

STARZ ANIMATION
(www.starzanimation.com)
Toronto, Canada

Autodesk® Maya®
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Maya has been the backbone of our digital pipeline since Starz Animation Toronto opened its doors. We love it for its power, flexibility, excellent support, and huge community of artists.

—Kevin Adams
Director of Photography
Starz Animation

Creating the Post-Apocalyptic World of “9”

Autodesk Maya and Mudbox Enabled Starz Animators to Create the Eerie, Fantastic 3D-Animated Sci-Fi Adventure 9.



9. Image courtesy of Universal Studios Licensing LLLP.

Summary

The movie 9, released on 09/09/09, follows the adventures of nine brave, endearing ragdolls as they do battle against vicious, evil, mechanized monsters that have destroyed the human race. The nine unwitting heroes find themselves in an eerie, post apocalyptic world where they must rely upon their wits to evade and defeat their insidious opponents.

With rarely a lull in the engaging movie, every single frame of this animated feature film is packed with CG characters, rubble, debris, props, and sets; all composited into multi-layered CG animated images enhanced by 3D lighting and camera effects.

The animated feature 9 was inspired by a 2005 animated short film of the same name, 9, which Director Shane Acker produced as a student film while attending UCLA. Besides winning a Student Academy Award® for Animation in 2005 and other top film festival honors, it also attracted the interest of Producer Tim Burton who, along with Timur Bekmambetov, enabled Shane Acker to produce the full-length animated film version for Focus Features.

This put the wheels in motion for Canada's leading digital animation studio, Starz Animation Toronto, and its talented animators to find a breakthrough solution for realizing this riveting cinematic illusion

despite a very ambitious deadline. Starz' 9 team—which included Director of Photography Kevin Adams, and Matthew Teevan, Head of Production—consisted of 125 animation artists and 100 support employees who worked diligently to create and complete hundreds of detailed scenes.

As a fast-paced sci-fi adventure that keeps viewers on the edge of their seats, 9 was fabricated entirely in the CG environment using Autodesk® Maya® animation software and Autodesk® Mudbox™ sculpting software—the mainstays of the Starz Animation Toronto production pipeline. These Autodesk tools handled the creative and technical demands of this 3D animated feature; the creation of dozens of intricate, expressive characters, richly textured settings and vistas, and captivating action that explodes on screen.

The Challenge

The scope of this project was daunting, especially considering that this tour de force had to be completed in just 14 months. Taking the project from start to finish—nailing down the storyline, storyboards, and animatics, to how the characters would look and move—seemed an almost impossible challenge to accomplish in such a short timeframe at the level of quality and detail envisioned.

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While the Starz Animation Toronto creative team could refer to the short film which featured the same basic characters and storyline, the animated feature needed a story that would go into much greater depth, with a greater variety of refined characters, action sequences, and 3D buildings and sets.

Throughout 9 there are many scenes that feature multiple characters that interact dynamically with each other on screen at the same time. The “stitch punk” ragdolls, created by a scientist on the verge of the world’s destruction, are covered by a fine, stretchy burlap mesh with a rigid zipper in front and visible stitching. While they appear fragile and vulnerable, they exhibit extraordinary strength and resilience as they climb and fall from heights, and as they’re dragged or flung against walls, among other virtual stunts. According to Teevan, “these mesh textures presented animation challenges whenever the characters moved and this was one of the challenges that really put Maya to the test.”

Each of the nine dolls has a distinctive personality, such as rebellious, brave, soft or dim-witted; and actors such as Elijah Wood, Jennifer Connelly, Martin Landau, and Christopher Plummer, personified them with their voices. Robust character rigs communicate the characters’ body language and extensive facial animation, such as tilting the head, and opening and closing the mouth and eyes.

Throughout 9, the dolls have unpleasant encounters with deadly, mechanical creatures that roam the ruins in search of more life to destroy. The malevolent 3D creatures include a cat-skulled character; a cross between a bat and manta ray; a huge snake with arms; and a spider. Teevan added that, “Some of the monsters required huge, complicated rigs and massive deformations.” Sets were elaborate as well, including bridges, large buildings, a church, and a visually busy library.

Since the character 9 and his cohorts 1 through 8 are “only nine inches tall, Maya software’s virtual camera needed to be placed nine inches from the ground to tell the story from their vantage point,” said Adams. “This created a special challenge since the post-apocalyptic world needed to look extremely desolate, menacing and larger than life.”

“This zoomed in view required highly detailed characters and environments,” Adams explained. “Every sequence has a new location with either a new ‘stitch punk’ character or an attacking monster. Our greatest creative challenge was creating a close-up view that didn’t take inordinate amounts of time to do, but didn’t cheat viewers of a visually rich experience.”

The Solutions

Maya proved to be a powerful, versatile tool that could handle the lion’s share of the film’s demands: asset creation, virtual camera work and multi-layered 3D animation and effects. Mudbox supplemented Maya by enabling Maya animators to make models of highly detailed ground plane textures, as well as to test sculptural models, ornamental wall details, and certain other environmental CG touches.

“As a creative tool, Maya is extremely fast and robust, and it enabled us to pre-visualize and complete very complex 3D animated sequences that involved compositing 2D matte paintings, 3D animated elements and choreography, mapping 3D projections onto surfaces; as well as camera moves, mist, explosions and lighting effects,” Adams added. “Maya was absolutely the best solution we could have used to create 9.”

Creative solutions were also applied to streamline the workflow. For example, rather than recreate the same 3D elements over and over again, the team created ready-to-use building blocks, such as Book Gods, for all the books in the scientist’s library; Rubble Gods, for piles of debris and bricks; and Splinter Gods for all the broken pieces of wood scattered everywhere.

“We routinely mixed multiple layers of elaborate 2D mattes and transparent paintings, and mixed these 2D backgrounds with 3D foregrounds, and illuminated it globally to create rich, 3-dimensional sets quickly,” said Adams. “These tricks helped us employ creative shortcuts to expedite repetitive tasks without compromising the visual quality, and that let us get every possible ounce of cool on the screen.” The final color correction for the animated feature 9 was done by Efilm in Hollywood using Autodesk® Lustre® software.

The Results

With a story that swiftly unfolds with non-stop action and suspense, 9 keeps viewers spellbound and sets new benchmarks for quality 3D animated feature entertainment.

“Maya has been the backbone of our digital pipeline since Starz Animation Toronto opened its doors. We love it for its power, flexibility, excellent support, and huge community of artists,” said Adams.

“Together with Mudbox, Maya was a tremendous asset on this project because we had the tools necessary to accomplish virtually everything we needed to do,” Adams said. “9 stands as a testament to what can be achieved with good planning, fearless execution, and great tools and support from Autodesk.”

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