Epiphanic Resolution: The Effect of Video Compression on the Believability of Computer-Generated Characters

Jason Kennedy[1]

[1]Auckland University of Technology

June 2, 2023

Abstract

This article examines the effects of video compression on the believable integration of computer-generated (CG) characters among live-action film elements. Compression is requisite for the delivery of moving-image content to a variety of end-user applications. The most common standards for compressing consumer-targeted video content provide separate pros and cons depending on the type of footage and the degree of compression required. This research investigates to what extent the type and degree of compression impacts how well virtual actors (vactors) appear to coexist within profilmic scenes. By extension, what visual results linked to compression have the greatest impact on compromising a vactor's believable integration within a shot? Analyses of two feature films and two web-based promotional films at various compression strengths provide data that suggests compression is more detrimental to the believability of CG versus profilmic characters. Additionally, as compression strength increases, CG characters become more graphically abstracted – negatively impacting the quality of their visual integration – whereas profilmic actors remain recognisably human and plausibly integrated. This research provides novel insights regarding the relationship between the finished video product as delivered by a film company versus how it may be perceived when viewed at different formats by audiences.

Hosted file

Epiphanic Resolution - MANUSCRIPT (CAVW).docx available at https://authorea.com/users/624998/articles/647114-epiphanic-resolution-the-effect-of-video-compression-on-the-believability-of-computer-generated-characters