Corflow

AUTOSYMED

utilizes AI/ML based techniques to provide automated analysis of coronarography imaging data to calculate **SYNTAX Score** parameter value that is the basis of diagnosis and subsequent treatment type.

We have identified and distinguished subsequent steps of the Syntax Score calculation algorithm:

1. Data series and optimal frame selection
2. Coronary artery segmentation
3. Branch identification
4. 3D coronary artery tree reconstruction
5. Stenosis identification and lesion specification
6. Syntax score calculation and final report generation

Hospital
DICOM Repos

Data repositories
- Distributed repos
- PACS / Image Data
- EHR Records

Medical
Data Acquisition

Data Base
- Catalogue services
- Categorize, access and interpret data
- Analytical Models

ML Model Training
& Application

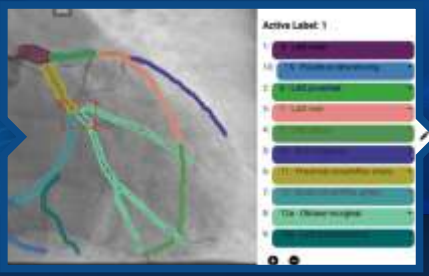
AI Platform & Data sets
- AI Toolset
- Image data with labels
- Benchmark AI Algorithms

Production Workspace
Hospital System integration

CAD Modules
- AI Driven diagnosis
- AI Syntax score

1 **2D Coronary Angiography**

2 **Automatic Segmentation and lesion detection**



3 **Automatic 3D Reconstruction**

4 **Automatic Syntax Score Calculation**

Benefits for Patients

- Faster diagnosis and access to personalized treatment,
- Improved clinical outcome, survival rate,
- Quality of life,
- Better performance from Mds
- Shorter waiting time to the specialist

Iceland Liechtenstein Norway grants
Norway grants

Benefits for Healthcare Unit

- Minimalization of laborious, manual MDs' work that can be supported by AI therefore the MD can focus more on patient
- Automated calculation of Syntax Score which is a prediction factor recommended by European Society of Cardiology
- Direct decision support during Coronary Angiography
- Scalable and integrated AI tools for most complex cardiology use cases
- Remote Computer Aided Diagnosis to enable expert knowledge exchange
- Support of optimal therapy selection.

Thanks to our application, the SYNTAX score calculation process is greatly simplified. On the one hand, it is automated, it detects changes suspected of significantly narrowing the lumen of the vessel and determines the segment in which they are located, but leaves the hemodynamist the ability to influence the process of calculating the results, e.g. if he performs, in addition to classic coronary angiography, also a physiological examination e.g. FFR/iFR or imaging (IVUS/OCT) and on the basis of such an examination considers the stenosis to be insignificant.

In addition, due to the fact that the calculation of the SYNTAX score by our application is a step-by-step process, also the initial phase consisting in the detection of places suspected of significant stenosis will certainly be useful as a helpful tool in the interpretation of the coronary angiography image for both experienced hemodynamics and will reduce the likelihood of overlooking the stenosis by young adepts, for whom it can be an invaluable added value for the difficult process of education in hemodynamics.

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