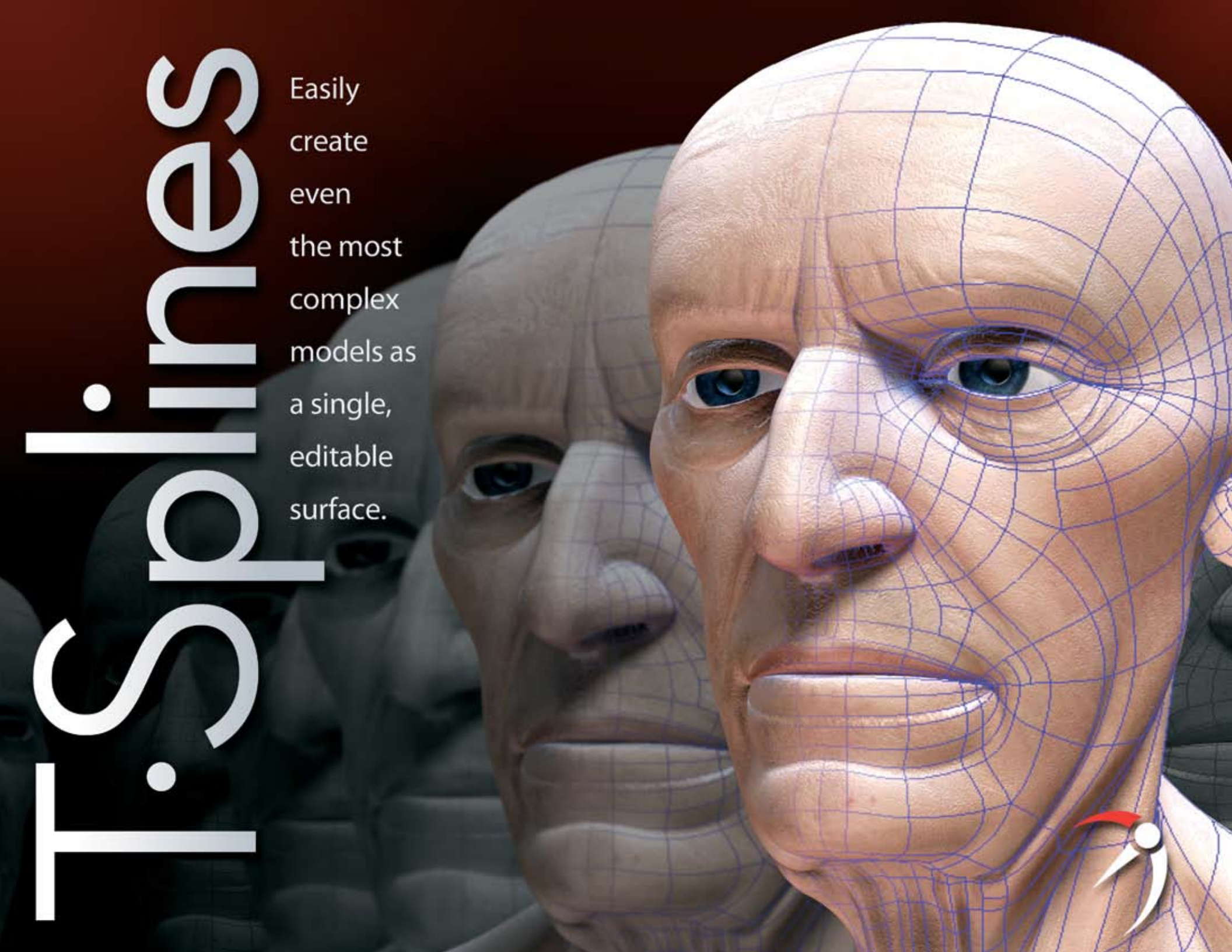
T-Splines

Easily create even the most complex models as a single, editable surface.



OVERVIEW

T-Splines, Inc. produces industry-leading modeling tools built without the constraints of NURBS, yet carefully designed to integrate with traditional surfaces. T-Splines combines classic methods from NURBS and subdivision surfaces with unique timesaving tools of its own to enable modelers to work with models as a single surface insead of as patches.

With its focus on keeping the surface as simple as possible, T-Splines accommodates both simple and complex modeling projects, and excels at organic shapes. T-Splines is used in applications ranging from video games to high-end human anatomy to CAD shape deformation.

FITS INTO YOUR WORKFLOW

T-Splines integrates naturally into existing workflows. Models can be created in T-Splines from scratch or converted from polygons, subdivision surfaces, or NURBS. T-Splines is an ideal surface format for optimization because the entire model can be merged together to eliminate tangency concerns, and additional detail can be added locally without warping the surface.

If your downstream applications require a different file format, T-Spline models can be exactly converted to NURBS, with both automatic and user-defined patch layouts. T-Splines can also be exported as a polygon object.

HIGH LEVEL OF CONTROL

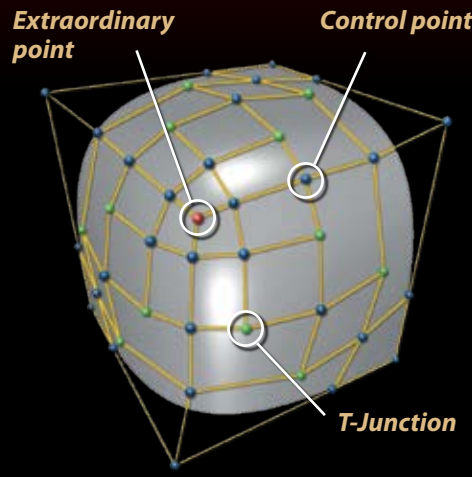
T-Splines surfaces can be created with varying levels of detail, with control points only where needed. A typical T-Splines surface will have up to 70 percent less control points than the identical equivalent set of NURBS patches.

COMPELLING TECHNOLOGY

T-Splines were invented by Dr. Tom Sederberg at BYU in 2003. T-Splines, Inc. has the exclusive license to the patented technology and has been awarded two NSF SBIR grants for commercialization. In 2006, Dr. Sederberg was awarded the SIGGRAPH Computer Graphics Achievement Award for his lifetime contributions to the fields of computer graphics and computer-aided geometric design. Widely respected academically, T-Splines research is now being performed at many universities around the world.

ANATOMY OF A T-SPLINE SURFACE

T-Spline surfaces are defined by control points, just like NURBS and subdivision surfaces. Like subdivision surfaces, T-Splines allow for non-rectangular surfaces through extraordinary points. T-Spline rows of control points, like those in NURBS, can traverse the whole surface. Unique to T-Splines are partial rows of control points that can terminate in T-Junctions. T-Splines are G1 smooth at extraordinary points, and C2 smooth at T-Junctions and the rest of the surface.



www.tsplines.com

Products

MAYA PLUGIN

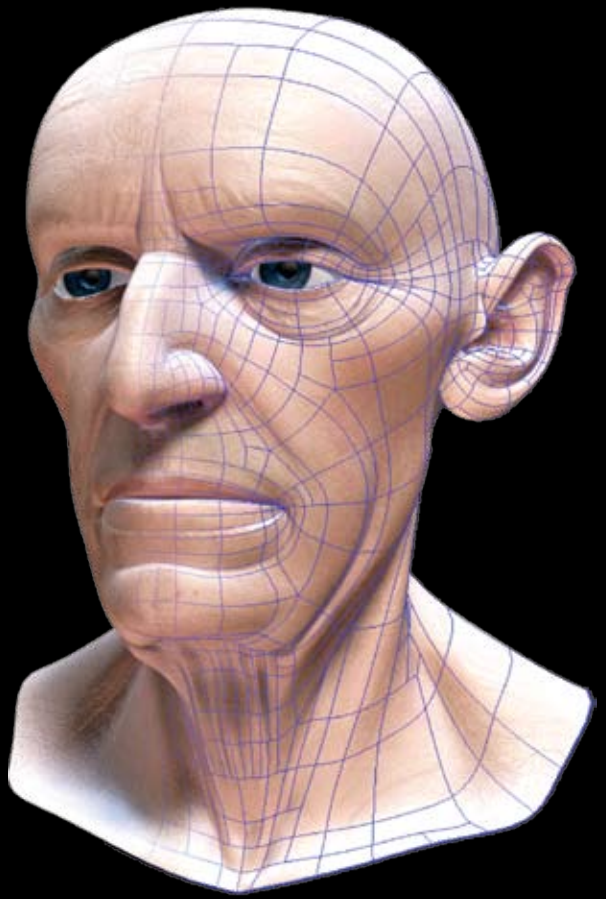
T-Splines' powerful surface modeling tools improve on traditional NURBS patch modeling techniques by introducing single, continuous T-Spline surfaces. This helps speed up your modeling and animation workflow with capabilities to add local detail, surface creases, gap-free surface modeling, and full NURBS compatibility. Available for Maya 5 through Maya 8 on Mac, Windows, and Linux.

RHINO PLUGIN

The T-Splines Rhino plugin is highlighted by the T-Splines Network Surface command: an easy way of creating complex, non-rectangular surfaces from curves. Other unique capabilities include optimized lofting, creating local detail, and merging. Available for Rhino 4.

T-TOOLS DEVELOPMENT LIBRARIES

The T-Tools software development kit allows OEMs to integrate T-Splines technology into their applications. The libraries consist of a set of cross-platform C++ libraries and include a debugging environment, a viewer, and full technical support. All capabilities of the plugins are available through the T-Tools API. T-Tools provides an ideal platform for organic surface creation, reverse engineering, styling, and reusing legacy data.



Key capabilities

MODELING CONTROL

- Insert local detail with T-Junctions
- Split/Copy/Delete Faces
- Add Local Creases
- Extrude Shapes
- T-Spline Lofting
- Shape Primitives
- T-Spline Free-form deformations

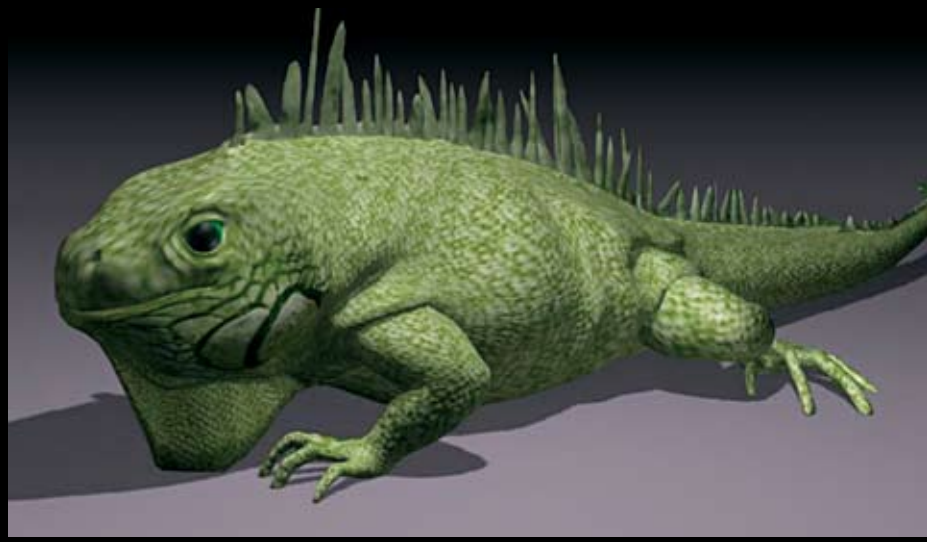
SURFACE QUALITY

- Simplify geometry by deleting control points
- Remove residual creases
- Merge to create single curvature continuous and watertight surfaces
- Generate gap-free NURBS

INTEROPERABILITY

- Convert NURBS, SUBDS or polygon surfaces to T-Splines
- Convert to NURBS or polygons
- Render T-Splines
- Polygon proxy for UV maps/rigs

T-Splines



Quotes

"To the artist or designer, it is like working with the freedom of SubDs while enjoying the benefits of NURBS. If only NURBS had started out like this! Time spent seaming NURBS surfaces could have been spent on actual modeling."

"T-Splines are the next thing. . . . They have opened up possibilities to work with surfaces that were simply impossible before."

— **Eric Allen, Senior Modeler, DAZ Productions**

"We use very sophisticated software to create and animate our models. . . . I immediately realized the potential of this new technology to solve most of the problems that we struggle with when using NURBS. I estimate that the T-Splines technology can reduce my modeling workload by 15 percent."

— **Lead Modeler, Major Animation Studio**

"T-Splines' editable polysurfaces are a dream come true in Rhino! This ease of use for designers, combined with NURBS fabrication advantages, can only be found in software priced powers of 10 more than the Rhino/T-Splines combo. I have been asking for this in the Rhino forums for a long time."

— **Ricardo Amaral, Designer**

"I feel strongly that T-Splines' technology will help Optimal Solutions introduce a very powerful Sculptor software tool and maintain a significant competitive advantage in CFD and FEA shape optimization."

— **Mark D. Landon, Ph.D., President, Optimal Solutions Software**

" The T-Spline technology addresses some important limitations that are inherent in conventional NURBS surfaces. T-Splines are based on solid mathematical principles. An important practical consideration is that T-Splines are forward and backward compatible with NURBS."

— **Dr. Rich Riesenfeld, Founder of B-Splines in CAD**

"So what comes after NURBS, those non-uniform rational B-Splines which constitute the method in which advanced 3D CAD modeling takes place today? The answer. . . is T-Splines, the mathematical strategy for dealing with the limitations inherent in NURBS."

— **Anthony Frausto-Robledo, Editor-in-Chief, Architosh**

ABOUT THE COMPANY

T-Splines, Inc. was founded in 2004 by Matt Sederberg and Dr. Tom Sederberg. The company holds an exclusive license to the T-Splines technology developed by Dr. Sederberg at Brigham Young University. Together with a staff of 3D modeling software experts and an experienced board of directors, the company is dedicated to establishing T-Splines as the new industry standard in high-end animation, industrial design and CAD/CAM/CAE applications.

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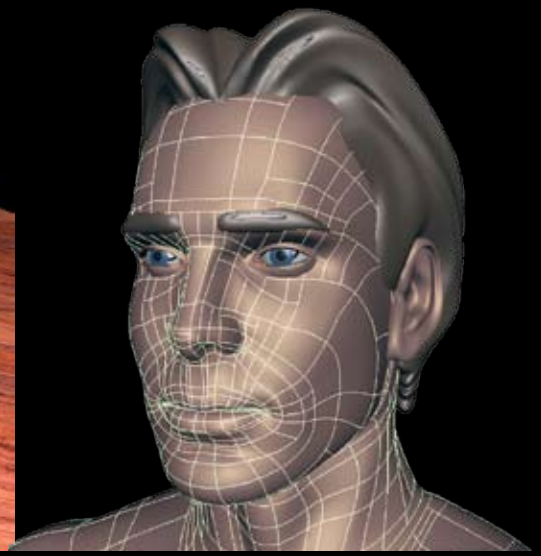

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