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CTA Quantification and Multi-Modal Visualization for Assessing Coronary Artery Disease

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Propositions accompanying the PhD thesis
**CTA Quantification and Multi-modal Visualization
for Assessing Coronary Artery Disease**



Accurate delineation of cardiac chambers from CTA images can be achieved using a multi-atlas based segmentation approach.

(Chapter 2 of this thesis)



The coronary artery lumen can be automatically segmented with a precision similar to expert delineation, however (semi-)automatic detection and quantification of coronary artery stenosis is still an unsolved problem. *(Chapter 3 and 4 of this thesis)*



Current coronary artery stenosis detection and quantification algorithms are not sufficiently reliable to be used stand-alone in clinical practice, but may be used as a second-reader. *(Chapter 4 of this thesis)*



The impact of challenges could be further increased by making the evaluated algorithms publicly available, such that they can be applied to other datasets, without the burden of re-implementing the algorithm. *(Chapter 4 of this thesis)*



Integrated analysis of fused anatomical and functional information derived from complementary imaging techniques such as CTA/MRI or CTA/SPECT-MPI results in an improved diagnostic performance, primarily in patients presenting coronary artery disease in more vessels than the number of reported perfusion defects.

(Chapter 5 and 6 of this thesis)



Unity is strength; when there is teamwork and collaboration, wonderful things can be achieved. *(Mattie Stepanek)*



Optimism and the confidence it creates are essential for creating and sustaining the motivation needed to reach personal goals. Being an optimist is nice, but being a realistic optimist is better: success does not come without effort. *(Heidi Grant Halvorson)*



Honesty is much more compelling, powerful, and effective than the alternative. People want the truth. *(Peter Bregman)*



Happiness comes when you finally reach the good balance between your professional and personal life; ambition at work should not be at the expense of your social life.



The beauty of doing nothing is that it teaches you to clear your mind and relax. When you allow your mind to take a break, it comes back stronger, sharper, more focused and creative. *(Richard Carlson)*



Put your heart, mind, and soul into even your smallest acts. This is the secret of success. *(Swami Sivananda)*