



Coronary artery Lumen Segmentation by Deep Learning

PI : Prof. Tzung-Dau Wang

Experience:

President, Taiwan Hypertension Society
Professor of Medicine
National Taiwan University College of Medicine
Director, Division of Hospital Medicine
Director, Cardiac Function Lab
Cardiovascular Center and Division of Cardiology
Department of Internal Medicine, NTUH
Editor-in-Chief, Acta Cardiologica Sinica

Market Needs:

This product is to evaluate the deep learning segmentation result which can understand whether the model can truly predict coronary arteries without doctor's annotation. If we got a good quality of prediction, it may help doctors in the diagnosis of cardiovascular diseases and give appropriate advice and treatment methods to patients. In the future, it would reduce domestic cardiovascular mortality and improve the quality of medical care, and enhance people's health and well-being.

Our Technology:

In generally, the Dice Similarity Coefficient (DSC) is used to evaluate 3D coronary artery reconstruction. DSC is an index to measure the overlap between ground truth and the the reconstructed vascular structure. If DSC closes to 1, it means that the coronary artery reconstruction is more accurate. This product is to solve the false positive problem when evaluating the performance of coronary artery reconstruction which truly reflects the performance of 3D U-net for coronary artery reconstruction.

Strength:

Compared with the original Dice similarity coefficient (DSC), this study considers that the model predicts the unlabeled coronary arteries on CCTA images, and therefore removes the unlabeled coronary arteries that were originally regarded as false positives.

Competing Products:

Dice similarity coefficient (DSC)

Intellectual Properties:

Contact (do not need to fill out):

Center for Industry-Academia Cooperation, NTU
Tel: 02-3366-9945, E-mail: ntuciac@ntu.edu.tw

Contact (do not need to fill out):

Center for Industry-Academia Collaboration, NTU
Tel: 02-3366-9945, E-mail: ordiac@ntu.edu.tw

This information herein is intended for potential license of NTU technology only. Other usage of all or portion of this information in whatever form or means is strictly prohibited. Kindly contact us and we will help to achieve your goal the best we can.