
Abstract

We report about the design and test of an image processing algorithm for the localization of the optic disk in low resolution (about 20 μ / pixel) color fundus images. The design relies on the combination of two procedures : (1) a Hausdorff-based template matching technique on edge map, guided by (2) a pyramidal decomposition for large scale object tracking. The two approaches are tested against a database of 40 images of various visual quality and retina pigmentation, as well as of normal and small pupils. An average error of 7% on optic disk center positioning is reached with no false detection. In addition, a confidence level is associated to the final detection that indicates the “level of difficulty” the detector has to identify the optic disk position and shape.