Based on Pervasive Computing for the Virtual Scene Adaptive Network Released Research

Wudao Yang [1,2]

[1]Visual Computing and Virtual Reality Key Laboratory of Sichuan Province

[2]College of Computer Science, Sichuan Normal University, Chengdu, China

Abstract: The mobile learning by the online virtual reality is not efficient for the mobile devices to access the 3D virtual scene, because of the constraints of network bandwidth and terminal computing power. Based on this we raised to a technology which the system performs adaptive optimization selection in pervasive computing environment. In order to make the system well performance with adaptive training in a pervasive computing environment, the system architecture built on the adaptive framework. The mobile devices well performed the interact process with the frame, which designed in accordance with existing laboratory equipment and theoretical basis that can be achieved. The system building is based on JAVA, J2EE framework, WURFL, Jena2 inference engine X3D and other key technologies. The WURFL achieves structures of the building for pervasive computing environment.Jena2 helps to realize the establishment of inference engine. X3D is used as the 3D original resources and target resources. Through the effective integration of these technologies, it allows the system to be realized. Using SOAP to achieve the exchange of resources on the device-side and server-side, WURFL help system to collect the device-side information on the server side through the building of pervasive computing environment. Afterworlds the system got training by Jena2 reference engine. Handheld mobile devices in accordance with existing equipment and the theoretical basis, first by the WURFL sampling to obtain a mobile device parameters, and then use the OWL language semantic description of the three-dimensional solid described by RDF tools. Protégé Editor establishes the Jena2 reference engine, and the system is trained to build the appropriate optimization selective model that combined with pervasive computing scene. On this basis it will create good optimization model results of the installation and universal rules to calculations by the inference engine to optimize model selection. Finally, the system will analyze the results. Testing this method, the results show that after adaptive selection of hand-held mobile devices to get the speed and efficiency of the resources of three-dimensional virtual scene has been markedly improved.

Keywords: Virtual reality; Mobile learning; Pervasive Computing; Ontology; Semetic; Adaptation