

## Development of software in the study of carotid artery in the neck

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### SUMMARY

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The aim of this work was to develop and employ software for the study of the common carotid artery and its branches in the neck. We first constructed geometric models of anatomic components, for the building of knowledge bases to be used in automatic feature extraction techniques from images. Then, we developed a software system characterised by three-dimensional visualisation, image processing functions, knowledge base and a programming language to describe classification processing by means of fuzzy logic. The software system was used to perform automatic reconstruction of three-dimensional models of carotid arteries from contiguous CT scans of the neck. These findings suggest that such software systems represent a useful help in the study of image based diagnosis of carotid arteries.