Building a Framework for Software Capable of Simulating Synesthesia

Joseph Daly

BSc in Computer Science

ABSTRACT

Synesthesia is a complex, difficult to understand condition which brings together multiple senses. Simulating it using new Virtual Reality technology could make the condition easy to understand, and solve issues related to it. This project outlines how best to replicate Synesthesia by making use of this new technology. The more common forms of Synesthesia are identified, and what challenges are faced when recreating them. Truly simulating Synesthesia is impossible, but core aspects of the condition can be replicated to create a similar end result. This report examines new emerging Virtual Reality technologies and techniques, assess how best to use them. Examples include the Oculus Rift, HTC Vive and Microsoft HoloLens. Software that can best replicate the effects as the user desires is detailed. Finally, a proof-of-concept application mimicking the designed application has been created. The success of the project is noted, and future expandability is detailed.

Figure 1. The Oculus Rift DKII