

## عنوان مقاله:

Presenting a robust algorithm for detecting coronary artery occlusion in multi-sectional CT-angio images and evaluating the accuracy of results with angiographic images

## محل انتشار:

پنجمین کنفرانس بین المللی فناوری های نوآورانه در زمینه علوم، مهندسی و تکنولوژی (سال: 1399)

تعداد صفحات اصل مقاله: 8

## نویسندگان:

Mahsa Naghieh - Faculty of Science and Research University, Tehran, Iran

Leila Kalhor - Faculty of Islamic Azad University of Khomeini Shahr, Esfahan, Iran

## خلاصه مقاله:

Cardiovascular disease has increased dramatically in recent decades with population growth and inactivity and unhealthy nutrition. It is estimated that by 2030, more than 40% of the world's population will be infected with the disease. According to world statistics in 2008, about 7249,000 people died from these diseases, many of whom were victims under the age of 65. According to the statistics of the Ministry of Health of Iran in 1390, about 40% of deaths in Iran were due to cardiovascular disease. Heart disease includes high blood pressure, coronary artery disease, heart failure, heart attack and congenital heart defects, which account for 54% of deaths from heart disease due to coronary artery disease. Early diagnosis of atherosclerosis is essential to prevent the emergence of serious risks in such patients with methods such as medication and angioplasty. Because of some of the complications and problems of invasive angiography, as well as some patients' fears and anxieties about having angiography, researchers have tried to find other methods that are more acceptable and comfortable for patients. CT cardiac angiography is a new and diagnostic method for examining various arteries, including the coronary artery, without the need for invasive cardiac angiography. In this study, using automatic processing (with the help of computer), CT angiographic images are detected and classified with higher accuracy and precision of coronary artery plaques. After that, the image was segmented by windowing the image to 60 \* 60 dimensions and applying a thresholding method, and then by extracting local and statistical features and Violet energy and high-order statistics, the eclipse site was classified by KNN, SVM, MLP and TREE. The results for determining coronary artery occlusion with are classified with SVM classifier a polynomial kernel a 96% accuracy and a sensitivity of 90% and a detection capability of 100%, which indicates the potential of the proposed method to other articles.

## کلمات کلیدی:

Calcification, Breast, angio-CT imaging, Feature Extraction, Classification

## لینک ثابت مقاله در پایگاه سیویلیکا:

<https://civilica.com/doc/1142899>



