Editorial

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American Journal of Computer Science and Engineering Survey

2021
Vol.9 No.6: e015

A Brief Note on Virtual Reality in Software

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Received date: November 05, 2021; **Accepted date:** November 19, 2021**; Published date:** November 26, 2021

Citation: Tamirat W (2021) Note on Virtual Reality in Software. Am J Comput Sci Eng Surv Vol.9 No.6:e015.

Description

Requirement Engineering (RE) is a Software Engineering (SE) process of defining, documenting, and maintaining the requirements from a problem. It is one of the most complex processes of SE because it addresses the relation between customer and developer. RE learning may be abstract and complex for most students because many of them cannot visualize the subject directly applied. Through the advancement of technology, Virtual Reality (VR) hardware is becoming increasingly more accessible, and it is not rare to use it in education. The integration between SE and VR is even less than RE and VR. Hence, this proposes to select and present studies that relate the use of VR applications to teach SE and RE concepts. SE is the engineering discipline responsible for software production, from initial conception to operation and maintenance. RE can be considered the process of finding out, analysing, documenting and checking these services and constraints. The projects based essentially on visualization. Using Virtual Reality (VR) in education can be considered a natural evolution in using technology to support learning [1]. VR allows novel forms and methods of visualization and interaction, providing the student with more proximity and depth in the observation and examination of objects and processes. Students feel motivated and challenged to walk and interact in a 3D environment, and even more with the possibility of changing that environment. Because of these qualities, the idea of combining VR with Software Engineering (SE) to make abstract subjects tangible arises. In the past, one disadvantage of VR was related to the cost. This problem has already been overcome because, with the latest generation of smartphones and a foldable cardboard display, users can reach these immersive environments. However, the quality of VR hardware and software is not yet good enough for a mass market [2]. In reality 3D environments are used (such as 3D rendered on a computer or smartphone screen) rather than VR. SE is the engineering discipline responsible for software production, from initial conception to operation and maintenance [3]. Software development involves interaction between users and developers. Through this the applications have solved this communication resource. To identify the effectiveness of VR environments for education, it is important to understand how they were evaluated. In the past, the use of HMDs was expensive and uncomfortable and the users can overcome the problems that have arisen with price when they have access to new generations of smartphones, allowing a greater possibility of accessing VR environments. One of the key problems arising from the physical problems is cyber sickness, which can mainly affect people who are not used to VR games.

Conclusion

Although virtual reality is being widely used in the teaching of medicine and other engineering courses, remarkably, how this technology still lacks maturity in the teaching of software engineering. Universities are not properly preparing students for software requirements tasks. The real environments with virtual reality can offer the chance for these students to learn as if they were already in their professional lives. Learning tasks and the monitoring of students' progress by teachers also need to be considered. The quality in elicitation and specification of requirements is critical to the success of a software project. For this reason, there is a need to prepare students for Software Engineering courses, offering them the opportunity to experience this process during their training. Universities may not be creating enough skills for future engineers to perform this task. It is still necessary for the academic environment to develop maturity and practices with real projects for students to develop the skills to conduct Requirement Engineering (RE).

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