

Making Round Eyes Flat; Comparing the Output of Montage Applications

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Background: The interest to go beyond the field of view presented by the camera frame exists in consumer photography as well as in ophthalmic photography. Just as panoramic landscape images have been created by digitally stitching frames together, so are panoramas of the ocular fundus. Given that the ocular fundus is curved, and the outcome montage image is flat, it is possible that not all stitching algorithms will treat retinal images the same way. This study will evaluate the outcomes of a series of automontage programs using the same set of test images.

Materials: A set of test images was acquired from a fundus camera with a standard field of view, and a fundus camera with a wide field of view. Each fundus camera created images with different resolution values. Each test image set was stitched together using various automontage applications including programs bundled within ophthalmic camera systems, Adobe Photoshop created for graphic design, and a downloadable iPhone stitching application for hobbyists and photographers.

Methods: Ease of use, reproducibility, processing speed, edge blending, final output digital size and final output image configurations were evaluated.

Results: The differences between the results of each software application will be discussed.