Indiana Jones: A look into the visual effects challenges and slight of hand for

Crystal Skull

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1 Introduction

Much has changed in the world of visual effects over the past nineteen years and yet the goal with Indiana Jones and the Kingdom of the Crystal Skull was to stay true to physical, tangible action captured in the original trilogy. For the latest installment, ILM artists worked with Steven Spielberg to create the hair raising adventure that fans have come to expect while letting Steven capture as much as possible in-camera. While using every trick in the book to complete the work, ILM needed to develop completely new techniques and software to accomplish the climatic ending.

2 Abstract

This sketch will highlight the wide range of challenges the visual effects team faced in creating the 540 visual effects shots (on screen for some 48-minutes) in this film. Although the team developed cutting edge technology to solve many of the issues that had to be dealt with they were also careful to remain true to the original films. ILM made the decision early on to utilize miniatures for a number of sequences but they weren’t necessarily used as you might have thought. Constructing the short-lived town known as Doomtown used both practical miniatures and digital technology to achieve the resulting sequence. It was also necessary to develop advanced smoke and particle simulation techniques for the iconic nuclear event sequence.

Among the challenges was creating a digital jungle. The approach, capture as much in-camera on location as possible and then augment that reality with digital jungle that integrated seamlessly. What’s an Indiana Jones film without treacherous creatures that the characters have to contend with? This time around it’s ants... over 200,000 of them to be exact. Creating the thousands of swarming jungle ants that had to attack and interact with the actors in a believable manner was a challenge all to itself.

To create the vast destruction necessary on such a grand scale the team used newly developed ‘fracture’ technology that allowed for the volumetric fracture of intricate geometry in a realistic manner. A challenge that loomed for the duration of the project was the valley destruction sequence. We’ll take a look at the mixture of miniature elements, digital environment and simulated water for the film’s climactic finale.

3 Conclusion

In the end, the work on Indiana Jones and the Kingdom of the Crystal Skull proved both challenging and rewarding at the same time. It allowed ILM to further develop its pipeline and explore new and unique ways to solve problems. We hope to share the processes and experiences we had on location and in post production to give attendees a better understanding of our "Indiana Jones" adventure.

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