



Freedom to Innovate

Enable creative design anywhere and on any device with SOLIDWORKS

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Creating technology to help you turn your vision into reality

Technological innovations have enabled the design community to expand the scope of possibility and unleash their creativity. As the world is changing rapidly, designers must be able to seize the spirit of the times and imagine the future whenever inspiration comes. To do this, they need incredibly powerful tools to **deliver complex solutions with reliability and precision** that can be used anywhere, anytime, on any device.

In addition, in a highly interconnected globalized world where design teams can work together across the globe, they need secure and compatible collaboration tools to work together quickly and efficiently. Finally, today's designers no longer deliver static 3D creations, but model complete experiences in which scalability, synchronicity and accessibility are essential.

To meet the needs of today's mobile creative designers, we have built powerful applications that **enable creativity anytime, anywhere on any device.**

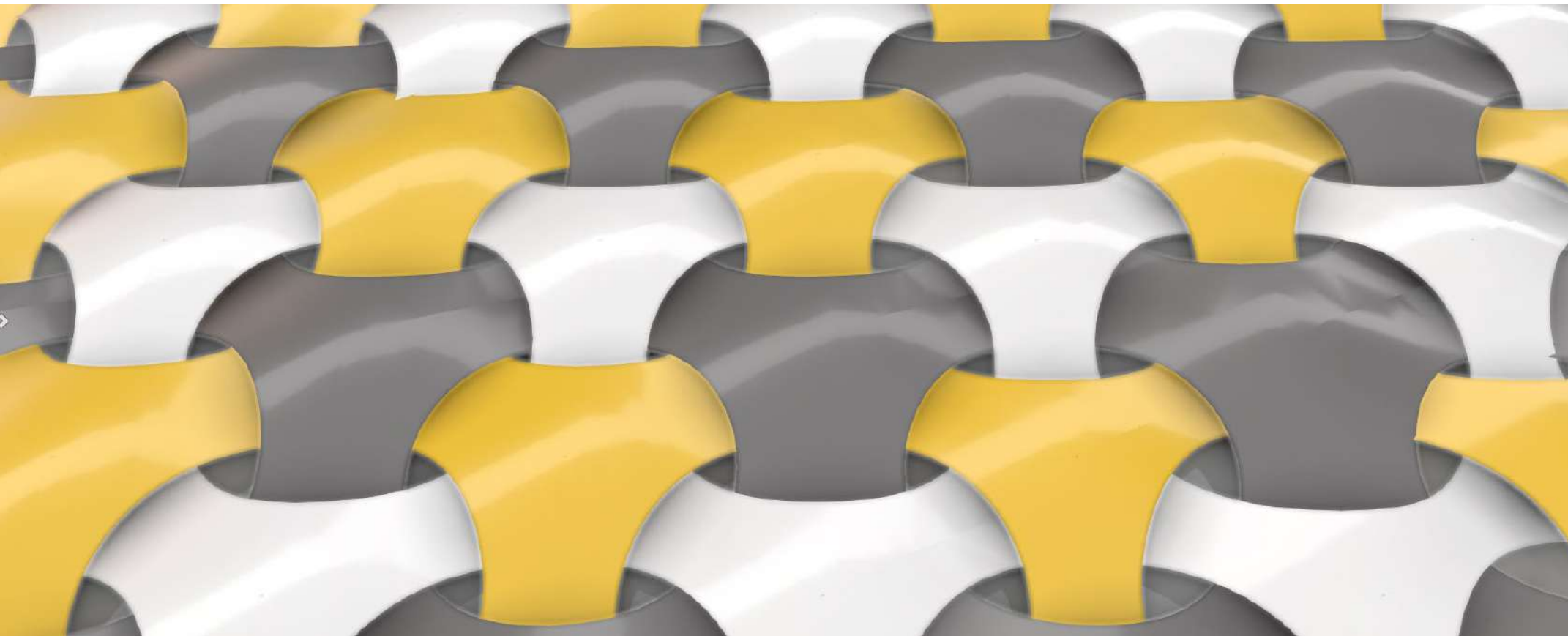
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Scalability: We make automation available to a wider audience, with smart tools to empower all designers – beginners and experts alike – to generate complex geometries, quickly explore more patterns and potential design solutions, and capture and reuse logic as needed.

Synchronicity: We provide digital continuity to enable design and construction teams to iterate efficiently, eliminate rework and preserve in-depth project knowledge.

Accessibility: We offer web-based modeling applications for ease of use and deployment, and to improve usability across multiple devices. Cloud collaboration improves communication, transparency and trust.

Parametric modeling, algorithmic generative design, accessible design automation, digital continuity and more. **Discover the 3DEXPERIENCE® Works Design Roles and enter a new era of design.** Inspired by nature, but not limited by it.



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DESIGN ON THE GO WITH 3DEXPERIENCE WORKS DESIGN ROLES

3D Creator, 3D Sculptor and 3D Pattern Shape Creator are online CAD roles in the **3DEXPERIENCE** Works portfolio that are specifically conceived to meet the expectations of today's designers with total flexibility, unmatched creativity, automation and digital continuity.

Whether you are an existing user of CATIA®, SOLIDWORKS® or other CAD software, or simply a designer looking for new ideas, you can easily get started with the **3DEXPERIENCE** Works portfolio of cloud-based 3D modeling applications. With these applications, designers can capitalize on each of their creative moments to co-create wherever and whenever inspiration strikes. The applications require no installation and can be opened from a simple web browser, mobile device or tablet to design from anywhere!

3D Sculptor features xShape, an app to quickly create and explore organic shapes using a digital clay modeling approach based on Subdivision (Sub-D) Surface Technology. 3D Creator uses the xDesign application to provide users with an innovative and consistent 3D modeling workflow through a unique integration of feature-based solid modeling and assembly capabilities. Finally, 3D Pattern Shape Creator uses the xGenerative Design application to enable the rapid generation of intricate irregular shapes and patterns inspired from nature for style exploration.

Because these are cloud-based solutions, you always work with the latest version of the application on all your devices, with nothing to install or configure. They ensure secure communication and collaboration with ecosystem stakeholders through safe and secure communities, full control over design and file access, sharing, lightweight visualization and product review.

Let's take a closer look.

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3D SCULPTOR

Create organic shapes and surfaces using subdivision modeling technology anywhere and anytime

3D Sculptor is a browser-based 3D subdivision modeling solution that allows industrial designers, engineers and artists to create models with ergonomic or stylized organic shapes, faster and easier than with traditional parametric tools. Powered by the **3DEXPERIENCE** cloud, it complements the parametric workflows of 3D Creator but also SOLIDWORKS 3D CAD software with intuitive subdivision modeling and efficient design data exchange. So if you're a SOLIDWORKS user looking to quickly create smooth, organic shapes, 3D Sculptor may be a good fit for you.

Featuring the xShape application, 3D Sculptor has advanced subdivision (Sub-D) surface modeling capabilities, and these surfaces are covered with an easily manipulated polygon mesh. Plus, it works seamlessly with SOLIDWORKS 3D CAD as well as all the apps on the **3DEXPERIENCE** platform, so a change in xShape can propagate throughout SOLIDWORKS.

Sub-D modeling is freeform. Making changes is as easy as pushing, pulling and creasing the shape. Similar to sculpting, you start with a digital hunk of clay and then push and pull it to get the shape you desire. There is a C2 level of curvature continuity across all surfaces by default, which creates a very high quality solid geometry that can be used in any downstream process you can imagine.



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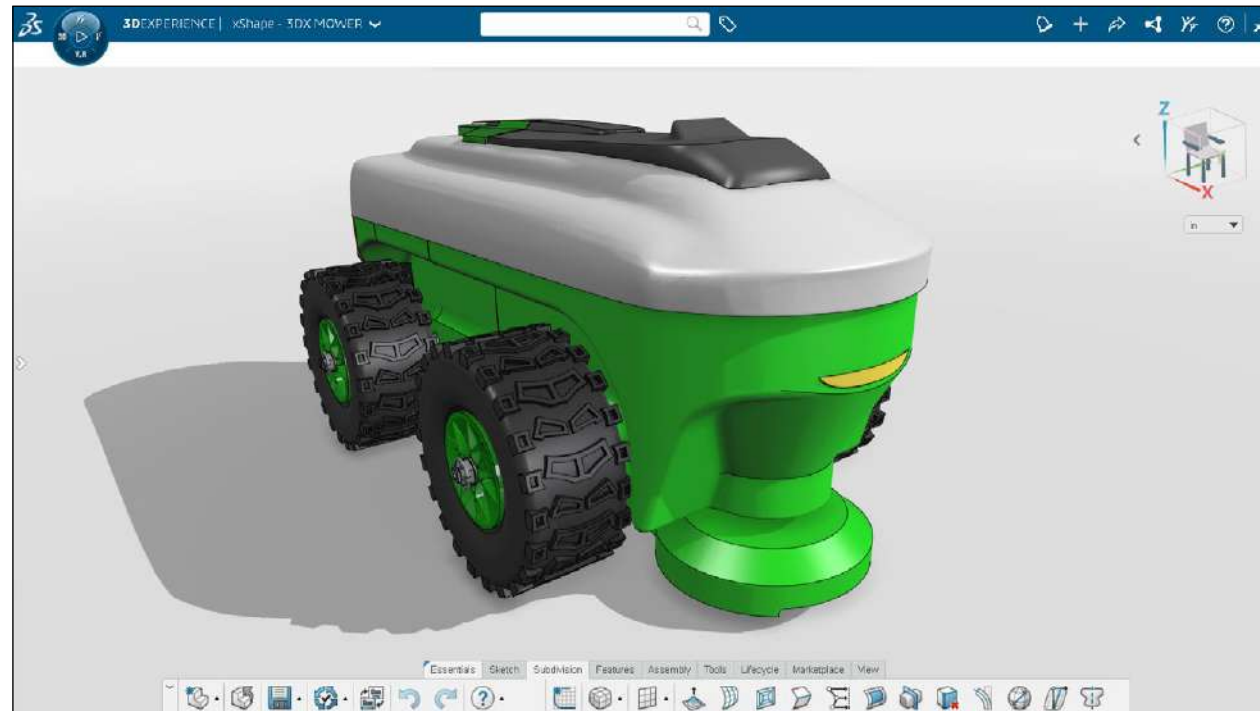
Freedom to explore and design

Exploring shapes with a parametric modeler often requires a long day, which usually ends with a single concept. And if modifications have to be made, then you have to start from scratch because the design framework has to be completely reworked. By taking advantage of xShape's advanced Sub-D modeling capabilities, you can dramatically increase the number of designs you produce in a day and make changes on the fly for immediate feedback.

3D Sculptor gives you the freedom to design anything you can think of, like a water bottle or a coffee cup. You do not need to know what you want ahead of time; it helps you decide what shape you want. Everything you do happens live, so you see the results of your modifications immediately and can fine-tune your design until you get exactly what you are looking for.

Key features

- Intuitive, easy-to-use modeling solution that provides all the basic tools and functionality needed to create organic-looking shapes using subdivision modeling technology.
- Easily switch from conceptual modeling to detailed modeling environment (and vice versa). Eliminate rework.
- Change the shape of the product at any point in the development lifecycle without the need for re-modeling. Changes propagate to parts, assemblies, drawings, mold tools and CAM data.



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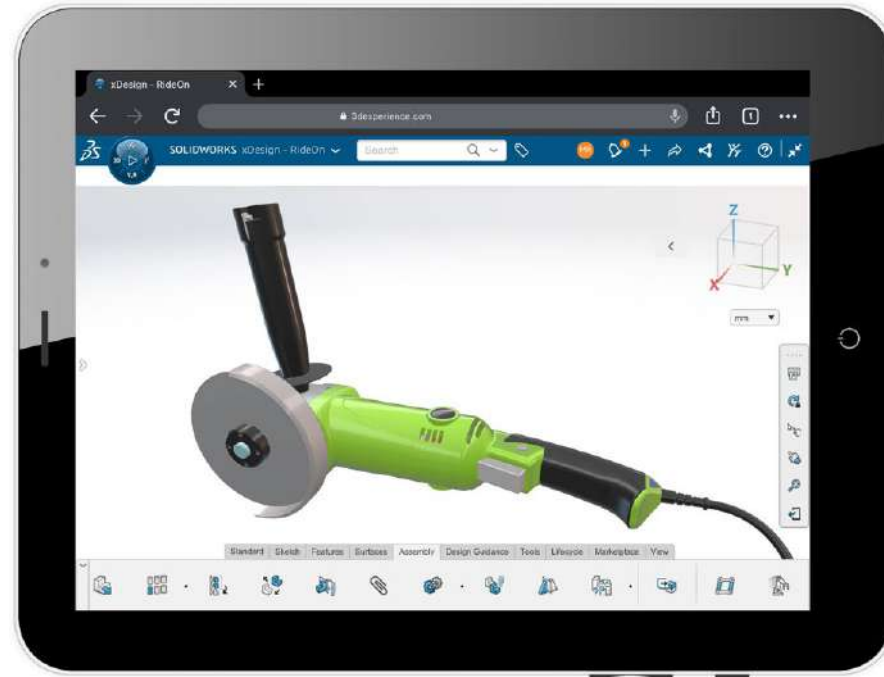
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3D CREATOR

A history-based parametric modeling application

3D Creator not only brings CAD capabilities to the cloud, but also takes a fresh approach to design tasks that is both elegant and innovative, offering new ways to approach common design workflows.

The integrated **Design Guidance** (topological optimization) and its dedicated features make xDesign an asset for additive manufacturing. Data sharing and collaboration around 3D design are simplified thanks to the **3DEXPERIENCE** platform that hosts the data and provides users with an integrated player fully compatible with most tablets and smartphones.



Key features

- Create parametric 3D models anywhere and anytime.
- Eliminate the need to plan your assembly structure with a single modeling environment.
- Iterate rapidly without the rework associated with typical parametric modeling tools.
- Understand structural requirements through an easy exploration of optimal material with Design Guidance.
- Supercharge repetitive tasks with the built-in Artificial Intelligence-powered "Design Assistant."
- Visualize your designs with ease and impress customers instantly with realistic appearances and environments.

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NEW WAYS TO TACKLE COMMON DESIGN WORKFLOWS

3D Creator offers new and imaginative approaches to improving traditional workflows, containing a series of innovative new features that work together to enable great design creativity. Let's take a closer look at the new fast and intuitive sketching features:

Machine Learning Accelerated Workflows

Sketching, part modeling and assemblies all have specific functionality provided by the "Design Assistant". Automating the repetitive tasks with artificial intelligence predicting what you were going to do.

Single Modeling Environment

Allows you to design first and worry about assembly structure later, and change it again if needed, quickly and easily.

Parametric Primitives

3D primitives can accelerate workflows by giving you solid geometry to get you started quickly, but traditionally, they are also a bit... primitive. Now in 3D Creator, you can add or cut away a primitive and as the name suggests, they are parametric, so you can go back and edit them and everything is rebuilt as you would expect.

Data Management Built-in

Revision control of files can be very time consuming, especially CAD files that are referenced in multiple other files. 3D Creator has it built in, and being on the cloud, collaboration is a breeze too.



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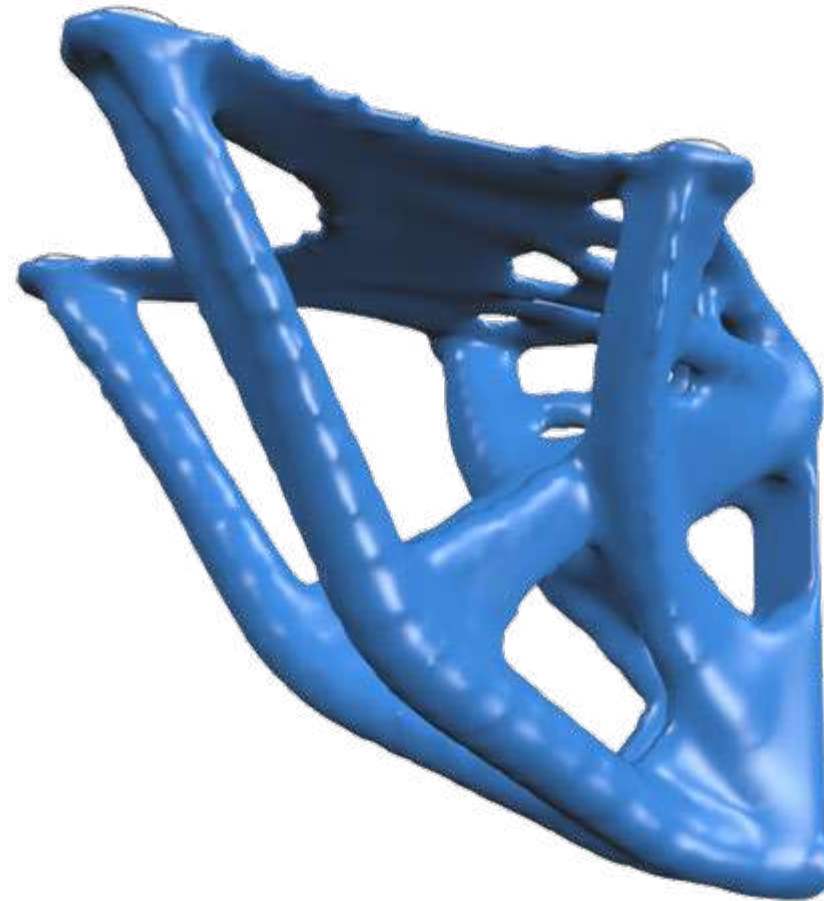
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Design Guidance to lighten your parts

3D Creator integrates an entry-level basic topological optimization tool called "Design Guidance" that allows you to considerably reduce the mass of the part according to the desired mass reduction percentage and the constraints imposed (boundary conditions, loading, regions to be preserved...).

This design guide can be used to propose a new geometrical shape from an existing body. The optimized body is superimposed on the initial body in order to use it as a visual guide to resume and finalize the parametric construction of the initial body. An alternative of parametric reconstruction consists in recovering a certain number of sketches at the level of the sections of the optimized body, in order to reconstruct the model by smoothing, for example. The optimized body can be used in the case of additive manufacturing.



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3D PATTERN SHAPE CREATOR

Create bio-inspired shapes with stunning generative patterns providing automated alternative exploration from the very beginning of the design process

3D Pattern Shape Creator, featuring xGenerative Design, is a revolutionary web-based algorithmic design application that allows designers, engineers and architects to quickly and easily design simple and complex shapes.

It uniquely combines **graphical visual scripting and interactive 3D modeling**, with the ability to use either interchangeably at any time.

It is very intuitive and you can create visual scripts without any programming knowledge.

The role provides you with the technology to create bio-inspired irregular and repetitive shapes with stunning generative patterns with automated alternative exploration from the very beginning of the design.

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This way of doing **computational design** is increasingly popular and growing in many industries. Originally used in architecture, it is rapidly moving to other spheres, with new use cases, thanks notably to the development of manufacturing techniques and capabilities. Life sciences, home & lifestyle, high-tech and industrial equipment—there are virtually no limits to the types of objects and shapes that can be produced for each of these industries.

Key features

Design, explore and validate variants of complex, repetitive and non-regular shapes and patterns with an intuitive algorithmic approach:

- Explore and generate styling patterns and shapes inspired by nature with an intuitive and powerful Algorithmic Generative Modeling approach.
- A unique combination of graphical visual scripting and interactive 3D modeling, with the ability to use either interchangeably at any time.
- Beginners and experts alike benefit from a progressive user experience combining 3D modeling and graph-based visual scripting.
- Generate multiple geometries by managing collections of objects with geometric quality and accuracy.
- Capture and reuse knowledge and design best practices to better capitalize on your work.
- All geometries created can be used for detailed design and manufacturing.

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3DEXPERIENCE | CATIA xGenerative Design

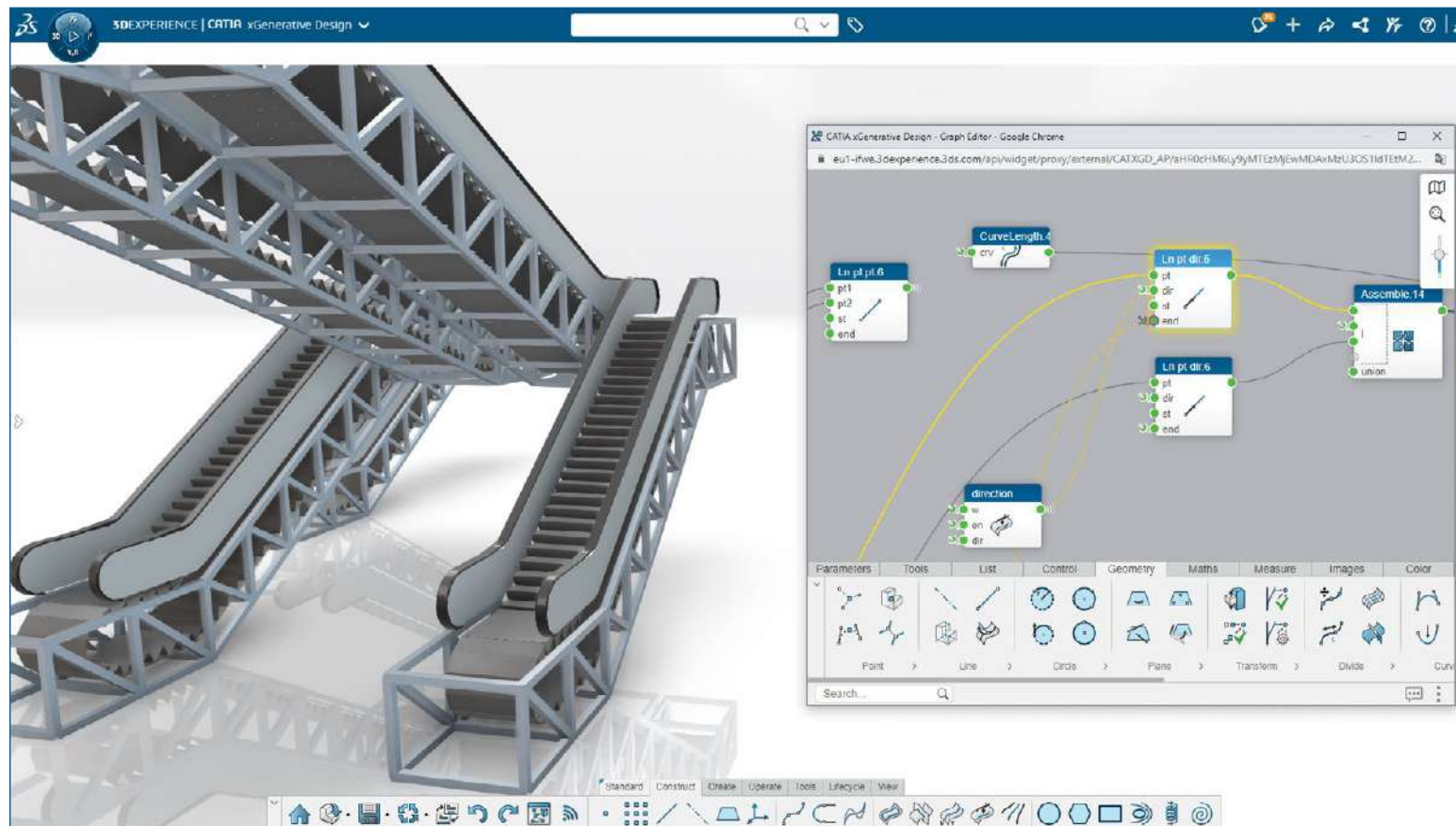


Best geometry quality and accuracy

3D Pattern Shape Creator allows you to design all creative shapes and patterns using parametric modeling technology with a high degree of automation.

This powerful role provides you with two interfaces that can be used simultaneously and in a complementary way: **immersive 3D modeling and Graph Editor**. Expert designers in code can go a step further and create their own scripts with EKL Script Editor.

The generated geometries are immediately reusable for downstream activities like detailed design, template instantiation and manufacturing preparation. Whether you work in the 3D immersive view or in the graphical scripting interface, you can design accurate geometries through a set of logic operations defined by input and output parameters.



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Easy to use and extremely powerful

3D Pattern Shape Creator is both easy to use and extremely powerful, in order to boost productivity and meet designers' needs.

- Create and display favorite parameters.
- Once you have created your favorite parameters, you can retrieve them to explore your work in more detail or present it to others. To do so, switch from the "drawing" view to the "controller" view and access a simplified view that allows you to display only your favorite settings.

Beginners and experts alike benefit from a progressive user experience combining 3D modeling and graph-based visual scripting. The user interface is seamless and intuitive, and adapts to all levels of design expertise.

- Capture and reuse knowledge and design best practices for better capitalization of your work. You can send your design to collaborators who can make modifications without having to know the software.



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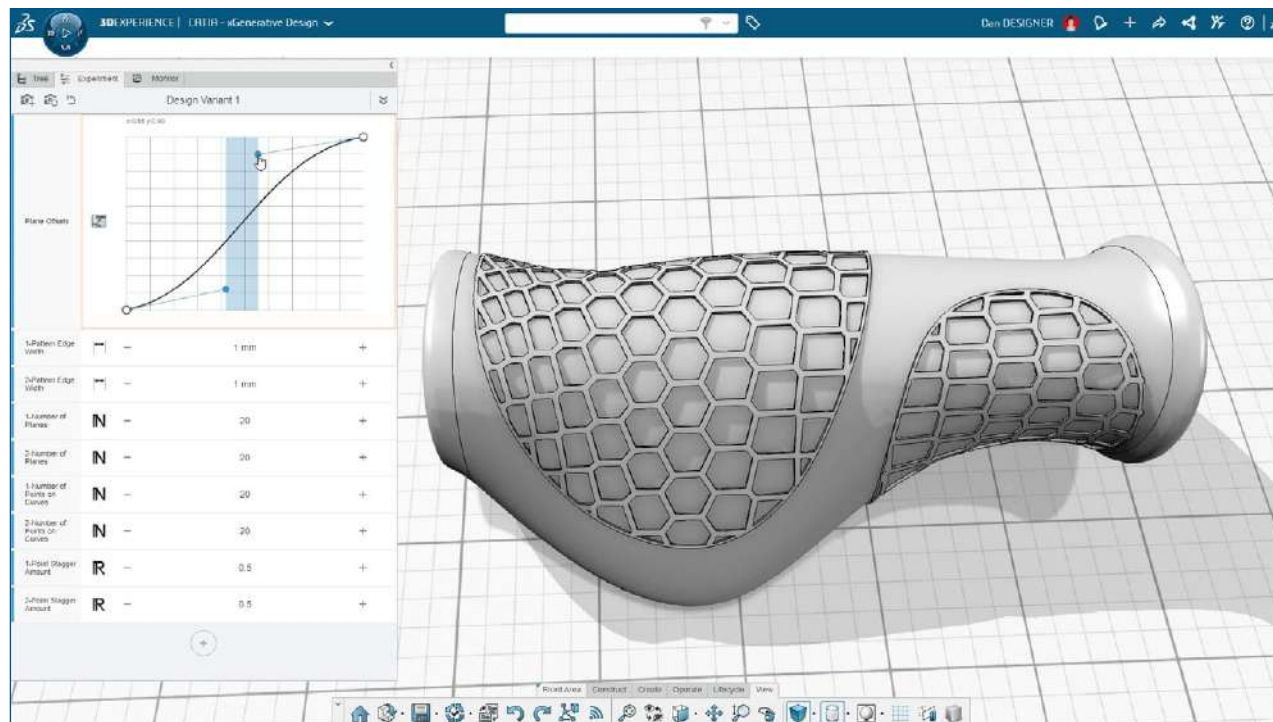
FREEDOM TO INNOVATE

With its growing application portfolio and secure cloud technology, the **3DEXPERIENCE** Works platform enables you to manage all facets of your product development process while reducing infrastructure costs, IT overhead, software maintenance and complexity.

Simplicity: Many designers in the workforce have never lived without the Internet. They simply expect to download an application or browse a web page to instantly get the information they need. Complex software installations, server management and long training sessions are now a thing of the past. The future is in cloud collaboration, with everyone focusing on the design itself rather than the hardware or software needed to make it happen.

Collaboration: Having a single cloud-based platform with design, engineering, manufacturing and even marketing solutions enhances collaboration by enabling innovation with colleagues wherever they are. Collaboration is increasingly important for businesses as there are more markets, more stakeholders and more competitors for everyone. Getting input and visibility from as many people as possible, wherever they are, is crucial to the success of a product.

Interoperability: With the **3DEXPERIENCE** Works platform on the cloud, the same model is used by the entire ecosystem. Models created in one application can be edited in another and vice versa. Swapping between the apps is quick and easy, and patterns can thus be repurposed in many ways.



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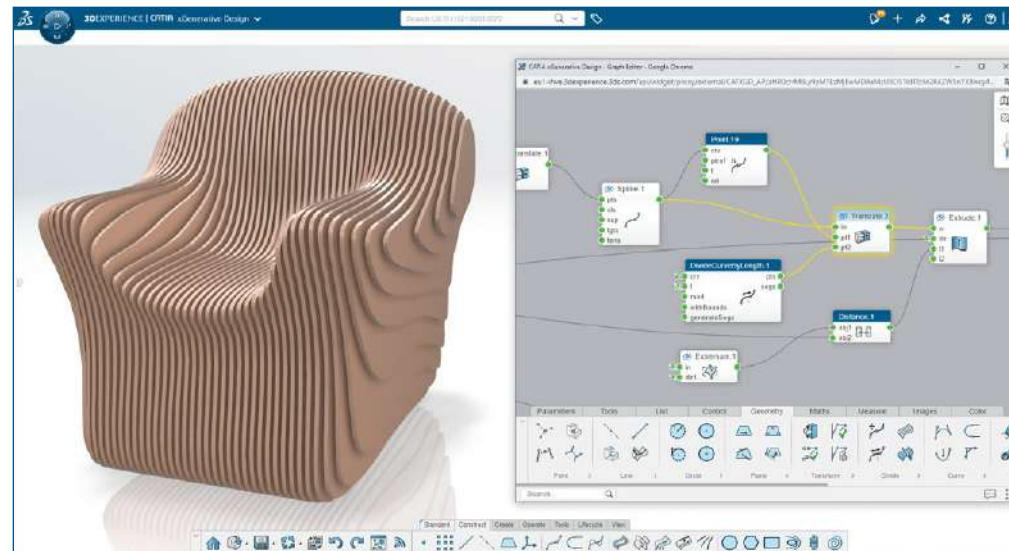
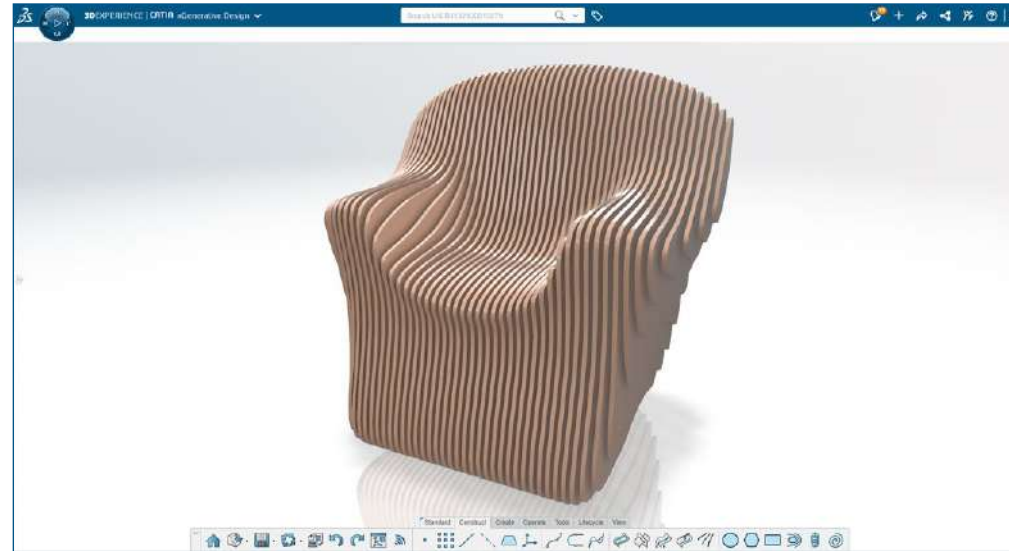
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If several designers are working on the same project from different applications, all they have to do is refresh their session and they will see the updates that have been made. They can pick up the design from where it was left and insert what was produced in one of the other applications directly into their application, as if it were native geometry. So they will always be working on the latest version of the design.

Security & reliability: Intellectual property protection is guaranteed by simple and secure access rights management. You manage and customize access rights, deciding who can access which parts of the project, making it very easy to open your project to other collaborators by integrating them on the platform if you wish. There is no risk of losing your data or unauthorized access to your intellectual property.

Scalability: Scale your capacity to meet project priorities and business opportunities.



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CONCLUSION

You have the power to create, share ideas and collaborate anywhere

3D Creator, 3D Sculptor, and 3D Pattern Shape Creator provide you with cutting-edge 3D design technologies and allow you to create and design products like never before. Imitate the irregular movements of nature, invent new shapes and surfaces, and deploy all your inventiveness simply and quickly. Inspiration is everywhere, and now you have the tools to bring your ideas to life.

Moreover, thanks to the **3DEXPERIENCE** Works cloud platform, your SOLIDWORKS creations are shared and co-constructed with your collaborators, allowing you to create objects resulting from a powerful and multifaceted collective intelligence.

View, share, annotate, discuss and manage your designs wherever you are, anytime, on any device with a web browser, simplifying and accelerating the product development process and bringing innovative products to market faster. This incredible flexibility is essential for industrial needs and environments where time constraints never seem to get any easier, but where expectations are high.

Main benefits to retain from 3D Creator, 3D Sculptor, and 3D Pattern Shape Creator:

- Create Sub-D geometry and perform parametric modeling by defining pattern inputs or reusing previously created workflows.
- Quickly design, explore and validate complex, repetitive and non-regular shape and model variations using an intuitive algorithmic approach.
- Enable design and engineering teams to collaborate more effectively with a seamless connection to SOLIDWORKS and 3D CAD software.
- Iterate designs faster by eliminating the need for data conversion between industrial and mechanical design tools.
- Manage product design data and documents in the cloud in a secure and collaborative environment.

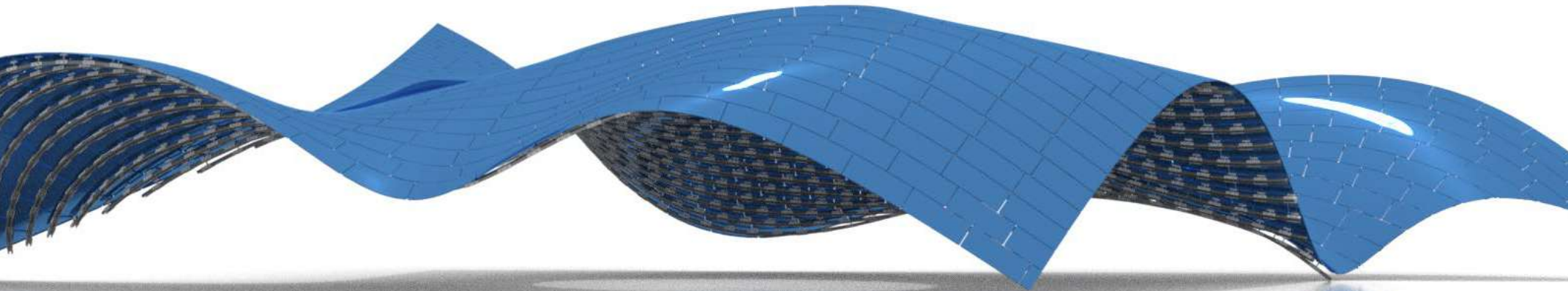
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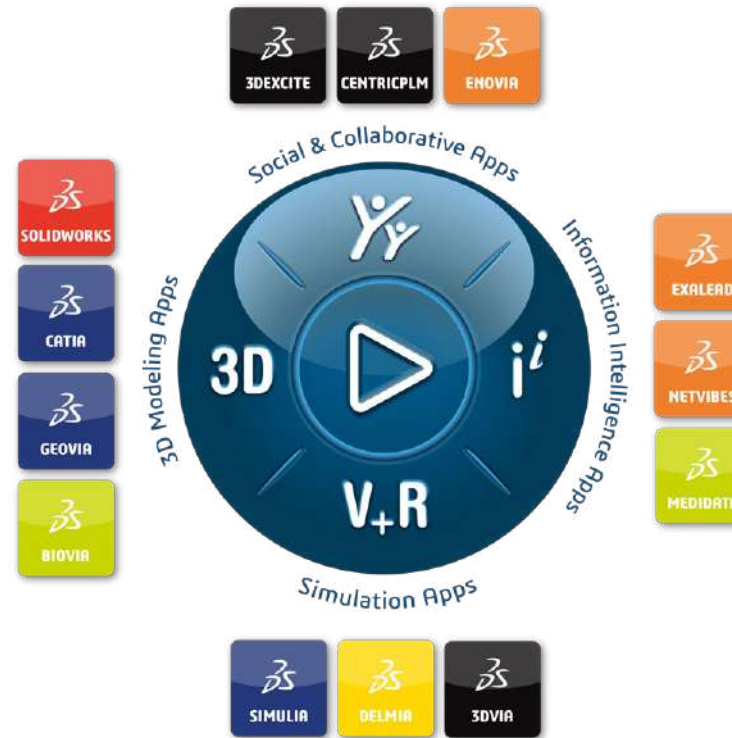
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Our **3DEXPERIENCE®** platform powers our brand applications, serving 11 industries, and provides a rich portfolio of industry solution experiences.

Dassault Systèmes, the **3DEXPERIENCE** Company, is a catalyst for human progress. We provide business and people with collaborative virtual environments to imagine sustainable innovations. By creating 'virtual experience twins' of the real world with our **3DEXPERIENCE** platform and applications, our customers push the boundaries of innovation, learning and production.

Dassault Systèmes' 20,000 employees are bringing value to more than 270,000 customers of all sizes, in all industries, in more than 140 countries. For more information, visit www.3ds.com.



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