Quality Assurance Based on Descriptive and Parsimonious Appearance Models - DTU Orbit (07/01/2016)

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In this positional paper, we discuss the potential benefits of using appearance models in additive manufacturing, metal casting, wind turbine blade production, and 3D content acquisition. Current state of the art in acquisition and rendering of appearance cannot easily be used for quality assurance in these areas. The common denominator is the need for descriptive and parsimonious appearance models. By 'parsimonious' we mean with few parameters so that a model is useful both for fast acquisition, robust fitting, and fast rendering of appearance. The word 'descriptive' refers to the fact that a model should represent the main features of the acquired appearance data. The solution we propose is to reduce the degrees of freedom by greater use of multivariate statistics.

General information
State: Published
Organisations: Department of Applied Mathematics and Computer Science, Image Analysis & Computer Graphics
Number of pages: 4
Publication date: 2015

Host publication information
Title of host publication: MAM2015: Eurographics Workshop on Material Appearance Modeling: Issues and Acquisition
Publisher: Eurographics
ISBN (Print): 978-3-905674-83-5
Main Research Area: Technical/natural sciences
Workshop: 3rd Eurographics Workshop on Material Appearance Modeling (2015), Darmstadt, Germany, 23/06/2015
Electronic versions:
SlimBRDF.pdf
DOIs:
10.2312/mam.20151199
Source: PublicationPreSubmission
Source-ID: 112091043
Publication: Research - peer-review › Article in proceedings – Annual report year: 2015