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Retina mosaicing using local features

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Author(s) Philippe C. Cattin,; Herbert Bay,; Luc Van Gool,; Gabor Szekely,

Author(s) at UniBasel [Cattin, Philippe Claude](#) ;

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Laser photocoagulation is a proven procedure to treat various pathologies of the retina. Challenges such as motion compensation, correct energy dosage, and avoiding incidental damage are responsible for the still low success rate. They can be overcome with improved instrumentation, such as a fully automatic laser photocoagulation system. In this paper, we present a core image processing element of such a system, namely a novel approach for retina mosaicing. Our method relies on recent developments in region detection and feature description to automatically fuse retina images. In contrast to the state-of-the-art the proposed approach works even for retina images with no discernable vascularity. Moreover, an efficient scheme to determine the blending masks of arbitrarily overlapping images for multi-band blending is presented.

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