In the enhancement of the advanced technology, the uncanny valley is becoming a high-stakes concern of the entertainment industry to produce good films and animations (Chaminade et al., 2007). Therefore, this study aims to analyse participants’ familiarity towards the usage of digital characters as actors. Then, this article is to convey on how the uncanny valley factors affect audience’s attention in watching films with computer graphic imagery (CGI) elements in films. The researcher has selected visual stimuli that are divided into (4 x 4 factorial design) with 2 subjects of realistic and accurate human characters, meanwhile the second stimuli, researcher selected 2 subjects with minimum characteristic of human likeness. The surveys conducted are self-administered manner with combination of videos and images, distributed online via email and social network. This research concludes, the more familiarity and expectations of the audiences, the higher discomfort feeling when looking to a CGI made character. This illustrates that the longer a duration of CG actors in action, the higher significant weaknesses and substantial of superficial visuals. Therefore, this research is beneficial to assists artists and digital creative directors in digital actor’s creation, and guidance for developing more realistic actors in future projects.

**Keywords:** animation, humanoid reality, uncanny valley, virtual reality, visual analysis.