Superimposing Synthetic Objects onto Paintings

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We present a new technique for superimposing synthetic objects onto oil paintings with artistic shadings that are consistent with those originally painted by the artists. In a colored medium such as oil painting, artists often use color shift techniques for adding some artistic tones to their paintings as well as for enlarging their dynamic ranges. For instance, in the painting by Vincent van Gogh shown in the following figure, non-photorealistic blue to white color transition is observed inside shadows cast by the book placed on the wooden table. In this work, we first study brightness distributions inside shadows observed in paintings to discover how intrinsic color shifts were performed by the artists. Then we automate their processes so that synthetic objects with shadings consistent with those originally painted by the artists can be superimposed onto paintings.

(a) “Still Life: Drawing Board, Pipe, Onions and Sealing-Wax” by Vincent van Gogh
(b) “Artists in Studio” by Rembrandt