Entertainment, an EA Studio.

Best-of-Breed Creative Tools

Equip artists with the best tools for creative game content creation.



Fable II. Image courtesy of Lionhead Studios.

Relied on by game studios for creating 3D characters, props, environments and animation for games, Autodesk tools are dependable solutions for bringing your creative vision to life.

Full Game Art Creation Software

At Autodesk, we understand that personal preference is important to artists. That's why we are continuing to develop the unique qualities of the three most popular full-feature 3D animation packages, Autodesk 3ds Max, Autodesk Maya and Autodesk Softimage. Each of these technologies excels at particular aspects of the game art creation process—either because of the breadth of its creative tools, the depth of those tools or the efficiency of its workflow.

Character Animation Solutions

For certain types of character animation, MotionBuilder is your best choice. It uses FBX as its native file format so that character data flows between it and the other major game art applications efficiently. And because HumanIK is the runtime component of MotionBuilder, these two work together seamlessly. In fact, they're a perfect combination for mocap-based characters, character performances you want to edit in realtime, and character motion that will be applied to a large number of unique characters. If the story calls for expression of strong character emotion, then top-quality facial animation is probably in order. A Face Robot-rigged and animated head, which can be quickly brought into either Maya or Softimage, is the ideal solution.

High-End Modelers

When it comes to digital sculpting and texture painting, Mudbox interoperates with Maya and 3ds Max, offering intelligent matching of Maya and 3ds Max normal and displacement maps. Its scalable architecture also means it's a good investment for those creating high-polygon models.

If photorealism is what you're after, you'll want to look into ImageModeler and Stitcher Unlimited. With its powerful image-based modeling capabilities, ImageModeler enables you to create realistic, photo-textured 3D models and scenes. Likewise, Stitcher Unlimited can be used to quickly create convincing, high-resolution, photo-based matte paintings. Support in both products for FBX makes it easy to incorporate your new backdrop or model into your scene. Autodesk Softimage has excellent modeling tools, together with extremely flexible animation tools, and our engineers were able to use it quickly and easily. The software made for a very robust pipeline, and saved us a lot of time and assets.

lan Lovett
Technical Art Director
Lionhead Studios

The Autodesk Advantage

Autodesk middleware solutions and content creation tools help you focus on the game.

Autodesk[®] Kynapse[®] middleware is a leading artificial intelligence (AI) solution for game development and real-time simulations. Bring your games to life with characters that can find their way through complex 3D environments and even coordinate with teams. Used by over 80 AAA game titles, Kynapse is a proven solution for putting the brain in your game. Learn more at www.autodesk.com/kynapse.

Autodesk[®] HumanIK[®] animation middleware is a run-time solution for creating believable, interactive character animation for games. HumanIK features full-body inverse kinematics and real-time retargeting, so that characters can interact and procedurally adapt to game environments. Learn more at www.autodesk.com/humanik.

Autodesk® 3ds Max® software is a powerful, full-featured 3D modeling, animation, and rendering package—and a favorite among character animators and game artists. It offers a ready-to-use, template-based character rigging system, robust modeling and texturing toolsets, and an extensive range of third party plug-ins. Learn more at www.autodesk.com/3dsmax.

Autodesk[®] Maya[®] software is a powerful 3D modeling, animation, and rendering application. Based on an open architecture, it provides a high level of control over game art workflows and pipelines. Maya offers a comprehensive range of character animation editing tools; a full suite of advanced modeling and texturing tools; Maya Embedded Language (MEL) and Python[®] scripting; and an extensive application programming interface (API) for customization. Learn more at www.autodesk.com/maya.

Autodesk® Softimage® software is a 3D software for game production. Built on a high-performance, extensible architecture it provides 3D game artists with a comprehensive set of modeling, texturing and animation tools. Softimage features the Interactive Creative Environment (ICE), a platform for building effects and tools visually using a node-based paradigm. Learn more at www.autodesk.com/softimage.

Autodesk[®] MotionBuilder[®] software is a powerful 3D character animation software. With its real-time environment, rigging, simulation, and motion-capture (mocap) data editing tools, the MotionBuilder software is the perfect complement to 3ds Max, Maya, and Softimage. Its integration with HumanIK, means that what you see in MotionBuilder, is what you get in the game. Learn more at www.autodesk.com/motionbuilder.

Autodesk[®] Face Robot[®] technology and service solution enables artists to rig and animate lifelike 3D faces quickly and easily. Using Face Robot, artists can concentrate on emotion, expression, and memorable performances. Learn more at www.autodesk.com/facerobot.



WET. Image courtesy of A2M.



Rock Band 2. Image courstesy of Harmonix Music Systems, Inc.

Autodesk[®] Mudbox[™] high-performance digital sculpting and texture painting software enables 3D modelers and texture artists to focus on the art: not the tools. It offers a highly intuitive user interface; organic, brush-based sculpting tools; and a production-focused texture paint workflow. Learn more at www.autodesk.com/mudbox.

Autodesk[®] ImageModeler[™] software offers game artists an easy-to-use toolset for creating photorealistic 3D models with real-world accuracy from digital pictures. Learn more at www.autodesk.com/imagemodeler.

Autodesk[®] Stitcher[™] Unlimited photo stitching software gives game artists easy-to-use tools for creating high-quality panoramas such as seamless matte paintings. Learn more at www.autodesk.com/stitcher.



Demigod. Image courtesy of Gas Powered Games.

With Autodesk HumanIK, I was able to push the boundaries of next-generation gameplay on the Assassin's Creed franchise by procedurally adapting characters to their dynamic environment at run-time.

Eric Bibeau
Animation Programmer
Ubisoft

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