



**SHIN**  
SOFTWARE

# **REAL-TIME 3D**

*A game changer for your business*



# QUICK OVERVIEW



Real-time 3D is a complex and multifaceted concept primarily related to computer graphics and interactive multimedia. In a broader sense, it refers to the real-time rendering of three-dimensional objects and environments on a computer screen. These objects and environments are composed of polygons, often in the form of triangles, which are processed by the computer's graphical processing unit (GPU) to create the illusion of depth and perspective. Each polygon is textured, lit, and shaded to provide a sense of realism.

The term "real-time" is used to indicate that these processes are happening almost instantaneously, allowing the user to interact with the 3D environment without perceptible lag. This concept is vital in many digital areas, including video gaming, virtual and augmented reality, simulation, and other interactive applications. The

benchmark for "real-time" is typically defined as rendering at least 30 frames per second, though 60 frames per second is often considered the gold standard for smoother transitions and animations.

Despite the challenges associated with the intensive computational demands, real-time 3D technology continues to advance, spurred by continuous improvements in hardware capabilities, software techniques, and increased understanding of 3D modeling and rendering algorithms. It has become an integral part of many industries, from entertainment and education to medicine and engineering, revolutionizing the way we visualize, interact with, and understand the virtual world around us.



# VISUAL EXPERIENCE



Real-time 3D technology can significantly enhance the visual experience in several ways. It provides a highly immersive, interactive, and dynamic visualization medium that can be transformative in various fields such as gaming, film, education, architecture, and medical imaging.

Here are some ways in which real-time 3D technology enhances visual experiences:

**Interactivity:** Real-time 3D technology allows users to interact with 3D environments or objects in real-time. In games or virtual reality experiences, for instance, users can move around, manipulate objects, and see the effects of their actions immediately. This level of interactivity increases engagement and creates a more immersive and realistic experience.

**Dynamic Updates:** Unlike static 3D renderings, real-time 3D visualizations can be updated dynamically, which means that changes can be made and viewed instantaneously. This is particularly useful in simulations or

modeling situations where you need to see the impact of changes immediately. For example, architects or urban planners could use this feature to visualize how changes to a design will affect the overall structure or landscape.

**Immersiveness:** Real-time 3D technology can create highly immersive experiences, especially when combined with other technologies like virtual reality (VR) or augmented reality (AR). In VR, for example, users can “enter” a fully 3D, 360-degree environment and explore it from all angles, making it feel as if they’re really there.

**Detail and Realism:** Real-time 3D graphics have advanced to the point where they can produce incredibly detailed and realistic visuals. Advanced rendering techniques like ray tracing, physical-based rendering, and real-time lighting and shadows can create visuals that closely mimic real-world environments. This realism enhances the visual experience by making digital content more relatable and believable.

# FAST PROTOTYPING

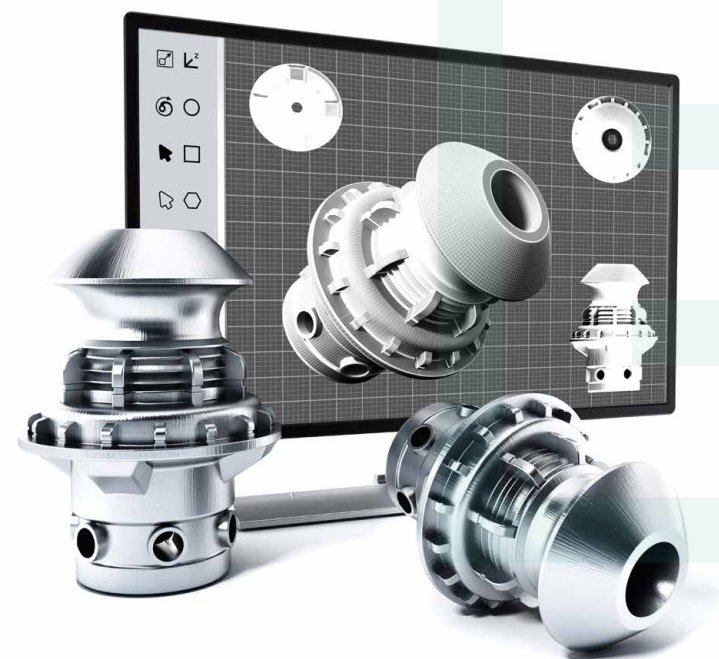


Real-time 3D technology is revolutionizing design and prototyping across a range of industries, from architecture and industrial design to automotive and aerospace. This technology's ability to rapidly create, test, and refine digital prototypes in a virtual environment before creating physical prototypes dramatically reduces the time and cost associated with design changes.

The immediate visualization and feedback allow designers to make quick iterations, while the collaborative aspect of the technology enables designers worldwide to work simultaneously on the same model.

Furthermore, real-time 3D technology aids in identifying potential design issues early on, allows for a more interactive presentation of designs to clients and stakeholders, and integrates well with other emerging technologies like virtual reality, augmented reality, and artificial intelligence.

Notably, the technology's capacity for design validation and testing helps detect potential flaws before manufacturing, saving significant resources. Also, real-time 3D models can serve as effective training tools for assembly workers or as instructional aids for end-users. Consequently, the adoption of real-time 3D technology can accelerate the product development cycle, reduce costs, enhance design quality, and provide a competitive advantage to companies.







# BETTER TRAINING

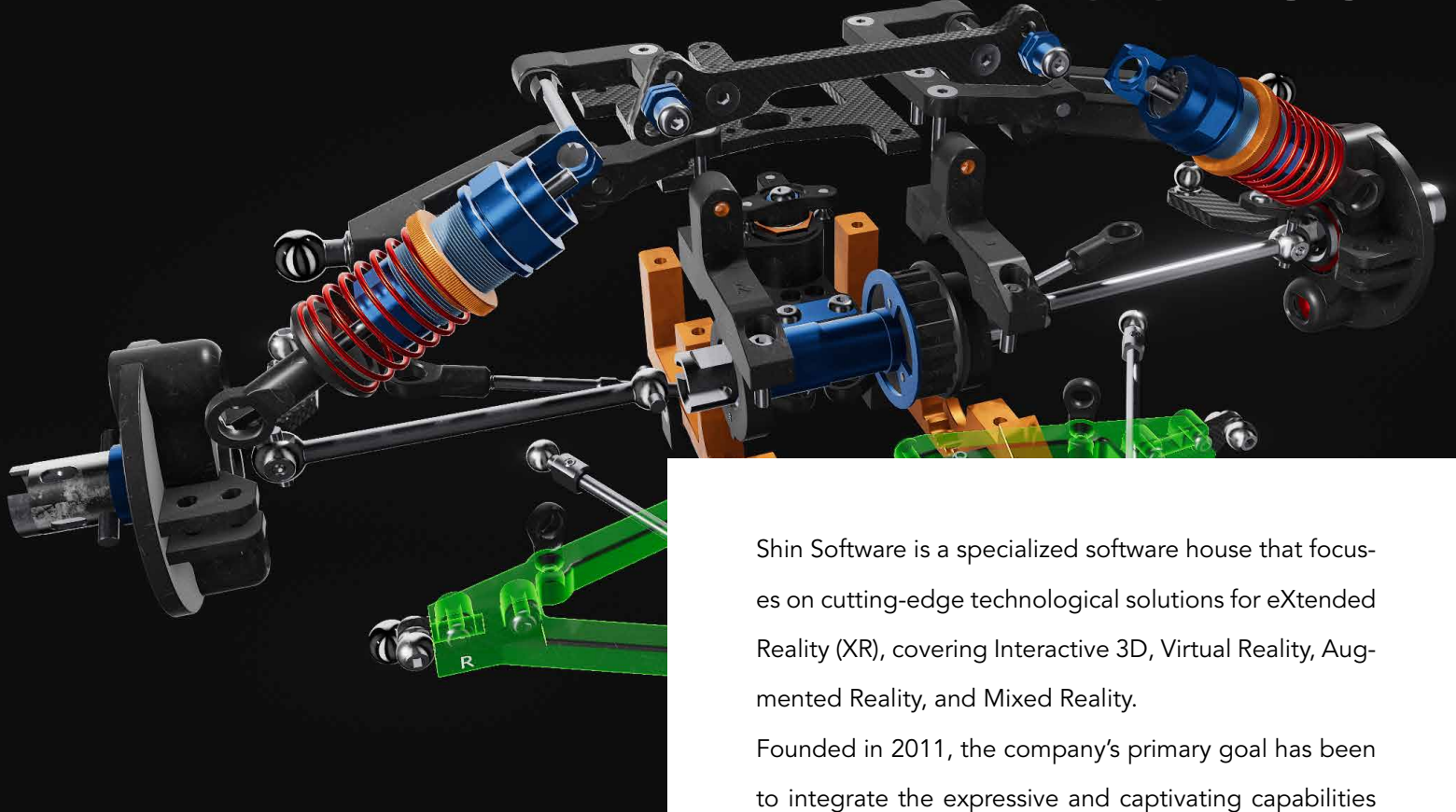
Real-time 3D technology has revolutionized the landscape of training simulations, ushering in a new era of immersive and realistic learning experiences. In stark contrast to traditional training methods that rely on static presentations or theoretical exercises, real-time 3D simulations provide a dynamic and interactive platform that offers trainees a heightened sense of presence and engagement. These simulations create virtual environments that respond instantaneously to user interactions, replicating complex scenarios with stunning realism and fidelity.

The realism offered by real-time 3D simulations goes beyond visual fidelity. These simulations also incorporate accurate auditory feedback and responsive haptic interactions, further enhancing the immersive experience. Whether it's the sound of machinery operating or the

tactile sensation of manipulating objects, trainees can effectively learn how to navigate intricate systems and handle delicate tasks through authentic multisensory feedback.

The applications of real-time 3D technology span across numerous industries, from aviation and medicine to military training and beyond. For instance, in the field of healthcare, medical practitioners can gain hands-on experience in performing complex surgeries or handling medical emergencies in a virtual environment. This not only reduces the risk to patients during training but also enhances the confidence and competence of medical professionals when dealing with real-world cases.

# ABOUT US



Shin Software is a specialized software house that focuses on cutting-edge technological solutions for eXtended Reality (XR), covering Interactive 3D, Virtual Reality, Augmented Reality, and Mixed Reality.

Founded in 2011, the company's primary goal has been to integrate the expressive and captivating capabilities of 3D graphics from the gaming industry into various business processes.

From the very beginning, the team embraced the concept of developing a cloud-native solution to harness the scalability and flexibility advantages provided by the cloud. Choosing Amazon Web Services (AWS) as their ideal partner, Shin Software was recognized as an Advanced Technology Partner, thanks to their robust proprietary platform, SHOWin3D.

AWS conducted a comprehensive technological evaluation and honored Shin Software with the prestigious Industrial Software Competency, solidifying the company's position among the top 30 global providers of industrial software solutions



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