

Detection of OCT with Coronary Artery Calcification: A Deep Learning Approach Exploring Spatial Correlation of Image Features

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To assist in automated detection of coronary artery calcification in optical coherence tomography (OCT) images a two-phase deep learning approach was proposed based on characterizing spatial correlation of morphological and textural features. Phase 1 extracted the morphological and textural features embedded in each slice. Phase 2 classified each slice into "with calcification" or "without calcification" by capturing the spatial correlation of features. The performance assessment showed that the proposed approach could effectively detect calcified regions with the AUC, accuracy, precision, recall, and F1-score of 0.973, 0.922, 0.900, 0.885, and 0.891, respectively.