

Perception of virtual environments: focus on materials and facades

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In this talk we will present our recent results and ongoing projects on perceptually-based rendering of virtual environments. We have conducted several studies on material perception in images of various levels of realism in order to identify the effects that best contribute to material appearance (this includes realistic vs. expressive images, or mono vs. stereo viewing conditions). We are also evaluating the perception of image distortions in image-based rendering of urban scenes in order to determine the algorithmic parameters that have the most impact on image quality (e.g., camera capture position, image reconstruction algorithms, etc.). Finally we will describe how understanding material perception gives us new insights for the development of effective tools to draw plausible materials in illustrations.