

COMPANY

Riva Animation & VFX

LOCATION

Mumbai, India

SOFTWARE

Autodesk® Maya®**Autodesk® 3ds Max®**

Riva's Photoreal Invisible VFX for PK

The studio relies on Autodesk Maya and 3ds Max for Aamir Khan starrer blockbuster

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—**Viral Thakkar,**
Creative Head & VFX Supervisor
Riva Animation & VFX



Image courtesy of Riva Animation & VFX

Aamir Khan's latest release PK brought to light the serious issues of religious tolerance in India in a fun, light hearted way. Directed by one of the best directors of the industry, Mr. Rajkumar Hirani, PK is a film about an Alien visiting India and getting confused amidst the various faiths and practices of Indian culture. The film brings forth the common thread of love and humanity and urges us to look beyond our religious tags.

What is interesting to know is that this film that touches upon the underlying cultural realities of India is also touched upon by the expert team at Riva Animation & VFX throughout. The team at Riva has done a brilliant job of seamlessly interlacing computer generated characters, elements and background throughout the film. Right from the alien space ship concealed in the cloud landing on Earth to creating a CG city landscape of Rajasthan, Riva has heavily relied on Autodesk Maya and 3ds Max to create and add VFX and CG elements to various sequences in the film.

Speaking about the scope of work in the film, Viral Thakkar, Creative Head & VFX Supervisor, Riva Animation and VFX said, "The major chunk of our work for PK was in the opening sequence where the mothership from space lands on earth and also in the train blast sequence. It's been completely done from scratch using special effects. But if you will see the movie, CG and animation is used across the movie and the seamlessness with which it is integrated in it, is

remarkable. We've executed around 700 shots and most of them are invisible in the movie.

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The 'Happy' Cloud



Image courtesy of Riva Animation & VFX

The opening sequence of the film has a cloud emerging from space camouflaging a spaceship within, which transports Aamir Khan a.k.a PK, to Rajasthan, India. Being one of the crucial sequences of the film, Raju Hirani had a predefined vision for it. He wanted the cloud to not look too ominous and exude the feeling that

The train blast sequence had its fair share of challenges as it was shot on a real railway platform with an actual train standing next to it and the use of fire was completely prohibited.

aliens are attacking Earth. He wanted it to look happy, approachable and friendly. The scene was previously scripted to occur in the night, but to stay true to Hirani's vision of a happy cloud the team recommended for it to be changed to an early morning scene, so as to do away with shadows and dark tints that a night setting would bring in.

"The idea was that the audience will only see the cloud moving at first. The spaceship is hidden in the cloud and only once it is closer to earth, the ship takes a little more defined shape. We have tried to make the design of the spaceship very different from the ones that we have seen in earlier movies and Mr. Hirani was really happy with the look that we came up with," Viral added.

To meet the defined vision, Riva couldn't use the readily available cloud presets in Maya and had to build it from scratch. There was a lot of detailing given to the cloud too in terms of the mist, the blurry edges with lit-tle grey tint and the foamy trail it leaves behind while traveling. This was done using volumetrics in Autodesk 3ds Max.

Train Blast

The train blast being another significant sequence in the movie had its fair share of challenges. Since the scene was shot on a real railway platform with an actual train standing next to it, the use of fire was completely prohibited. The complete sequence was previsualised on Autodesk Maya by Riva to get the flow right. Initially the plan was to shoot the scene in 4-5 days but Viral helped the production team save lot of production cost by pre-visualising and storyboarding the sequence to the T and it got done in one and half days.

While shooting, the train was lit from inside with orange lights to give the effect of fire, this was then further enhanced in post by adding the fire, dust, hues and dead bodies. As the captured footage of people running helter skelter after the blast did not give the desired feel and expressions, Riva had to create and animate the people running around the train in Maya and add them to the scene.

Sudhir Trivedi, CG Supervisor for the film said, "We prefer Autodesk Maya to create the various elements and characters in CG. But the FumeFX in 3ds Max gives a much better smoke quality output and so we have used it extensively to add the desired effects in the blast sequence".



Images courtesy of Riva Animation & VFX

Aamir's Alien Ears



Images courtesy of Riva Animation & VFX

One of the first things that you will notice about Aamir's character in the movie are his large jutting out ears, which were a very important part of the look of the character. To make it appear that way, throughout the film Aamir had to wear a prosthetic aid behind his ears which was later cleaned up in post production. After the clean-up, it had to be replaced with the photo real skin. In some scenes, the ears are also shown to be moving in a reflex like motion. To make this possible, Aamir's ears were completely created in CG using Autodesk Maya and animated.

Interestingly, Aamir Khan has peculiar marks behind his ears and being a perfectionist he wanted it to be captured and maintained in the CG version too.

Crowd sequences

The famous song from the film, 'Bhagwan Hai Kahan Re tu' has Aamir going to various popular holy places and praying to deities for the return of his space remote. This sequence posed a big challenge to the production house as it involved shooting Aamir in extremely crowded places and given his popularity that was almost im-possible. As a solution, Viral suggested to do the scenes using compositing, where Aamir was shot against green screen and was later composited against the various holy places which were shot separately. He was seamlessly composited onto various footages and was shown praying namaz at Jama Masjid, beating his chest in Muharram congregation, visiting temples and many more.

"After suggesting this idea, we did a rough composite of Aamir against some holy places and showed it to the production house, they were all of blown away including Aamir himself, on the possibilities of what one can do using CG nowadays," says Associate VFX Supervisor Prashant Thakur.



Images courtesy of Riva Animation & VFX



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In the past, whenever there was a need for special effects in the film, I used to hold myself back thinking will this be possible or not? But with Viral that anxiety went away. Whatever I wanted in terms of special ef-fects, Viral made it possible. In this one year journey with Riva, we have started thinking more about VFX. And it has been an education for me to see how we have grown in terms of technology. Now many more things are possible to do.

-Rajkumar Hirani,
Director, PK

Even while showing Sushant Singh Rajput in Lahore, the city seen through his window was composited in post. Initially, the background was supposed to be static but later a requirement of having camera movements came in, and this threw the usage of matte painting out of the window. The entire cityscape was then created in CG along with various elements like birds flying in the sky and people wandering in the streets using Autodesk Maya.

Many CG and VFX shots were added, altered and tweaked to create the perfect film that is PK and the mastermind behind it was helped immensely by Riva Animation and VFX. Looking at the work done by Riva even Rajkumar Hirani has vouched for the ease post production brings to film making. Earlier many things had to be compromised due to the non-feasibility of shooting it but now with CG and VFX, director's vision is getting trans-lated onto the screen he feels.

Rajkumar Hirani said, "I'm very happy that we collaborated with Viral and Riva because I have been very wary about special effects earlier. So in the past, whenever there was a need for special effects in the film, I used to hold myself back thinking will this be possible or not? But with Viral that anxiety went away. Whatever I wanted in terms of special effects, Viral made it possible. In this one year journey with Riva, we have started thinking more about VFX. And it has been an education for me to see how we have grown in terms of technology. Now many more things are possible to do".

The strength of CG and VFX work done by Riva for PK lies in how seamlessly it fits in with the storyline and propels the story further. The team of around 100 artists has worked on 700 shots for the film and completed the project in 8-9 months. Needless to say, Riva is happy to be a part of a film that's crossed INR 600 crore globally in box office numbers.