Summary Paper I

This paper discuss web AR. It is a recent development in Mobile AR and It allows us to enjoy AR content through web browsers. Currently there are two dominant platforms in Mobile AR. The app based AR and Hardware based AR. The App-based AR is a low cost AR platform. The user can enjoy AR content in their smartphone. But user want to download multiple AR apps in their phone which affect their device performance. Also smartphones are limited in processing data and battery. The Hardware-based AR is costly and lack flexibity. But it provides good AR experience because of the powerful hardware.

The web AR solves the above problems ~~and~~ It is cross-platform and light weight. The introduction of 5G is also boosts the development of web AR. The main technologies that enables ~~There are mainly three implementation approaches in web AR~~ web AR are web Assembly, web workers, WebGL, WebRTC.

There are mainly two implementation approaches for web AR.

① Self contained
② computation outsourcing

In self contained method, the task is executed on the mobile device locally. It is an offline approach. This method is less depend on network. So the performance is not affected by the delay in network. The main disadvantage is the inefficient computation capabilities of mobile devices.

Another method is computation outsourcing. It uses the computing and storage capabilities of cloud severs. It is more dependent on the mobile network.

This paper also discuss various challenges in web AR like security, privacy, cost of maintaing etc.

Role in Main project

we are developing a marker based Mobile AR application for students to visualize the content of the text book in 3D. The current network speed is not efficient for web AR implementation in our country. we hope that this situation chages with introduction of 5G. So we plan to implement it in future.