The role of Al in medical practice Mihai Creteanu, Emergency County Hospital Suceava



Emergency County Hospital Suceava

- One building 1200 beds
- Imaging platform (2 CT, 2 IRM, 2 Angio)
- Imaging medical team below 40 y
- 2012 first Emergency County Hospital with angio suit
- 2018 first contatct with IA
- Multidisciplinary teams:
 - Diabetic foot team
 - Neuro interventional team (neurology/ neurosurgery/ interventional radiology)
 - Vascular acces (nefrology/ vascular surgery/ intervention radiology)











Artificial Intelligence Assisted Diagnosis for Peripheral Arterial Disease



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AI-PAD

Peripheral Arterial Disease (PAD)



A disease in which plaque builds up in the arteries that carry blood to the head, organs, and limbs

- hardens and narrows the arteries, limiting the flow of oxygen-rich blood to the organs and other parts of the body
- associated with a marked increase in cardiovascular (CV) risk
- early treatment of PAD may lead
 to a decrease in future
 atherosclerotic events and CV
 mortality



NORMAL ARTERY ATHEROSCLEROSIS NARROWED ARTERY





Epidemiology of peripheral artery disease in Europe: VAS Educational Paper International Angiology 2018 August;37(4):327-34

Project Objectives



Develop an intelligent software system able to automatically identify the arteries, detect abnormalities and facilitate the diagnosis in Angio-CTs.

- 1. deep learning
- 2.
- 3. artery segmentation and occlusion detection
- Deployment in a clinical environment 4.



Development of artery segmentation algorithms based on computer vision and

Development of the software module that detects abnormalities and aids the doctor by decreasing the time for image study

Implementation of an interactive viewer for the DICOM images that provides sagittal and coronal reconstruction functionality and integrates the AI module for



Cross-sectoral collaboration



- A diagnostic medical clinic with 23 ٠ years of experience Healthcare
- Radiologists qualified in Vascular • Imaging and Interventional Radiology
- Having about 1600 patients • scanned every year, is the only medical center in the area where angio-CT examinations can be performed



SENTICLAB

- Founded in 2017, focused on applied research in Artificial Intelligence
- Close collaborations with the ٠ "Alexandru Ioan Cuza" University of lasi (UAIC)



ICT

- Founded in 2002, specialized in software **R&D** services
- Cooperations with a wide range of business partners from Romania, Netherlands, USA, Australia, UK, France, Belgium

Results



egnentation

Results

2020 Wonder Year

- 2020
- 2021 NicoLab Neuro Stroke
- First stroke comprehensive center in NE region august 2021

Xvision - Rx, CT toracic - first Hospital with this facility in NE region march

iMAGO·MOL

Clusterul Regional Inovativ de Imagistică Moleculară și Structurală Nord-Est

