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A Brief Study of Utilization of Augmented Reality in Context with Modern Library

Anandagouda P Fakiragoudar

(Asst. Librarian), Karnataka state Rural Development and Panchayat Raj University,Gadag

Abstract: A 21st century library resembles a laboratory. The Right to Emergency (RA) opens a new chapter in the field of libraries. It has received a lot of attention in recent years and created something in the everyday community with the 2016 global Pokemon GO boom. AR has been around for over 60 years, but the term wasn't officially coined until 1990. A day away from turning fictional science fiction into science-based truth. It's a compelling technology that gives high-tech device users access to cutting-edge technology through cutting-edge technology. Virtual reality works with headphones, tablets, smartphones and even digital devices like PCs, the device contains software, sensors, and digital projections that create digital displays of physical things. The ability of AR is to improve what already exists makes it the perfect library. Given users 'expectations about libraries, professional libraries should be reoriented to the implementation of augmented reality applications more efficiently and effectively under the auspices of libraries - AR. Binary.
Keywords: Efficiently, technology, AR, Binary, augmented

I. INTRODUCTION

Artificial intelligence is the direct or indirect state in which an object is "enhanced" by computational data accurately measured by various sensory pathways such as sight, hearing, coupling, somatosensory, and olfaction. The main value of augmented reality is to incorporate elements of the digital world into our understanding of the real world. This is not only as easy to see as the data, but also due to the combination of joys that are considered part of the natural environment. The main indicator of the RA system is the fact that it is in line with the real world.

RAs can be created and used in a variety of ways. For example, Google Glass displays 2D images in bright glasses, while Microsoft's HoloLens combines 3D images of the surrounding world. Apps like Blippar, Zappar, and Aurasma lets you create AR content that can be accessed by small businesses, educational institutions and others. Many of Augaddamar's applications in libraries are now in the R&D segment, although they represent great opportunities for publishing digital library collections. RA applications can make connections attractive and professional.

Applications that include graphical data are suitable not only for library work, but also for online interaction with library items. The mobile application development application offers many features to integrate library resources into your data environment. Through new research and development efforts, the library can continue to expand its presence in this environment through enhanced reality applications.

A. Aim Of The Study
The main purposes of this work are:
1) A discussion of how to improve the real Increase application in the library.
2) Understand the challenges associated with implementing RA in your library.
Recognize RA activities in the world and India

II. VIRTUAL REALITY VS AUGMENTED REALITY

Virtual reality (VR) is a virtual reality device created by computer. The immersive atmosphere can resemble the real world and create a truly immersive experience. People who use physical devices can see anywhere in the artificial world, can look in all directions up, down, sideways, behind, moving in it, and in fact there are functions and physical creations, you can control it as follows. The most popular VR headsets include the Oculus Rift, Samsung Gear VR, HTC Vive and Google Daydream.

Caudell & Mizell stated that Augmented Reality (AR) is tantamount to a technology that merges computer generated simulations with real- world environment, placing them on top of real- world objects. It allows the digital components to blend with the actual environment in such a way that they enhance each other.

Table 1: Key differences between VR and AR

S. No.	Virtual Reality (VR)	Augmented Reality (AR)
1.	VR has taken over the real world with the artificial.	AR amplifies real life along with artificial images and adds graphics, sounds and smell in the similar way as the natural world itself.
2.	Everything around the user is devloped by the system. This may be displayed inside a blank room, headset or some other device that may allows the user to feel presence of the virtual environment.	User is not entirely separated from the reality.
3.	It forms immersive, computer generated ambience that replaces real world.	It is nearer to the real world.
4.	In this case, it is tough to find the difference between what is real and what is virtual.	It helps people to interact with both the worlds.
5.	It forms an entirely different virtual space	It is a blend of the real world and the virtual world.
6.	This is usually achieved by wearing a helmet or goggle.	This is generally achieved by holding a smart phone in front of you.
7.	More advanced screen processor.	Less advanced screen processor.

III. FACTS APPLICATIONS (AUGMENTED REALITY) APPLICATIONS USED IN LIBRARIES:

There are some specific augmented reality applications which can boost the efficiency of library's existing workflows. They are as follows:

A. Aurasma

This advanced AR application was developed by Techan Adam Company in Cambridge, UK in 2011 and was recently acquired by Hewlett-Packard. Dunleavy and Chris say they can see and interact with the world in new ways. With Aurasma, every picture, object, or even place can have its own nature. Aura can be as simple as a video or a link to a web page or complex as a real 3D animation. To use Aurasma, the first step is to download the Aurasma app, you must have access to your mobile phone or tablet. When the app is downloaded, the user creates original content (called "aura") or selects a pre-recorded library, selects a specific static image (called "target"), and then deliberately closes the aura. When the user aligns the device with the target, an aura appears in the center of the screen. In this way, it serves the recording selected by the speaker to add an AR component to the desired image. It is an easy-to-use platform for AR. For example, Aurasma can take live exhibits to the library's art gallery. It creates a series of pastors on a specific topic, create auras for each image, and present a human connection of graphic design, artwork, animation, and news to each publication to give your audience a unique and enhanced experience.

B. LAYER

This is the world's first truth-enhancing search for Android and iPhone. It takes a photo taken with the camera and combine it with GPS data, magnetic field and rotation sensors. Use this information to cover the object at the top of the image from the camera. Similar to the concept provided by Aurasma, the applications used in the library allow authors to add any type of multimedia to enhance the image of the country and enhance the viewer's experience.

C. Google Goggles

This is a popular mobile photo application developed by Google which uses real-time application development. It can be used extensively in the library. It is used to search for images taken with a mobile device. For example, you can find information about a product by searching for information about a popular building and photography or taking a product code number.

D. LIB ARi

This is a real application designed to help users find out where a particular book is in the library. To use the library effectively, students need to understand why books are counted and how to find them in the classroom. In addition, usually anyone can access a particular book and can search for anything on a website.

E. SHELV AR

It contains an Android application and a series of symbols representing phone numbers placed on the spine. When librarians place the cameras on their cell phone or tablet on the shelves, the app reads all the signals at once, thanks to a new algorithm that can detect even small signs when viewed from a distance.

IV. OTHER USES OF AR APPLICATIONS IN LIBRARY:

1) *Physical Book Stacks Browsing:* Enhanced virtual reality applications incorporate digital library content into real-world search capabilities. Consider first-time users of the library. New users may find that the collection of books is really just library material. He doesn't know the digital content of his collection. Library with the improved application in the library, mobile application users use the software to first search the collection (that is, search part of the "dictionary"), and then the software closes a series of digital objects.

2) *Optical Character Recognition (OCR):* The ongoing R&D project at the University of Illinois Ursana Campaign is developing a mobile app that will allow students to review textbooks and learn about the library resources associated with these documents from mobile phones. Users of this application has options for reviewing reading pages or programs, search queries or references, reviewing the pages of a book, and research labs in your library. After scanning, the application will provide users with the tools presented.

3) *Identify Building Services And Collections:* The actual extension app can detect the building by moving the camera of the mobile phone closer to the building. According to Milgram, Takemura and Kishino can use this extension in real time to find out the name of the library building and when the library was built. You can tell users when to close data such as current computer availability, technical availability, and even library access.

4) *Special Collections:* Promoting a collection of professional articles and university archives is of interest to educational institutions. Many academic libraries struggle to share unique collections and attract talented students. This is another area where RA is useful. If you have a screen with a small number of wheels on the floor, you can upgrade your upgraded commercial equipment with AR. Dingara. AR allows Aurasma users to be notified of their exposure because they can access it without facing additional content about their exposure (such as hidden video images). This can increase the visual perception of people who do not often enter the area where they are.

5) *Technology Programming:* The final area where the reality of innovation can apply is technical planning, RA can use specialized library technologies such as real-time smart computers, Raspberry Pi computers, and iPads to interact with existing services such as dedicated technology areas and sandbox programs that provide on-site demonstrations and exercises. Installing RA applications on library technology allows users to continue to experiment during technology programming and create their own extended RA tools.

V. BENEFITS IN A NUTSHELL

1) Supports in context with and spontaneous learning.
2) Universal and real time access to information.
3) Regular workflow.
4) Patrons engaged with new technologies.
5) Information is provided at the point of need.

A. Concerns
1) Privacy of Augmented ID.
2) Limited by mobile device technology (GPS, Screen).
3) No established standards.
4) Lack of interoperability.
5) Unavailable to non-smartphone users.
6) Could become dependent and miss out on reality.

B. Issues To Consider For Implementing are Systems In Library
1) The first and most obvious is that it is important to determine whether your target audience will have access to the device or app that is required to access the augmented reality content.
2) Along the same lines, it is important to ensure that the use of AR conforms with your library's existing policies
3) Finally, it is important to remember that augmented reality displays will need to be updated as the changes occur.

VI. IMPORTANT AUGMENTED REALITY LIBRARY PROJECTS
1) Librarian-in-Black is a Layer-based mobile app that allows users to take local history tours with augmented reality capability. New York Public Library's finds the future is with another project that unites game based learning and augmented reality. The project is a game designed to empower players to find inspiration for their own extraordinary futures by bringing them face- to-face with the writings and personal objects of people who made an extraordinary difference in the past.
2) New York Public Library's Find the Future is another project that unites game based learning and augmented reality. The project is a game designed to empower players to find inspiration for their own extraordinary futures by bringing them face- to-face with the writings and personal objects of people who made great initiatives.
3) Wolf Walk is an AR app optimized for the use of mobile devices on the North Carolina State University Campus. It allows users to explore the history of the university with a location aware map and photo viewer for browsing historical photographs.
4) Expedition Deventer is a game commissioned by the Public Library Deventer and is a great example of the intersection of game-based learning and augmented reality. Users can learn about the past, present and future of the city of Deventer and the library as the city's information center.

VII. ISSUES TO CONSIDER FOR IMPLEMENTING AR SYSTEMS IN LIBRARY
1) The first and most obvious is that it is important to determine whether your target audience will have access to the device or app that is required to access the augmented reality content.
2) Along the same lines, it is important to ensure that the use of AR conforms with your library's existing policies.
3) Finally, it is important to remember that augmented reality displays will need to be updated as changes occur.

A. Augmented Reality In Indian Scenario
the rate at which the ar is being used all over the world is truly surprising. in fact, it is not hard to discover a future where not only the library but brands and companies in every sector will engage with their consumers only through ar applications with online and brick-and- mortar channels. india was slowly becoming a part of this global trend but the recent increase in smart phone usage and internet services is surely going to provide impetus to indians' desire for augmented reality. in india, augmented reality is only used in android based applications, marker- based library applications. "timescape: kolkata" is an indian ar app developed by the university of liverpool, the jadavpur university and the british library which allows mobile-phone users to explore rare archival images and information about heritage sites in kolkata, as they walk through the city.

B. Restraint Of The Study
The concept of authentic truth is entirely new in the field of libraries. This study is done by collecting information from websites and some renowned journals. It is observed that sufficient data related to Augmented Reality is not available. Therefore, in this study all comprehensive information pertaining to AR is not provided

VIII. CONCLUSION
Therefore it is important to further mention that the aforementioned presentation of augmented reality changed our view. Progress in this area is more noticeable than in the table. it has in-depth knowledge of computer vision, virtual reality, image processing, human interaction, and many other areas. This is a technology that is rapidly gaining more and more space and is being used for library and educational purposes. Libraries can also use AR technology to attract users, deliver technology, promote it, and schedule programs. By leveraging free, affordable tools that allow users to stay connected to new technologies, libraries can attract more people and give students a reputation for being creative. Perhaps the above is the only limit to how technology offers new ways to interact with library visitors. Thinking storytellers can develop their own ways of integrating AR technology into libraries.

REFERENCES

[1] 4th Wall technologies: Augmented reality decorating (Dec 17, 2009). "Anilrohatgi: YouTube".

[2] Retrieved from http://www.youtube.com/watch?v=2blhZ14Dib4

[3] 7 Things you should know about augmented reality. (Oct 15, 2005). "Educause Learning Initiative". ID:ED17007)

[4] Retrieved from http://educause.edu/ir/library/pdf/ELI7007.pdf
35 Awesome augmented reality examples (June 14, 2009). "Banner Blog News".
Retrievefrom http://www.bannerblog.com.au/news/2009/06/35_awesome_augmented_reality_examples.php

[5] A--REQUEST FOR INFORMATION Augmented Reality (AR) "Systems Technology Roadmap Survey Dismounted Soldier Applications"
(March 12, 2010). US Army,FedBizOpps.gov Retrieved from
https://www.fbo.gov/index?s=opportunity&mode=form&tab=core&id=2fd2cfe12f5d505472bcb31146ecf149

[6] Ackerman, S. (July 6, 2012). Air Force wants apps for training flyboys. Wired.
http://www.wired.com/dangerroom/2012/07/apps-air-force/

[7] AKQA Augmented reality for USPS (June 6, 2009). "InternetExplorerBlog: YouTube". Retrieved from
http://www.youtube.com/watch?v=WpS3LeCiCtc

[8] Adams, M. (July 14, 2004). The top ten technologies: #3 Augmented Reality, "Natural News". Retrieved from
http://www.naturalnews.com/001333.html

[9] Adidas Originals - Augmented Reality Sneaker Experience (Feb 10, 2010). "Adidas Originala: YouTube."
Retrieved from adidas Originals - Augmented Reality Sneaker Experience

[10] Advertising with QR codes- CBS News video. (March 31, 2010). CBS. Retrieved from
http://www.cbsnews.com/video/watch/?id=6350105n

[11] Alice in AR Land (March 19, 2010) Talking Dog AR Blog. Retrieved from
http://talkingdogar.blogspot.com/2010/03/alice-in-ar-land.html

[12] Amos Dias, Reena (Feb 25, 2010). Gen-M Education to Transcend Classrooms, "Emirates Business".
Retrieved http://www.zawya.com/Story.cfm/sidZAWYA20100225065440/Gen-M%20education%20to%20transcend%20classrooms

[13] Arrison, S. (Feb 24, 2010). The trouble with augmented reality and other cool tech, "Tech News World".
Retrieved from http://www.technewsworld.com/story/69413.html

[14] Augmented assembly - Increasing efficiency in assembly work with augmented reality (March 9, 2010). VTTFinland:
YouTube. Retrieved from http://www.youtube.com/watch?v=vOhiZ37aaww

[15] Augmented (hyper)Reality: Domestic Robocop by Keiichi Matsuda, (Jan 6, 2010) Chocobaby2000:
YouTube. Retrieved from http://www.youtube.com/watch?v=fSfKlCmYcLc

[16] Augmented reality's first educational applications (April 12, 2010). "National Institute for Technology in Liberal Education".

[17] Augmented reality cosmetic mirror - CScout Japan (Feb 3, 2010). "CScout Japan: YouTube".
Retrieved from http://www.youtube.com/watch?v=R5zZ5qZP5Ok

[18] Augmented reality explained by Common Craft (March 23, 2010). "Common Craft Video".
Retrieved from http://commoncraft.com/augmented-reality-video

[19] Augmented reality for maintenance and repair (Oct 10, 2009.) "Cactushendo YouTube." Retrieved from http://www.youtube.com/watch?v=mn-zvymlSvk

[20] Augmented reality game (March 2, 2007). "Namitsu1:YouTube." Retrieved from http://www.youtube.com/watch?v=lWNi0ly0TU8

[21] Augmented reality improves training for keyhole surgery (Mar 31, 2009). "The Medical News."
Retrieved from http://www.news-medical.net/news/2009/03/31/47683.aspx

[22] Augmented reality in education (Feb 19, 2010). "Innovation in Teaching Blog".
Retrieved from http://innovationinteaching.org/blog/2010/02/19/augmented-reality-in-education/

[23] Augmented reality on natural shapes (Oct 15, 2009). "Natiosat: YouTube."
Retrieved from http://www.youtube.com/watch?v=je8SihypYA4

[24] Augmented reality technology-Esquire augmented reality practical guide. (Nov,9, 2009). "Esquire Magazine".
Retrieved from http://www.esquire.com/the-side/feature/augmented-reality-technology-110909

[25] Augmented reality training unit review (Sept 24, 2008). "FDNNTV- Fire Department Network News". Retrieved
from http://www.fdnntv.com/review.asp_Q_reviewID_E_6_A_title_E_Augmented_Reality_Training_Unit

[26] Augmented reality without programming in 5 minutes. (May 24, 2010). Gasubasu:YouTube
Retrieved from http://www.youtube.com/watch?v=StcIkMpzVfY

[27] Augmented reality with second sight on a Sony PlayStation portable (Feb 24, 2010). "Connected Education, YouTube".
Retrieved from http://www.youtube.com/watch?v=-6K4GPeLjsE

[28] Billinghurst, M. (Dec 2002). Augmented reality in education, "New Horizons for Learning".
Retrieved from New Horizons org (link no longer working)

[29] Berkowitz, D.(Feb 6, 2010). Higher education's future: Collaboration, augmented reality, faculty education, social media week.
Retrieved from http://socialmediaweek.org/blog/2010/02/06/higher-educations-f
uture-collaboration-augmented-reality-faculty-education/

[30] Blog-Augmented Reality Browser:Layar, "Layer" http://layar.com/company/blog/ Bonsack,N. (Oct 15, 2009). Layer augmented reality app now available for
iPhone 3GS. "MacWorld".
Retrieved from http://www.macworld.com/article/143330/2009/10/layar.html

[31] Blumberg, A. & Eckersley, P. (Aug 2009). On location privacy, and how to avoid losing it forever, Electronic Frontier Foundation.
Retrieved from http://www.eff.org/wp/locational-privacy

[32] BMW Augmented Reality: Introduction, BMW. Retrieved from
http://www.bmw.com/com/en/owners/service/augmented_reality_introduction_1.html

[33] BrainCake.org,Girls, Math & Science Partnership, Carnegie Science Center website.
Retrieved from http://www.BrainCake.org BrainCake.org]

[34] Bruner, J. S. (1961). "The act of discovery". "Harvard Educational Review 31 (1)": 21–32.

[35] Carpenter, T.K. (Feb 23, 2010). 7 Ways augmented reality will change your brain, "The Future Digital Life."
Retrieved from http://thomaskcarpenter.com/2010/02/23/7-ways-augmented-reality-will-change-your-brain/

[36] CES 2010: Hands-On with transparent display of the future, (Jan 7,2010). "Wired: YouTube."
Retrieved from http://www.youtube.com/watch?v=qeNJrim3SU4

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