Flexible HDR video delivery architecture

PhD

Start date: 1 February 2017

Supervisor: Professor Alan Chalmers and Dr Kurt Debattista

Project Overview:

This project is with leading researchers in WMG’s Visualisation Group at the University of Warwick.

Many user studies have clearly shown that of all enhancements introduced by UHDTV (ITU-R Recommendation BT.2020), HDR is the feature that users most notice. With the rapid growth of video consumption on a wide variety of devices, from traditional televisions to mobile devices, there is a challenge to deliver the same enhanced viewing experience that HDR video has to offer, to every device whenever and wherever the content is being watched.

To achieve the full potential of HDR video, it is important that all the dynamic range that was captured or generated, eg. by computer graphics, is delivered to the display device. This can provide great flexibility in which the lighting of each pixel can be manipulated at the display to ensure the best quality overall for the image whether it is displayed directly on a HDR display or tone mapped appropriately onto a LDR display. In particular the pixels can be manipulated to best suit the current scene content, any creative intent, the actual display properties and ambient light conditions.

The PhD project is to investigate the capture, transmission and delivery of High Dynamic Range (HDR) video along an end-to-end pipeline, and develop and validate a flexible delivery architecture to ensure an enhanced viewing experience is delivered to the user - no matter which device the content is seen on, or the ambient light conditions under which the content is viewed.

Qualifications:

Applicants should have a first class or upper second Bachelor’s or a Master’s degree in computer science or mathematics.

Eligibility:

To be eligible for this project the successful applicant should have indefinite leave to remain in the UK
and have been ordinarily resident here for 3 years prior to the project start-date, apart from occasional or temporary absences. Additional information about this is available on the EPSRC website.

**Funding:**

This position provides an annual stipend of £14,000 per annum (for UK nationals) for up to 3.5 years. Tuition fees will also be paid for UK nationals for up to 3.5 years.

**Apply:**

If you would like to be considered for this position or have any questions please complete our [online enquiry form](#).