Article

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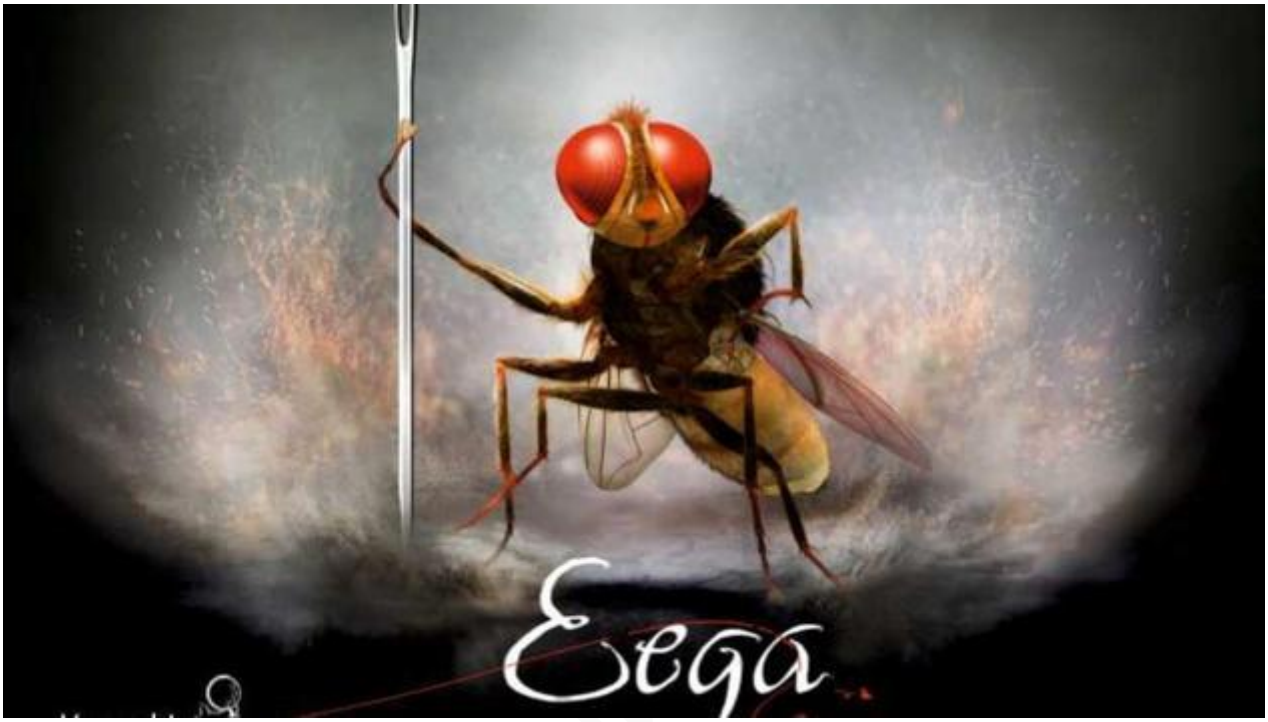
The Impact of Visual Effects (VFX) and Computer-Generated Imagery (CGI) on Narrative Immersion in *Eega*



Abstract

The Evolution of Visual Effects (VFX) and Computer-Generated Imagery (CGI) in Indian cinema is increasing rapidly, as it enhances the storytelling approach and makes the audience more immersed in the narrative through visuals.VFX Artists struggle to create stunning visuals to portray the impossible life concepts and narratives on the screen. This research article examines the contribution of visual effects (VFX) and Computer-Generated Imagery (CGI) techniques to storytelling, character development, and emotional depth, highlighting their role in narrative storytelling. In the 2012 film *Eega*, directed by S.S. Rajamouli, a protagonist is killed and then transformed into a housefly, achieved through the use of visual effects (VFX) and Computer-Generated Imagery (CGI). Its emotional connection gives the audience an immersive experience in the story.

Introduction

The collaboration of Visual effects (VFX) and Computer-Generated Imagery (CGI) creates stunning, realistic visuals that seamlessly integrate into live-action footage. Visual effects (VFX) are all about digital effects. The father of Special effects is Georges Méliès, a French Film Director. In cinema, stunning visuals and engaging storytelling are created, and that offers audience engagement. Visual

effects (VFX) and Computer-Generated Imagery (CGI) are a dream for many filmmakers. In the 2012 Indian fantasy film *Eega,* directed by S. S. Rajamouli, visual effects (VFX) and Computer-Generated Imagery (CGI) play a crucial role in narrative immersion. In the film *Eega*, a protagonist is killed and turns into a housefly. The visual depiction of the 3D model housefly, with its animations, movements, and body language, is achieved through Computer-Generated Imagery (CGI) and Visual Effects (VFX). The primary distinction between Visual Effects (VFX) and Computer-Generated Imagery (CGI) lies in the fact that one involves digital effects, whereas the other involves digital elements. This article examines how visual effects (VFX) and Computer-Generated Imagery (CGI) techniques contribute to storytelling, character development, especially of the Housefly, and emotional depth in *Eega*. All these elements play a vital role and help the audience become immersed in the movie.

Visual effects (VFX) and Computer-Generated Imagery (CGI)

The cinema industry is a key component of the entertainment industry. It has been revolutionary in the way of storytelling, especially in visuals, as it has been presented on the screen. Visual effects (VFX) and Computer-Generated Imagery (CGI) both employ different techniques and serve distinct purposes. Yet, they are often collaborative and produce stunning, realistic visuals when integrated into live-action footage. In live-action footage, as I mentioned earlier, the distinction between Visual Effects (VFX) and Computer-Generated Imagery (CGI) was introduced. Let me explain it briefly here. Visual effects (VFX) always integrate with live-action footage. The techniques used to achieve this output include VFX Paint and stereoscopic effects. VFX Paint is used to seamlessly remove objects and characters from footage. **Example**: Rope Removal in the Stunt Scene. **Stereoscopic -** This technique is used to show 2D movies into 3D movies. This technique creates depth to the character or anything in the scene.

Rotoscoping - This technique involves creating a mask on a character or object in the scene, allowing for the extraction of the masked portion, which can then be placed in any scene or background. Here is the essential technique used in this movie, not only in Eega but also in other movies. Without the matchmoving technique, the Visual effects (VFX) are not complete. In contrast, with the matchmoving technique, Computer-Generated Imagery (CGI) plays a significant role.

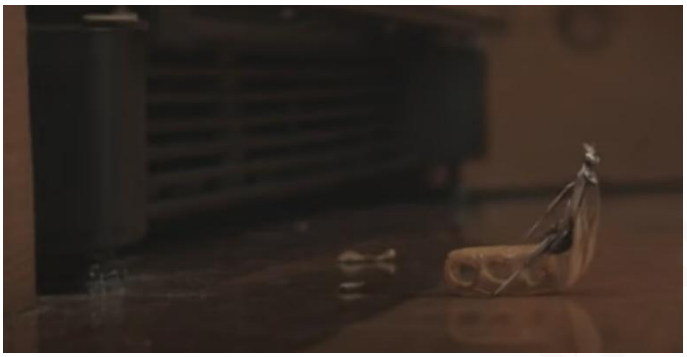
Matchmoving - In this technique, matchmove artists utilise Computer-Generated Imagery (CGI) and Visual Effects (VFX). These will be collaborated in live-action footage to enhance the output.

Example - The Housefly character is a Computer-Generated Imagery (CGI) digital

element that has been created and animated to match the live-action footage, resulting in seamless output.

Matte painting - This technique enables filmmakers to create an illusion by using a painted landscape, set, or distant location that is not physically available or impossible to recreate using traditional set design.

Compositing - All the above techniques are done separately, and the compositing artist combines them to produce a seamless output on the screen. These are the techniques involved in visual effects (VFX) to achieve convincing visual effects.



Computer-generated imagery (CGI) of digital elements, characters, or environments. Which has been created and integrated into live-action footage. Computer-generated imagery (CGI) is used in animated films, video games, and virtual reality experiences. Techniques such as 3D Modeling (of Characters, animals, and sets**), texturing, animation, and rendering** are employed to bring digital creations to life. Visual effects (VFX) and Computer-Generated Imagery (CGI) are two terms that collaborate and share goals in creating compelling visual experiences for the audience.

The rapid evolution of Visual effects (VFX) and Computer-Generated Imagery (CGI) in Indian cinema

Georges méliès, the father of Special effects, is a French Film Director. He is the first person to utilise techniques such as stop motion, double exposure, and slow motion in his motion pictures. The film is also commonly referred to as a movie or motion picture. The evolution of Visual effects (VFX) and Computer-Generated Imagery (CGI) in India is rapid. Especially in the early 2000s, the Bollywood industry released numerous movies featuring computer-generated imagery (CGI), which began to gain prominence in the early 2000s. In the 90s, creating 2D works in film was incredible, and it propelled the cinema industry to new heights. As 2D artists began to improve themselves in response to the rapid growth of technology, it's no surprise that Indian cinema soon followed suit. This led to a surge in 3D movies, which brought science fiction and fantasy films to life. In the 2010s, technology improved, and Indian cinema saw a surge in movies that pushed the limits of Visual effects (VFX) and Computer-Generated Imagery (CGI) in films; Eega was also released during this era. The current state of Visual Effects (VFX) and Computer-Generated Imagery (CGI) has brought about a revolutionary shift from 2D to 3D technology. Indian filmmakers are pushing their limits to provide an immersive experience in both visuals and storytelling. The future of Indian cinema looks extremely promising, and Indian cinema is poised to explore the latest technology, including AI. This rapid evolution of Visual effects (VFX) and Computer-Generated Imagery (CGI) in

Indian films has been growing rapidly, and future technology will bring Indian cinema seamless visuals and immersive storytelling.

Comparison of Visual effects (VFX) and Computer-Generated Imagery (CGI) in *Eega* (2012) and *The Cockroach* (2010)

The *Cockroach* is a short movie directed by Luke Eve in 2010. The Visual Effects (VFX) and Computer-Generated Imagery (CGI) in comparison with *Eega*, which was released in 2012. I am going to compare a particular scene and how the 3D model (The Cockroach and The Housefly) is being modelled and how it has been visually matched with live-action footage.

Comparison scene: Protagonist Revealing the character in (The Cockroach and Eega)

In the scene from The Cockroach movie, the antagonist, Charlie, explains to Sara that he has been reborn as a cockroach, using chocolates and cookies to write his name on the floor. Here, the VFX Supervisor has done a great job by simply showing how the cockroach drags a few chocolates and cookies to create the name' Charlie'. The scene where the name Charlie is visually matched with the live-action footage, but The Cockroach, a 3D model, does not perfectly match the live-action footage. In the same scene in *Eega*, character Bindu and the Housefly (Nani) in the movie where the housefly reveals that it's Nani whose rebirth as a housefly, the character Bindu breaks down thinking about Nani and using her tears the housefly (Nani protagonist) writes his name and explains the character, Bindu. The emotional depth of the storytelling and VFX gives more impact to the scene. It creates gripping and emotionally charged sequences, where Subtle facial animations and expressive gestures, despite the lack of dialogue, convey the housefly's emotions, allowing the audience to connect effectively. It will be visually matched with the live-action footage, and the 3D model of the Housefly will be perfectly matched using the technique called match move.

Here comes the budgeting of these two films, and budget plays a significant role as well. Because *The Cockroach* has a movie duration of 13 minutes 35 seconds, and Eega is a film that lasts 2 hours 25 minutes, these two movies stand alone in terms of their impact on (VFX) and Computer-Generated Imagery (CGI).

Visual effects (VFX), Computer-Generated Imagery (CGI), and Storytelling

Enabling filmmakers to create emotional landscapes that deepen storytelling and expand creative possibilities beyond physical limitations. Visual effects (VFX) and Computer-Generated Imagery (CGI) serve as crucial storytelling elements. In Film Production, we have stages, and storytelling falls under the pre-production stage. The five key stages of film production are Development, pre-production, production, post-production, and distribution. Visual effects (VFX) and Computer-Generated

Imagery (CGI) fall under pre-production and post-production because the process of creating visuals that are impossible to achieve will be planned and discussed. Pre-visualization will be created to provide an idea for future Budgeting and to inform decisions during production while shooting. Impossible worlds and breathtaking sequences propel their stories forward with the assistance of a VFX Supervisor, who helps achieve realistic visuals through the integration of live-action footage and visual effects (VFX), as well as Computer-Generated Imagery (CGI).

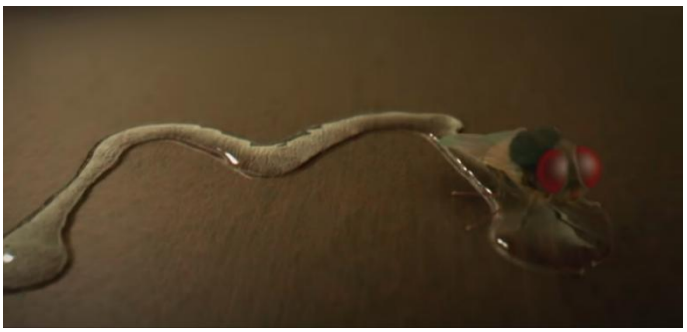
How Visual effects (VFX) and Computer-Generated Imagery (CGI) techniques contribute to Storytelling

The movie *Eega* is a compelling revenge drama told through the eyes of a non-human protagonist, a housefly, utilising Computer-Generated Imagery (CGI). This one line itself gives the direction team and the Screenplay team a challenging task till the final draft of the story. The film tells the story of Nani, a young man who is murdered by the antagonist, Sudeep and then reborn as a housefly through Computer-Generated Imagery (CGI). Through visual effects (VFX) and Computer-Generated Imagery (CGI), the housefly is brought to life with stunning visual effects that feature intense detailing and realistic movements. The housefly's realistic interaction with the character Bindu and its environment has been seamlessly merged with live-action footage. These visuals help the audience connect with the housefly, a Computer-Generated Imagery (CGI) element, making the revenge story more gripping and emotionally strong.

Character Development

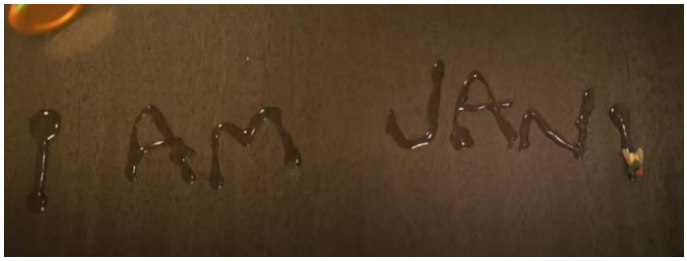
The character in *Eega* movie has been emotionally connect with audience and the housefly Computer-Generated Imagery (CGI) faces frustration while giving pain and torture to the villian when he escapes from it all and it overcomes obstacles which is given by the villian. The Housefly is a 3D model; the animations, including facial expressions, movements, and body language, are crafted with cutting-edge technology. Facial expressions: A person's small movements on the face can convey a wide range of emotions—for example, Happiness, anger, and others. In Animation, a character is too challenging to create, and for an insect in this movie, the housefly, which is a Computer-Generated Imagery (CGI) element (3D Model), is too difficult not only to create too challenging to find the expression of a housefly and movements and body language. The Eega movie production crew has conducted extensive research to create authentic expressions, movements, and body language. The combination of Visual effects (VFX) and Computer-Generated Imagery (CGI) elements in live-action footage gives the housefly a personality that resonates with viewers, strengthening emotions and creating involvement in the protagonist's journey. Moreover, Visual effects (VFX) and Computer-Generated Imagery (CGI) enable

exaggerated and believable action sequences, such as the housefly dodging attacks and devising clever tactics to inflict pain and torture on the villain. These sequences contribute to the housefly's growth as a character, particularly in the transition sequence where the helpless insect faces more obstacles from the villain and emerges as strong and talented, thanks to the help of the character Bindu in seeking justice.



Emotional Depth

In *Eega*, the depth of Visual effects (VFX) and Computer-Generated Imagery (CGI) creates a more emotional impact. Due to the housefly's facial expression and the emotional sequence with the character Bindu, where the housefly sacrifices its life to save Bindu, the scene will be too immersive, and the audience will become too emotional, resulting in a significant impact. The film was released in Telugu and dubbed into all other languages, including the theatre response video, which the director himself, S. S. Rajamouli, had the audience experience when it was released in Los Angeles, United States. The director himself, S. S. Rajamouli, is already famous for his emotionally charged storytelling and for making the audience immerse themselves in his movies, most notably Magadheera. The housefly's interactions with its former love, Bindu, played by Samantha Ruth Prabhu, are crafted with sensitivity. The sensitivity of the scenes tells the story and makes the audience more immersive. Scenes where the housefly communicates using objects, write messages, or expresses longing through gestures are emotionally powerful moments facilitated by Visual effects (VFX) and Computer-Generated Imagery (CGI) in live-action footage. These instances ensure that the audience remains emotionally invested in the narrative. The antagonist, Sudeep, and housefly-driven visual effects (VFX) and Computer-Generated Imagery (CGI) sequences in live-action footage create psychological tension, reinforcing the film's central conflict. The antagonist Sudeep and housefly combination scene, where the housefly tries to kill him multiple times, is emotionally gripping and engages the audience in the movie. Especially the combination sequence between the character Bindu and the Housefly in the movie, where the housefly reveals that it's him, Nani, who rebirths as a housefly. This prompts the character Bindu to break down, thinking about Nani, and using her tears, the housefly (Nani, the protagonist) writes his name and explains the character Bindu. The emotional depth of the storytelling and VFX gives more impact to the scene. It creates gripping and emotionally charged sequences, where Subtle facial animations and expressive gestures, despite the lack of dialogue, convey the housefly's emotions, allowing the audience to connect effectively.



Conclusion

The *Eega* movie demonstrates how Visual effects (VFX) and Computer-Generated Imagery (CGI) can elevate storytelling by immersing the audience in impossible worlds. Breathtaking sequences and animations, along with expressive gestures, make the film successful. The film's immersive experience is primarily attributed to its innovative digital effects and elements, achieved through collaborative Visual Effects (VFX) and Computer-Generated Imagery (CGI), which effectively bridge the gap between fantasy and reality. By enhancing character development and emotional depth in storytelling, Visual effects (VFX) and Computer-Generated Imagery (CGI) play an integral and collaborative role in engaging audiences and strengthening narrative immersion.

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