

Abstract: Goal of this thesis is to provide theoretical basis for implementation of the software to be used for rendering of the photorealistic images. Application based on described theoretical background is also part of this thesis. Photorealism is achieved by describing the light and materials in the scene, together with proper investigation of their interactions, by using as accurate physics/optics as possible, according to the real world properties. Thesis also aims on handling and following rendering of all kinds of illumination, including indirect illumination, which is often as important component of the final images as direct illumination.