Deep learning for automated analysis of cardiac imaging: applications in Cine and 4D flow MRI

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Xiaowu Sun, Pankaj Garg, Sven Plein, Rob J. van der Geest. SAUN: Stack attention U-Net for left ventricle segmentation from cardiac cine magnetic resonance imaging. Medical Physics, 48(4), 1750-1763.

Xiaowu Sun, Li-Hsin Cheng, Sven Plein, Pankaj Garg, Rob J. van der Geest. Deep learning based automated left ventricle segmentation and flow quantification in 4D flow cardiac MRI. Journal of Cardiovascular Magnetic Resonance (under review)

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Curriculum Vitae

Xiaowu Sun was born in Yantai, Shandong Province, China in November,1992. In 2011, he started his bachelor in the major of Applied Mathematics at Dalian Ocean University, Liaoning Province, China. He won national scholarship awards (highest honor) in 2013 and 2014, respectively. In 2015, he received "Best Undergraduate Dissertation Award" and graduated as an "outstanding student" of Liaoning Province. At the same year, he began his master study in the major of software engineering at Capital Normal University, Beijing. In his master project, he developed machine learning based approaches to predict the protein complexes from protein-protein interaction network. In 2018, he got his master degree with "outstanding student".

From September 2018, he started his PhD study in the Division of Image Processing (LKEB) under the Department of Radiology at Leiden University Medical Center in the Netherlands. His PhD project mainly focuses on automated analysis for cardiac MRI using deep learning based methods. The results of his research are included in this thesis.

From May 2023, he worked as a post-doctoral researcher in EPFL, Lausanne, Switzerland, with the project of automated analysis of coronary angiography and cardiac ultrasound images using deep learning, under the supervision of Prof. Emmanuel Abbe and Prof. Pascal Frossard.