

HIGH DYNAMIC RANGE IMAGE RECONSTRUCTION

Synthesis Lectures on Computer Graphics and Animation

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High Dynamic Range Imaging Reconstruction

Asla Sa, Paulo Carvalho, and Luiz Velho

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ABSTRACT

High dynamic range imaging (HDRI) is an emerging field that has the potential to cause a great scientific and technological impact in the near future. Although new, this field is large and complex, with non-trivial relations to many different areas, such as image synthesis, computer vision, video and image processing, digital photography, special effects among others. For the above reasons, HDRI has been extensively researched over the past years and, consequently, the related scientific literature is vast. As an indication that the field is reaching maturity, tutorials and books on HDRI appeared. Moreover, this new resource has already reached interested practitioners in various application areas. In this book, we do not aim at covering the whole field of high dynamic range imaging and its applications, since it is a broad subject that is still evolving. Instead, our intent is to cover the basic principles behind HDRI and focus on one of the currently most important problems, both theoretically and practically. That is, the reconstruction of high dynamic range images from regular low dynamic range pictures.

KEYWORDS

HDRI, High Dynamic Range Reconstruction, Photometric Calibration

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