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## Automated planning approaches for non-invasive cardiac valve replacement procedures from CT angiography

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**10**  
**Acknowledgements**  
**About the author**  
**Publications**



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Xinpei Gao

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## About the author

Xinpei Gao was born in Jiangsu, China on 1987. After high school, she started studying the department of Biomedical Engineering in Southeast University in Nanjing, China. The department aims to train students in both biomedical and engineering fields. She received the bachelor degree in June 2009. In the same year, she was recommended to be a master student in the same department. During her master period, she also did internship in China Academy of Science (CAS), Suzhou Institute of Biomedical Engineering and Technology (SIBET). After graduation, she worked as a PhD student at Applied research department of Medis BV., and Division of image processing (LKEB), Radiology, Leiden University Medical Center. She developed clinical applications for pre-operative planning of aorta-related disease in CTA images which end up in this thesis.





## List of publications

### Journal papers

**Xinpei Gao**, Pieter Kitslaar, Ricardo P.J. Budde, Shengxian Tu, Michiel A. de Graaf, Liang Xu, Bo Xu, Arthur J.H.A. Scholte, Jouke Dijkstra, Johan H.C. Reiber, Automatic detection of aorto-femoral vessel trajectory from whole-body computed tomography angiography data sets, *The international journal of cardiovascular imaging*. DOI: 10.1007/s10554-016-0901-5

**Xinpei Gao**, Sara Boccacini, Pieter Kitslaar, Ricardo P.J. Budde, Shengxian Tu, Michiel A. de Graaf, Tomas Ondrus, Martin Penicka, Arthur JHA Scholte, Boudewijn PF Lelieveldt, Jouke Dijkstra, Johan HC Reiber, Quantification of aortic annulus in computed tomography angiography: development and validation of a novel fully automatic methodology, *European Journal of Radiology*, 2017.

**Xinpei Gao**, Pieter Kitslaar, Michiel A. de Graaf, Alexander Broersen, Shengxian Tu, Boudewijn P.F. Lelieveldt, Arthur J.H.A. Scholte, Jouke Dijkstra, Johan H.C. Reiber, Fully automatic volume quantification of aortic valve calcium in coronary computed tomography angiography, *Cardiovascular Diagnosis and Therapy*, 2017.

**Xinpei Gao**, Sara Boccacini, Pieter H. Kitslaar, Ricardo P.J. Budde, Shengxian Tu, Boudewijn P.F. Lelieveldt, Jouke Dijkstra, Johan H.C. Reiber, Automatic detection of aortic dilatation in baseline and follow-up contrast enhanced computed tomography angiography – submitted to *European Radiology*.

### Conference papers

**Xinpei Gao**, Pieter Kitslaar, Arthur J. H. A. Scholte, Boudewijn P. F. Lelieveldt, Jouke Dijkstra, Johan H. C. Reiber, "Automatic aortic root segmentation in CT: a whole-body dataset", *SPIE Medical Imaging 2016*

**Xinpei Gao**, Shengxian Tu, Michiel A de Graaf, Liang Xu, Pieter Kitslaar, Arthur JHA Scholte, Bo Xu, Johan HC Reiber, "Automatic Extraction of Arterial Centerline from Whole-body Computed Tomography Angiographic Datasets", *Computing in Cardiology 2014*

### Abstracts

**Xinpei Gao**, Sara Boccacini, Pieter Kitslaar, Ricardo P J Budde, Johan HC Reiber, Validation of a novel fully automated aortic annulus measurement

algorithm in cardiac CT data sets, European Society of Cardiac Radiology annual scientific meeting 2016, **Young Abstract Presenter Programme**

**Xinpei Gao**, Pieter Kitslaar, Michiel de Graaf, Boudewijn P.F. Lelieveldt, Jouke Dijkstra, Johan H.C. Reiber, Aortic valve calcium measurement in contrast-enhanced cardiac CT images: Evaluation of a fully automatic method, European Congress of Radiology 2017

Sara Boccalini, **Xinpei Gao**, Pieter Kitslaar, Ricardo P J Budde, Johan HC Reiber, Automatic quantification and visualization of thoracic aorta diameters on successive CTA scans, European Society of Cardiac Radiology annual scientific meeting 2017