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*Includes an
exclusive article
on Sabrina Ratto*

Virtual Production
of Filmmaking

**Deep X 3D
Technology**

Aeronautics
& Cinematics

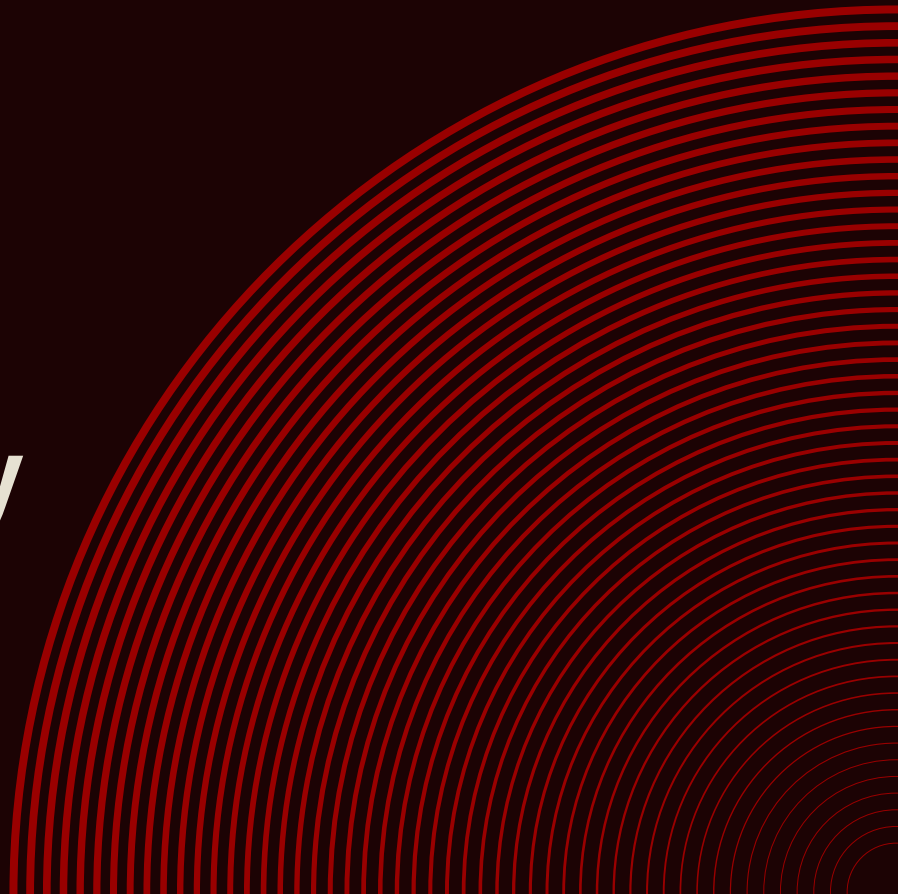


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AERONAUTICS & CINEMATICS

BY CHAD G. PETE

Aerial cinematography isn't a new concept. For decades, filmmakers have utilized helicopters, cranes, and even hot air balloons to capture stunning overhead shots. However, these methods often came with significant logistical and financial constraints, limiting their accessibility to only the most well-funded productions.

Enter the drone – a compact, agile, and cost-effective alternative that has democratized aerial filmmaking. With advances in drone technology, filmmakers can now capture cinematic shots with unparalleled ease and precision. From small indie productions to big-budget blockbusters, drones have become indispensable tools in the filmmaker's arsenal.



THE BIRD FRAME

Curious about drone cinematography? Jane Cormick has started a course that you can participate in on dronecormick.ca/thebirdframe

CREATIVITY DONE FROM UP ABOVE

One of the most significant advantages of drone cinematography is its ability to provide unique perspectives that were previously unattainable. With drones, filmmakers can effortlessly maneuver through tight spaces, soar over rugged landscapes, and even dive into the heart of bustling cityscapes. This newfound freedom allows directors to unleash their creativity, crafting shots that captivate audiences.

From sweeping establishing shots that set the scene to intimate close-ups that draw viewers into the action, drones offer filmmakers unparalleled versatility. Whether capturing the raw beauty of nature or the kinetic energy of set in urban environments, drones can and will empower filmmakers to push boundaries for visual storytelling in new ways.

BOUNDARIES TO PASS IN STORYTELLING

Beyond its technical capabilities, drone cinematography has fundamentally transformed the way stories are told on screen. By providing audiences with new perspectives and vantage points, drones enhance immersion and emotional resonance, allowing viewers to experience the narrative in a more visceral way.

In action sequences, drones can capture dynamic chase sequences and high-octane stunts with breathtaking intensity. In dramatic scenes, drones can elevate tension and suspense, heightening the emotional impact of pivotal moments. Whether used to evoke awe, excitement, or introspection, drones have become indispensable tools for filmmakers looking to push the boundaries of storytelling.

THE HISTORY

Virtual production has been around for a couple of years, but as we head into the future, **the new technology of filmmaking has come such a long way and continues to do so.**

Back in the 20th century, it involved a big LED screen showcasing non-existing locations that was made possible for people to shoot. **On the big screen, it is a film projector, showing pre-recorded footage.**

This caused a few efficiencies since producers still preferred the blue or green screen. Certainly, it was also an issue, since in the editing process, lighting and reflected different colours would be hard to remove in some cases. For example, a blue sky is fine, because they wouldn't need to do much with removing some blue spills.

As for the actors who play their role with the big screen, projecting light onto their faces to give one side light and the other dark or maybe even giving different colors was still difficult to maintain, because it shows the low resolution by today's standards, was still not good quality CGI.



VIRTUAL PRODUCTION OF FILMMAKING

THE PROJECTION OF A BIG SCREEN

THE CREATION

As for the production of **Rogue One: A Star Wars Story in 2016**, the original 1977 original's visual effects were striking. With the evolution in technology, virtual reality was made possible and the concept of replicating reality was brought to life. It was a great challenge for **Gareth Edwards, the director for the movie Rogue One**. Still experimenting on set, he was able to bring a documentary style of filmmaking to highlight space battles and visual effects sequences. Even with the visual succeeding, storytelling had to be taken good care to strike people' curiosity. With the big help of the giant screen, **John Knoll, the visual effects supervisor**, was able to try all sorts of virtual spaces and the extant of virtual cameras. This result into having a good view of scaling the sense of a scene.

Although, it isn't a movie, The Mandalorian used a big LED screen. Behind the actors to capture the execution and the visuality of the story. They've been using the term "**volume**", which means the motion capture and the scenery is taken place. Diving deep into the it, even with that big of help, the camera movement are limited to dolly shots or even other prepared pre-selected shots. This results the lighting being change often to adjust to the atmosphere of the storyline. When filming, everything has to be set in place including the lights the actors and especially the cameras, because making one move to it will be show that behind the actors is a big flat screen.

JAMES CAMERON CAPTURING THE DEPTHS IN STUNNING CLARITY

BY JESSICA MENGLIONE

THE DEEP X 3D ADVANTAGE

Enter the **DeepX 3D**, a groundbreaking innovation in underwater cinematography. As the world's first and only submersible 3D beam splitter, it represents the pinnacle of underwater housing technology. Renowned filmmaker **James Cameron** relied on the DeepX 3D during the production of "**Avatar: The Way of Water**" to capture stunning underwater 3D sequences.

What sets the DeepX 3D apart is its utilization of submersible Nikon Nikonos lenses, ensuring unparalleled optical performance beneath the waves. With the ability to adjust the stereo base (IO) from 0 to 75mm, it's particularly suited for capturing smaller subjects and close-ups where a fixed stereo base would be too expansive.

Unlike its predecessors, the DeepX 3D is compact and lightweight, weighing under 30 kg when ready for a dive. Previous underwater housings were cumbersome, requiring cranes for transportation and offering limited image quality due to the constraints of flat ports. The DeepX 3D shatters these limitations, delivering **full 8K resolution** with corner-to-corner clarity.

But the DeepX 3D isn't just about resolution—it also eliminates distortions and aberrations, ensuring stereoscopic images are free from vertical disparities that can cause eye strain. This is achieved through its unique design, which utilizes a submerged beam splitter to maintain optical integrity.



REDEFINING UNDERWATER FILMMAKING

One of the most impressive features of the DeepX 3D is its **ultra-wide angle capability**, exceeding 80° with a variable stereo base. Traditional systems using housed beam splitters are hampered by light refraction between air and water, limiting their field of view to around 60°. By employing a submerged beam splitter, the **DeepX 3D eliminates refraction, chromatic aberrations, radial distortions, and astigmatism, resulting in pristine image quality.**

The optical excellence of the DeepX 3D is protected by a unique submersible stereoscopic beam splitter, ensuring unparalleled performance in underwater filmmaking. (US Patent No. US 8,879,899 B1).

In the kaleidoscopic realm where art and technology converge, Sabrina, a luminary in the realm of digital creativity, orchestrates a mesmerizing symphony of pixels and imagination. As we delve into her innovative projects, a tapestry of discarded objects, reimagined landscapes, and thought-provoking concepts unfolds, painting a picture of a truly avant-garde artist navigating the ever-evolving landscape of digital expression.

Sabrina's journey into the intersection of the physical and the virtual begins with a **mastery of 3D scanning and Google Earth satellite data**. Her artistic toolkit transforms these technological facets into a canvas where landscapes, both real and imagined, dance in a harmonious tandem.

In the project titled **"OBJ - World Object,"** Sabrina draws inspiration from the forlorn beauty of abandoned cars in the remote forests of Quebec. Through meticulous scanning and creative reconstruction, she breathes new life into these artifacts, metamorphosing them into profound architectural runes. A delicate juxtaposition emerges—a poignant commentary on the intersection of nature, nostalgia, and the inevitable decay of human creation.



With **"Inflor-Inflorescence,"** Sabrina delves into the digital afterlife of electronic waste. In a future where humans are mere echoes, she envisions a coexistence between hybrid creatures and the remnants of our discarded devices. The project is not just an exploration of discarded circuits; it's a provocation—an artistic statement on the inescapable bond between humanity and its technological offspring.

SABRINA RATTE'S DIGITAL WORLDS BEYOND REALITY

BY JAMES RYAN



NAVIGATING THE DANCE BETWEEN REAL AND VIRTUAL

Borrowing from the philosophical musings of Michel Serres, Sabrina's work poses fundamental questions about the nature of objects. In a world teeming with discarded remnants, she contemplates the permanence of our impact on the environment. **The creations become more than sculptures—they become metaphysical expressions of the interplay between humankind and the artifacts we leave behind.**

As Sabrina ushers us into her techno-imaginative odyssey, she emphasizes the importance of grounding oneself in physical reality. While her work seamlessly integrates technology, she advocates for a symbiotic relationship, where digital realms enhance, rather than overshadow, the tangible world.

In a nod to the potential of artificial intelligence, Sabrina draws parallels to Holly Herndon's

venture into an open-source voice app. The artist envisions AI not as an adversary but as a creative ally, encouraging fellow artists to embrace the transformative power of technology in pushing the boundaries of their craft.

Sabrina's artistic voyage transcends the conventional boundaries of digital expression. Through her innovative use of technology and profound philosophical reflections, she invites us to reconsider the nature of reality and our place within it. In her hands, discarded objects become vessels of profound narratives, and electronic waste births hybrid creatures a testament to the boundless possibilities when creativity meets the digital frontier. Sabrina's art is not merely a visual feast; it's an exploration of the human condition in a world both tangible and imagined, a testament to the transformative potential of techno-creativity.



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