Pregled programa otvorenog koda za računalom potpomognuto dijagnosticanje u kardiologiji

Overview of open source software for computer aided detection in cardiology

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Advances in imaging technology and computer science have greatly enhanced interpretation of medical images, and contributed to early diagnosis. The typical architecture of a Computer Aided Detection (CAD) system includes image pre-processing, definition of region(s) of interest, features extraction and selection, segmentation and classification. Due to the development of new imaging devices, which produce a large number of images, advanced techniques for the evaluation of large amounts of data are required. Therefore, computer-supported extraction of dynamic 3-D models of patient anatomy from temporal series is highly desirable. Since the diagnostician must be able to quickly make rational decisions based on the proposed models, a high degree of accuracy is required within a minimum amount of time. In this paper, the principles of CAD systems design and development are demonstrated by means of open source software overview for cardiac image segmentation. It is concluded that computerized analysis of cardiac images in combination with artificial intelligence can be used in clinical practice and may contribute to more efficient diagnosis.

Keywords: computer aided detection, segmentation in cardiology, medical image analysis.

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