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3D Internet with Artificial Intelligence

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ABSTRACT

It is hard to imagine a world without the Internet these days. Now that the World Wide Web has become so large and valuable, it was formerly a modest and non-interactive data storage service. It is possible to improve current activities that are related to the virtual world to a greater extent. There is a digital entity associated with everything we do in our daily lives. In the past several years, the Internet and 3D stereoscopic displays have made enormous progress. When the two are merged, a new level of user experience may be attained. The notion of a 3D Internet has yet to be realized and requires browsers with depth awareness and artificial intelligence (AI). As a result of the inclusion of this attribute, the Internet of Things, which is the subject of this paper, may become a reality. Three-dimensional internet characteristics, implementation techniques, applications and pros and disadvantages are all explored in this study. In this article, we want to provide a clear picture of 3D Internet and its probable advantages, which obviously outweigh the amount of money needed to execute it.

1. Review of Literature

Web pages, photos, and graphics on the Internet all have a two-dimensional existence. The moment has come for the Internet to be upgraded to a more advanced, interactive, and all-encompassing network[1]. There has already been a substantial amount of work done in this area. Research shows that 3D Internet can be implemented, but the technology and cost requirements will make it challenging to deploy. Papers addressing 3D Internet's benefits, security, technological challenges, and applications have already been published. The goal has not been met, despite all of the efforts put forward. In light of this, it is obvious that more investigation into this area is required[2]. 3D Internet and IoT, 3D Internet and Augmented Reality and depth perception with artificial

intelligence are just a few of the unique ideas that are covered in this paper's standard parts, along with our solutions and the present situation.

2. Introduction

The Internet is used by 42,4% of the world's population. More than 75% of the global population[5] will be online by 2015, according to the International Telecommunications Union[6]. 80 percent of homes in developed countries and 34 percent in developing countries will be connected to the Internet by the end of 2015 [7].

1.1 History of Web

This section explains how the Internet has evolved throughout time. 1.0, 2.0 and 3.0 are the three periods of the Internet's history that explain its evolution and advancement.

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1.2 Web 1.0

In the beginning, there was just the Internet. [4] There was just one or two developers that could supply stuff to the public. People could not publish their stuff to other peers at this point. One way to describe it would be to refer to it as a "read-only internet." When Web 1.0 was released, it had a number of drawbacks, all of which were addressed in Web 2.0.

1.3 Web 2.0

It used to be possible just to get information from the Internet through the web, but this changed when web 2.0 was introduced. As a result of this newfound freedom, people were finally able to express their thoughts and ideas. Orkut and Facebook, two early social networking platforms, were created during this era. People may now submit their personal information on these sites. In the digital age, blogs and forums had become commonplace.

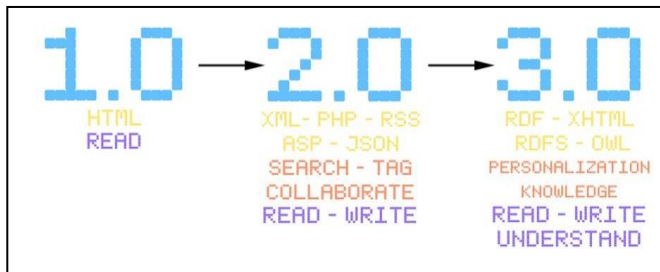


Figure1: Web1.0, Web2.0, Web3.0[2]

1.4 3D Internet

The combination of the Internet with 3D graphics is known as 3D Internet. An ombination like this will produce interactive and real time 3D visuals that can be accessed over the web. True-to-life graphics simulate a two-dimensional web page. Web 2.0 and 3.0 refer to the sections of the Internet that most of us now access. [8] Users' engagement and 3D experience will be elevated to a new level in the future generation of the Internet. As a result of its high level of detail and animation, this kind is often called "virtual reality." It is possible to imagine the Internet in 3D as a virtual reality. People who spend time online are more engaged and motivated than those who do not. It is a mix of the following:

- "Passivenessoftelevision
- Vastnessofweb

- Networkinglikeinthesocialmedia
- Stereoscopicexperienceof3Dmovies"

As a result, we might conclude that existing technology is a complete waste of time. It is due for an update or a replacement in the near future. In order to address these issues, 3D Internet may be used. The different uses of this technology have been described in great depth.

TechnicalnecessitiesandObstacles: Aside from the advantages, 3D Internet has drawbacks, such as the current network speed, device constraints and associated costs. These roadblocks impede the transition from 2D Internet to 3D Internet.

InternetSpeed: In order to fully integrate 3D Internet, Internet speed is a crucial challenge. This is in reference to the bandwidth limitations. High bandwidth is required for 3D Internet since it demands high-quality visuals and models. According to the "State of the Internet in 2015" study by "Akamai Technologies"[7], the global average Internet speed is 5.1 M bit/s. According to this study, only a small number of nations have access to high-speed Internet,

while others lack the bandwidth required for 3D Internet. This means that despite the fact that some nations have fast Internet, most cannot handle 3D Internet. Thus, the technique is difficult to apply completely[9].

Hardware: We utilize a 2D Internet, which requires the usage of a standard monitor to display properly. This means we will need displays that can display 3D visuals as we transition from 2D Internet technology. For these 3D photos, we will need additional technologies. Such high-end models also demand a lot of RAM and a powerful graphics card to produce. Upgrades to the current system are thus required to accommodate this new technology on a global scale.

Cost: Overall implementation costs are likely to be substantial, as shown above in the first two arguments. As a result, many people may opt out.

2.Solutions

Speed: India is now ranked 130th in the world for the availability of high-speed Internet. As far as typical broadband Internet speeds are concerned, Google Fiber is the solution. [8] Google Fiber's 1 Gbit/s (1,000 Mbit/s) download speed is 100 times faster than what is currently available. In certain locations, it has already established a foothold, and it plans to become global.

Hardware: Use a Vision Station to address hardware concerns. As an alternative to more expensive 3D graphics gear, Vision Station offers a 180-degree ultra-wide perspective of the visual world in 3D, making it possible to enjoy a fantastic 3D experience online for considerably less money [9].

Glimpse into 3D Virtual World

For a while, virtual worlds like "Second Life" aimed to make 3D components accessible to the general public over the internet. A 3D virtual environment built by Linden Lab, Second Life is populated by actual people and populated entirely by custom locations made by the app's developers [10]. Oculus Rift headsets are also available for usage on the platform, which enhances the 3D sensation. Full 360-degree virtual world views are possible because of this gear. The 2D boxed image of traditional LED/LCD panels is a thing of the past thanks to its head tracking and motion detection capabilities. In order to avoid motion sickness, Linden Lab has included motion tracking technologies and a rapid reaction to minute motions in Second Life. It is possible to switch between a first-person and third-person perspective. Using a first-person viewpoint will allow players to see the environment through their avatar's perspective, making the game more immersive.

"3D Internet Meets the Internet of Things (IoT)"

Laptops, smartphones, and tablets are not the only devices we use to go online nowadays. This vast network is made up of anything that has an IP address and can thus be uniquely identified, whether it be life or nonliving. Examples include those who have cardiac implants that can be monitored over the Internet (e.g. The Internet of Things (IoT) refers to the concept that many embedded systems may now be accessible through the Internet and can send data (Internet of Things).

Augmenting Reality with 3D Internet

Virtual reality technology known as "augmented reality" (AR) attempts to imitate the physical world via computer simulation. augmented reality systems enhance the user's perception of the world around them by creating a virtual environment that provides more information about their surroundings. Many of these types of apps will be created, shared, and utilized as a result of the advent of the 3D Internet [12]. We should expect 3D

Internet to play a significant role in helping to improve the existing AR experience.

"Figure 3: User trying different outfits at a home 3D display"

Methods of Implementation

Software Approach

- 1) Depth perception with artificial intelligence"

Artificial intelligence is used to convert websites, graphics, and photos from 2D to 3D in Figure 5 and Figure 6, respectively. Think of a browser that does not need constant input like the ones we are used to now, a browser that can really reason. There is nothing more intelligent than a web browser that can discern the difference between two distinct colors and the depth of two distinct things. Such a browser is capable of comprehending a still picture presented on the screen, regardless of whether the items in it are close or far from the observer's view. A bullet is static picture is based on its x and y coordinates, for example, as we watch it fly across the screen. Now, a browser that can perceive depth may estimate the z coordinate of a moving bullet and show it accordingly when the bullet moves in the same direction. Because of this, the user can see the motion in 3D on the screen. User concerns regarding generic issues like screen resolution, platform dependence, etc. are becoming less and less relevant as browsers get more self-adaptive and responsive. An extra feature that may be integrated with a 3D web browser is the storage of an estimated depth or elevation for a particular object.

Conclusion

As a result of this article, we have examined the overall notion of the Internet's existing quality, as well as its history, future prospects, advantages, implementation techniques, and constraints. A look into the future shows us that 3D Internet will fundamentally alter our understanding of the Internet. Implementation costs pale in comparison to the benefits and potential uses that might be realized. 3D Internet can undoubtedly



meet the need for a pervasive and intelligent Internet. In the user-friendly, interactive, productive, and addicting markets, businessmen and investors are aware of the actual potential for their businesses and investments.

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