How has CGI transformed visual in media and altered audience perception of realism and creativity?

Introduction

Computer-Generated Imagery, or CGI, is all about making visual content using digital technology. It's widely used in movies, video games, ads, and various other media like anime. In the beginning, CGI was basic, with simple graphics like wireframes and straightforward animations, mostly because of the limited tech available back then. But over the years, CGI has changed a lot, evolving from flat images to incredibly realistic environments that look just like the real world. This development has made CGI an essential part of the entertainment industry, as well as in advertising and virtual experiences, allowing creators to showcase detailed and vibrant scenes that really expand what we can see visually.

Purpose of the Review

This review will investigate how CGI has significantly changed visual media and how audiences view realism and creativity. By tracing the development of CGI, it will analyze how it has broadened the possibilities of visual storytelling, pushed past traditional limits and changed how viewers understand both real and imaginary worlds. Additionally, it will discuss how the flexibility of CGI impacts creativity in media production and its influence in establishing new benchmarks for realism that can both engage and sometimes confuse audiences.

Statement

CGI has significantly changed modern media in two main ways: it has made visuals more realistic than ever before and has also opened new path for creativity. This technology allows creators to produce stunning images that were previously unimaginable. In this review, we will explore how these two effects have transformed visual media, with CGI raising the bar for what audiences expect in terms of realism and expanding the creative options for artists and storytellers.

Historical Context and Evolution of CGI

Early Development

The origins of computer-generated imagery (CGI) can be traced back to the 1970s and early 1980s, a period marked by advancements in digital imaging and computer graphics that laid the foundation for modern applications. At first, CGI was limited to simple wireframe models and low-resolution animations, restricted by the era's processing power and software technology (Das, 2023) However, several innovative projects showcased the potential of CGI. A notable example is the film Tron (1982), which was among the first to incorporate computer graphics into mainstream cinema, demonstrating how CGI could create new visual experiences that departed from traditional filmmaking techniques. The CGI used in Tron was groundbreaking, even though it was still in its initial stages, as it revealed the possibilities of crafting computer-generated environments and visuals that exceeded the capabilities of practical effects.

The release of Jurassic Park in 1993 represented a critical moment in the evolution of CGI within the film industry. Steven Spielberg's innovative application of CGI to render realistic dinosaurs transformed filmmaking, demonstrating that CGI could serve not merely as a gimmick but as an essential narrative device that enhances realism and engages viewers in unprecedented manners. Jurassic Park established a benchmark for the realistic simulation of living creatures and environments, offering a model for numerous films and sectors to emulate (Pearson, 2023)

Technological Milestones

In the following decades, CGI technology experienced significant advancements, marked by innovations that enhanced its realism, versatility, and user-friendliness. Notable achievements included the creation of 3D modeling and rendering software, which empowered creators to construct intricate digital models and replicate realistic textures, lighting, and shading. Programs such as Autodesk's 3ds Max and Maya provided artists with the tools to produce detailed, lifelike visuals that could compete with the quality of traditional film (Amba, 2023)

Motion capture is a game-changing technology that has enabled CGI to accurately portray the details of human movement and emotions. This innovation has played a crucial role in crafting lifelike and expressive CGI characters, exemplified by Gollum in The Lord of the Rings trilogy. Andy Serkis's performance brought Gollum to life, highlighting how far CGI can go in expressing complex feelings. As technology continues to evolve, CGI gets even better at replicating real life, helping creators build immersive worlds and characters that seem genuine and believable (Adobe, 2024)

Modern-Day CGI

CGI has become a crucial part of visual media today, deeply integrated into movies, television, video games, and advertising. What used to be groundbreaking has transformed into a vital resource that opens endless creative opportunities. With the latest developments in artificial intelligence and machine learning, CGI has improved even more, making it easier for artists to create incredibly realistic images in a shorter amount of time. Now, CGI can

also work alongside augmented and virtual reality, producing engaging experiences that mix the digital and real worlds (Das, 2023).

In today's media, CGI has become so advanced that viewers might not even notice they're seeing computer-generated images. Whether it's complete landscapes or actors who look younger thanks to digital effects, CGI has achieved such a realistic quality that it can make it hard to tell what's real and what's not. The widespread use of CGI has changed what audiences expect in terms of visual quality and has also expanded the creative possibilities for filmmakers, game developers, and advertisers, allowing them to realize their most daring concepts without being limited by the physical world (Das, 2023)

Transformation in Media Formats

The introduction of CGI has profoundly transformed not just individual films and video games but has also redefined entire media formats and the ways in which audiences interact with them. In the beginning, CGI was mainly utilized in blockbuster films due to its high costs and technological requirements, which limited its broader application. However, as technology progressed, CGI began to permeate other media formats, including television, video games, and anime, significantly expanding the reach and influence of computer-generated content across various platforms (Adobe, 2024).

CGI has revolutionized television by enabling the production of stunning visuals even with limited time and money. This change opened the door for fantasy and sci-fi shows like Game of Thrones to vividly portray intricate imaginary worlds that would have been unfeasible with traditional TV budgets (Morrison, 2021). Consequently, we are now experiencing a golden age of visually impressive television that competes with high-budget movies, altering what viewers expect in terms of visual quality across various media (Adobe, 2024).

Anime, which is usually recognized for its hand-drawn style, has started to use CGI to enhance its visual range and make production easier. In the past, CGI in anime often looked limited and stood out in a way that some viewers found distracting. However, with recent improvements in CGI technology, anime studios have been able to mix CGI with traditional animation more effectively, resulting in exciting scenes that would be tough to create by hand. Series like

Land of the Lustrous and Beastars display how CGI can be used to create smooth, detailed animations and complex camera movements that add a unique touch to storytelling.

Audience Perception of Realism

CGI has significantly changed how viewers see realism in visual media. In the past, when CGI was still developing, people could easily spot its flaws; the graphics often looked fake or unconvincing because of the limited technology available at the time. However, as CGI advanced, it achieved such elevated levels of photorealism that it can now make it hard to tell what's real and what's not. This improvement in CGI has shifted what audiences expect regarding realism in movies, TV shows, and video games (Louis, 2014).

One major change in how audiences view CGI is its ability to create incredibly realistic environments, objects, and even human characters. This idea is often referred to as the "uncanny valley," which shows how viewers can feel both intrigued and uneasy about CGI characters that are almost human but not there. This effect is especially noticeable in movies that use hyper-realistic CGI for human figures, like The Polar Express or Beowulf, where the almost lifelike faces and movements can lead to mixed feelings among the audience. The uncanny valley effect highlights the tricky balance between realism and believability that CGI needs to strike to keep viewers engaged (Louis, 2014).

Creativity and Artistic Freedom

CGI has opened amazing opportunities for creativity and artistic expression in visual media. It enables creators to turn their wildest ideas into reality without the constraints that come with traditional filmmaking. Thanks to CGI, filmmakers, game designers, and animators can dream up and design entire worlds, unique creatures, and stunning effects that would be too difficult or expensive to create in real life. This newfound freedom has expanded the range of stories that can be told and the ways they can be visually portrayed.

In movies, CGI allows directors to go beyond the limits of classic storytelling by building entire worlds that draw viewers into original stories. A great example is Avatar, which presents an alien environment filled with detailed ecosystems,

creatures, and landscapes that would be tough to create using just practical effects. James Cameron's heavy reliance on CGI in Avatar not only made for an amazing visual experience but also helped him share his creative ideas in ways that traditional effects could not match. Likewise, films in the Marvel Cinematic Universe use CGI to bring superheroes, cosmic locations, and complex fight scenes to life, which have become defining features of the genre and broaden the scope of visual storytelling.

Anime has also gained a lot from the freedom that CGI provides. Recently, animation studios have started using CGI to produce complex action sequences, detailed character designs, and rich backgrounds that would take a lot of time to create with just hand-drawn methods. A notable example is Demon Slayer, which uses CGI to enhance its colorful and energetic fight scenes, mixing traditional animation with digital techniques to make the visuals even more impressive. This method gives anime creators the chance to introduce new ideas and styles to the genre, reaching a level of excitement and detail that was hard to achieve before (Louis, 2014).

Conclusion

In conclusion, CGI has fundamentally transformed our experience of visual media. It has reshaped our perception of realism, unlocked new creative possibilities, and provided artists with greater freedom in film, gaming, and anime. By blending the digital and physical realms, CGI has elevated the standards for visual quality and immersive storytelling. Its evolution from basic graphics to intricate, lifelike imagery has not only shifted audience expectations but also empowered creators to bring their most imaginative concepts to life, enriching the media landscape with a wealth of limitless narratives.

HTML/CSS

From the start I started making separate files for HTML and CSS. This way everything is organized, which helps with time management and productivity. Not only that separated everything into little bits, so it was easier to customize the CSS file also to easily add functions to customize further.

```css
html {
    background-image: linear-gradient(to top, ■#ff7a7a, ■#ffb3b3); /* Gra
    background-size: 400% 400%; /* Enlarges the gradient to animate it */
    animation: gradient 10s ease infinite; /* Smooth animation */

    margin: 0; /* Ensures the full height of the page is covered */
}

@keyframes gradient {
    0% { background-position: 0% 100%; }
    50% { background-position: 100% 0%; }
    100% { background-position: 0% 100%; }

}
```

Gradient Background: This gives a gradient look that begins with a darker shade at the bottom (#ff7a7a) and gradually lightens up to a softer hue (#ffb3b3). Animation: The gradient smoothly transitions over 10 seconds and keeps looping endlessly, creating a lively, moving background. No Margin: Setting the margin to 0 means there are no extra spaces around the page, letting the gradient fill the whole screen. Animation Keyframes: This guideline explains the movement of the gradient. It begins at the bottom-left corner (0% 100%), travels to the top-right corner (100% 0%), and then comes back to where it started.

```css
.Titlecontainer{
    display: flex; /* Enables a flexible layout *
    justify-content: center; /* Centers the conte
    align-items: center; /* Centers the content v
    background-color: ▢#222; /* Updated to a dar
    width: 80%; /* Makes the container responsive
    max-width: 960px; /* Prevents the container f
    padding: 20px; /* Adds spacing inside the con
    margin: 20px auto; /* Centers the container a
    border-radius: 25px; /* Rounds the corners sl
    box-shadow: 0px 4px 10px ▢rgba(0, 0, 0, 0.5)
    color: ◼white; /* Ensures text inside is rea
    font-family: 'Arial', sans-serif; /* Sets a m
    font-size: 24px; /* Customizable text size fo
    text-align: center; /* Centers text within th
}
#title{
    font-family: 'Arial', sans-serif;
    color: ◼white;
    font-size: 50px;
    text-align: center;
```

Flexbox Design: Uses Flexbox to align the content in the center, both side to side and up and down. Visual Improvements: The container features a dark gray background (#222), rounded edges, and a gentle shadow for a sleek, contemporary appearance. Font Style: The text within the container is white, set at a size of 24px, and uses the Arial font family.

```css
.navcontainer {
    background-color: ◼#ff7a7a; /* Soft red background */
    width: 956px; /* Make it full width to adjust to screen
    max-width: 960px; /* Prevent it from being too wide */
    margin-left: auto;
  margin-right: auto;
    display: flex;
    justify-content: center;
    align-items: center; /* Vertically align the links */
    border-radius: 25px; /* Rounded corners for a softer loo
    box-shadow: 0px 4px 15px ▢rgba(0, 0, 0, 0.1); /* Subtle
}

.navcontainer a {
    font-size: 20px; /* Slightly smaller text for better rea
    padding: 15px 30px; /* Larger padding for clickable area
    text-decoration: none;
    color: ◼white; /* Text color to stand out on the backgr
    font-weight: bold; /* Make text bold for better emphasis
    text-transform: uppercase; /* Capitalize text for a mode
    margin: 0 10px; /* Equal spacing between the links */
    transition: background-color 0.3s, transform 0.2s; /* Sm
}
```

```css
.navcontainer a:hover {
    background-color: ▢rgb(93, 0, 112);
    border-radius: 30px; /* Slightly more
    color: ◼white; /* Ensure text remai
    transform: translateY(-2px); /* Subtl
}
```

Adjustable Design: Employs Flexbox to align the navigation links in the center. Visual Elements: The container showcases a rounded red background with a light shadow, giving it a contemporary look. Links are designed with a bold, all-caps font in white. When you hover over them, there is a smooth transition effect that makes the interaction feel more engaging. The background of the link turns purple when you hover over it, and the link rises a bit, creating a more engaging experience.

```css
.Frame {
    display: flex;
    justify-content: center
    align-items: center;
    margin: 30px auto;
    max-width: 95%;
    padding: 10px; /* Space


}

/* Styles for the iframe
.Frame iframe {
    width: 90%; /* Full wid
    height: 980px; /* Incre
    max-height: 1500px; /*
    border: none; /* Remove
    box-shadow: 0 4px 10px
    border-radius: 8px; /*
}
```

```css
h2 {
    font-size: 3rem; /* Eye-catching size
    margin: 40px auto; /* Balanced spacin
    text-align: center; /* Centers the te
    font-family: 'Georgia', serif; /* Ele
    color: ☐#4A4A4A; /* Softer dark ton
    line-height: 1.6; /* Comfortable line
    text-transform: capitalize; /* Neat
    letter-spacing: 2px; /* Subtle spacin
    text-shadow: 3px 3px 6px ☐rgba(0, 0
    border-bottom: 3px solid ◼#ff7a7a;
    padding-bottom: 10px; /* Creates spac
    width: fit-content; /* Makes the bor
    margin-left: auto;
    margin-right: auto; /* Centers the e
}
```

```css
.footer {
    background-color: ◼#ff7
    color: ◻white;
    text-align: center;
    padding: 20px 0;
    margin-top: 20px;
}
```

```css
h3 {
    font-size: 35px; /* A
    font-weight: normal; /
    color: ☐#444; /* Sli
    margin-top: 20px; /* S
    margin-bottom: 15px; /
    text-align: center; /*
    line-height: 1.4;
}
```

```css
p {
    font-size: 22px; /* Sl
    color: ☐#555; /* Ligh
    line-height: 1.6; /* I
    margin-top: 20px; /* S
    margin-bottom: 20px; /
    text-align: justify; /
    max-width: 800px; /* L
    margin-left: auto; /*
    margin-right: auto; /*
}
```

I have made each of the title tags uniquely. Such as the headlines and paragraph. The most important part is the Frame which is the animation shown on the website. This website (Juxtapose,2024) helped me with the code. The 2d animation shown on the website is created by me and the other one was taken with an Apple Camera. And to end with it finished with the footer. For the HTML

part it is simply basic just putting the skeleton of the website. Here is an example.

```html
<!DOCTYPE html>
<html lang="en">
  <head>
    <meta charset="UTF-8" />
    <meta name="viewport" content="width=device-width, initial-scale=1.0" />
    <link rel="stylesheet" href="style.css" />
    <title>Conclusion and References</title>
  </head>
  <body>
    <header class="Titlecontainer">
      <h1 id="title">Conclusion and References</h1>
    </header>
    <nav class="navcontainer">
      <a href="index.html">Home Page</a>
      <a href="screen2.html">Previous Page</a>
    </nav>
    <header>
      <h3>Conclusion</h3>
      <p class="conclusion">
        In conclusion, CGI has fundamentally transformed our experience of
        visual media. It has reshaped our perception of realism, unlocked new
        creative possibilities, and provided artists with greater freedom in
        film, gaming, and anime. By blending the digital and physical realms,
        CGI has elevated the standards for visual quality and immersive
        storytelling. Its evolution from basic graphics to intricate, lifelike
        imagery has not only shifted audience expectations but also empowered
        creators to bring their most imaginative concepts to life, enriching the
        media landscape with a wealth of limitless narratives.
      </p>
      <div class="Frame">
        <iframe
          frameborder="0"
          class="juxtapose"
          src="https://cdn.knightlab.com/libs/juxtapose/latest/embed/index.html?uid=8e31ac90-a13e-11ef-
        ></iframe>
      </div>
      <h3>References</h3>
```

```html
      target="_blank"
      >Click Here for The link</a
      >
    </li>
    <li>
      Das, S. (2023, November). THE EVOLUTION OF VISUAL EFFECTS IN.
      <a
        href="https://www.researchgate.net/profile/Soumen-Das-22/publication/375989472_THE_EVOLUTION_OF
        target="_blank"
        >
        >Click Here for The link</a
        >
    </li>
    <li>
      Louis, C. (2014, February 17). A Study of How the Technological
      Advancements. p. 108.
      <a
        href="HTTPS://D1WQTXTS1XZLE7.CLOUDFRONT.NET/80609765/CLARE_20LOUIS_FACIAL_20MOTION_20CAPTURE_20
        target="_blank"
        >
        >Click Here for The link</a
        >
    </li>
    <li>
      Pearson, S. R. (2023). The Evolution of Computer Generated Images and
      Special Effects Design in the Jurassic Park Trilogy. Patti McCarthy.
      <a
        href="https://poetcommons.whittier.edu/scholars/28/"
        target="_blank"
        >
        >Click Here for The link</a
        >
    </li>
    <li>
      Juxtapose,
      <a href="https://juxtapose.knightlab.com/" target="_blank"
        >Click Here for The link</a
        >
    </li>
  </ul>
</header>
<footer class="footer">
  <p>&copy; 2024 Md Shaill Miah. All Rights Reserved.</p>
</footer>
</body>
</html>
```

References

Adobe. (2024). CGI animation explained: definition, history and examples.

Amba, R. (2023). The Influence of the Artificial Intelligence based CGI on the growth of the Film Industry.

Das, S. (2023, November). THE EVOLUTION OF VISUAL EFFECTS IN.

Louis, C. (2014, February 17). A Study of How the Technological Advancements. p. 108.

Pearson, S. R. (2023). The Evolution of Computer Generated Images and Special Effects Design in the Jurassic Park Trilogy. *Patti McCarthy*.