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A Seminar Synopsis on

“Webized/Mobile Augmented Reality”

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BACHELOR OF ENGINEERING

in

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SYNOPSIS

Webized/Mobile Augmented Reality (Web/Mobile AR) is gaining increasing attention from both academia and industry. Hardware based Mobile AR and App-based Mobile AR are the two dominant platforms for Mobile AR applications. However, hardware based Mobile AR implementation is known to be costly and lacks flexibility, while the App-based one requires additional downloading and installation in advance and is inconvenient for cross-platform deployment. In comparison, Web-based AR (Web AR) implementation can provide a pervasive Mobile AR experience to users thanks to the many successful deployments of the Web as a lightweight and cross-platform service provisioning platform. Furthermore, the emergence of 5G mobile communication networks have the potential to enhance the communication efficiency of Mobile AR dense computing in the Web-based approach.

Most of the earlier AR studies on view management are based on standalone AR applications, of which the principle components such as the tracking engine, application logic and accompanying parts are not clearly separated. Consequently, it is difficult to reuse existing contents and application logic. In addition, applying the view management scheme to various types of content is limited.

However, webized mobile AR content framework provides clean separation between the AR web browser, which is in charge of tracking and rendering, and content, which is in charge of representing augmented data, as shown in Fig. 1a. Thus, it is possible to manage the AR view at the content level without depending on the tracking engine and rendering parts. With Insight's content structure, composed of HTML5, CSS3 and JavaScript, which is identical to common web pages, view management logic can be implemented in a JavaScript library form. Thus, the AR content and accompanying view management scheme are easily reusable. Browser that renders web pages without obstructing the view of the world when seen from an AR headset such as Oculus Rift, Gear VR or Google Cardboard. The browser overlays the contents of the web page transparently on the user's view and is capable of modifying font size, colors, and layout of the web page, such that it augments the user's view of the page.

Reference:

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- “Mobile Edge Computing – a Booster for the Practical Provisioning Approach of Web-based Augmented Reality”, by Pei Ren, Xiuquan Qiao, Junliang Chen, Schahram Dustdar. 2018 Third ACM/IEEE Symposium on Edge Computing.

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