Creating life-like reproductions of Fine Art

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Paintings are not just 2D color images; they are 3D dimensional 'sculptures' of paint with widely varying visual appearance. In the field of Fine Art reproduction, 3D scanning plus 3D printing, combined with dedicated software, allows to capture and reproduce the color as well as the surface texture of oil paintings. A 3D scanner was developed which uses a hybrid solution of fringe projection and stereo imaging. The generated images were printed using state-of-the-art Océ High Resolution 3D printing technology. Three paintings by Dutch masters Rembrandt and Van Gogh have been scanned and reproduced using this technique. These 3D printed reproductions have been evaluated by experts, both individually and in a side-by-side comparison with the original. This evaluation showed that for life-like reproduction of the material appearance of such paintings, the typical gloss and translucency must also be included, which is currently not the case. The talk will also elaborate on the challenges and results of capturing and reproducing oil paint gloss (next to texture and color) using a scanning and printing system.