

ZMATH 2012f.01067

Shi, Xifan; Chen, Xianghua; Cai, Tiefeng

A high precision fresco scanner.

Pan, Zhigeng (ed.) et al., Transactions on Edutainment VII. Berlin: Springer (ISBN 978-3-642-29049-7/pbk; 978-3-642-29050-3/ebook). Lecture Notes in Computer Science 7145. Journal Subline, 214-221 (2012).

Summary: It is of great significance to digitize ancient paintings and calligraphy. A typical way to acquire them is using a linear CCD based large area table scanner. But it is not suitable for scanning fresco. Our lab has recently developed a new equipment to solve it and hopefully it would shed new light on the documentation of ancient paintings. This paper will discuss the way to improve image sharpness both from theory and practice perspective. In theory, the theoretical optimal aperture determination is discussed. In practice, a test chart is proposed to test the gradual image quality deterioration. From the photo of test chart, the clear part is determined and the percentage of clear part is used to determine the practical optimal aperture. A workflow integrating the above techniques is also proposed. The simulated acquiring experiment shows the method and the scanning hardware can achieve satisfactory results.

Classification: R60 R30

Keywords: digital acquisition of cultural heritage; computer-aided cultural relics protection; cultural heritage research; painting high accuracy photographing

doi:10.1007/978-3-642-29050-3_20