Calcified Plaque Detection in IVUS Sequences: Preliminary Results Using Convolutional Nets

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Abstract

The manual inspection of intravascular ultrasound (IVUS) images to detect clinically relevant patterns is a difficult and laborious task performed routinely by physicians. In this paper, we present a framework based on convolutional nets for the quick selection of IVUS frames containing arterial calcification, a pattern whose detection plays a vital role in the diagnosis of atherosclerosis. Preliminary experiments on a dataset acquired from eighty patients show that convolutional architectures improve detections of a shallow classifier in terms of F_1-measure, precision and recall.

Keywords: *Intravascular ultrasound images, Convolutional nets Deep learning, Medical image analysis*

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