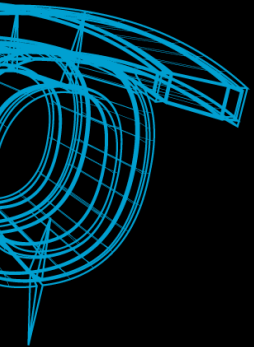


MICINN – Imágenes Médicas Publicaciones 2011 - 2012

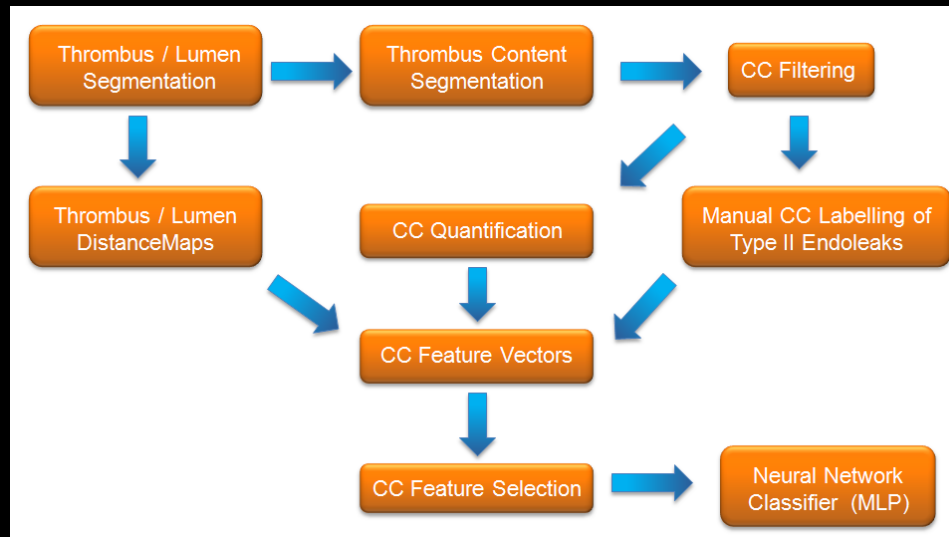
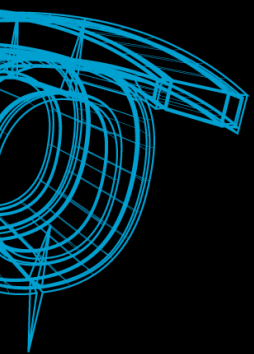
Iván Macía – 11/01/2012

- Macía, I.; Graña, M.; Maiora, J.; Paloc, C. & de Blas, M.
Detection of type II endoleaks in abdominal aortic aneurysms after endovascular repair
Computers in Medicine and Biology, 41:871-89, 2011
- Abstract:
 - Abdominal aortic aneurysm (AAA) is a condition where the weakening of the aortic wall leads to its widening and the generation of a thrombus. To prevent a possible rupture of the aortic wall, AAA can be treated non-invasively by means of the endovascular aneurysm repair technique (EVAR), consisting of placing a stent-graft inside the aorta by a catheter to exclude the aneurysm sac from the blood circulation. A major complication is the presence of liquid blood turbulences, called endoleaks, in the thrombus formed in the space between the aortic wall and the stent-graft. In this paper we propose an automatic method for the detection of type II endoleaks in computer tomography angiography (CTA) images. The lumen and thrombus in the aneurysm area are first segmented using a radial model approach. Then, these regions are split into Thrombus Connected Components (TCCs) using a watershed-based segmentation and geometric and image content-based characteristics are obtained for each TCC. Finally, TCCs are classified into endoleaks and non-endoleaks using a multilayer Perceptron (MLP) trained on manual labeled sample TCCs provided by experts.

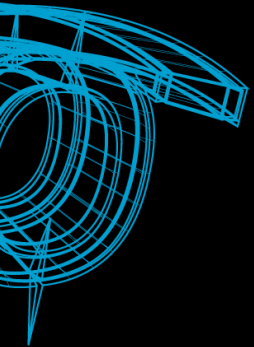


PUBLICACION 1

- Macía, I.; Graña, M.; Matora, J.; Paloc, C. & de Blas, M.
Detection of type II endoleaks in abdominal aortic aneurysms
after endovascular repair
Computers in Medicine and Biology, 41(10):871-89, 2011
- Comentarios:
 - Dentro de/del los capítulos de aplicaciones específicas de análisis vascular de la tesis
 - Relacionado con el proyecto SERENA de aneurismas de aorta.

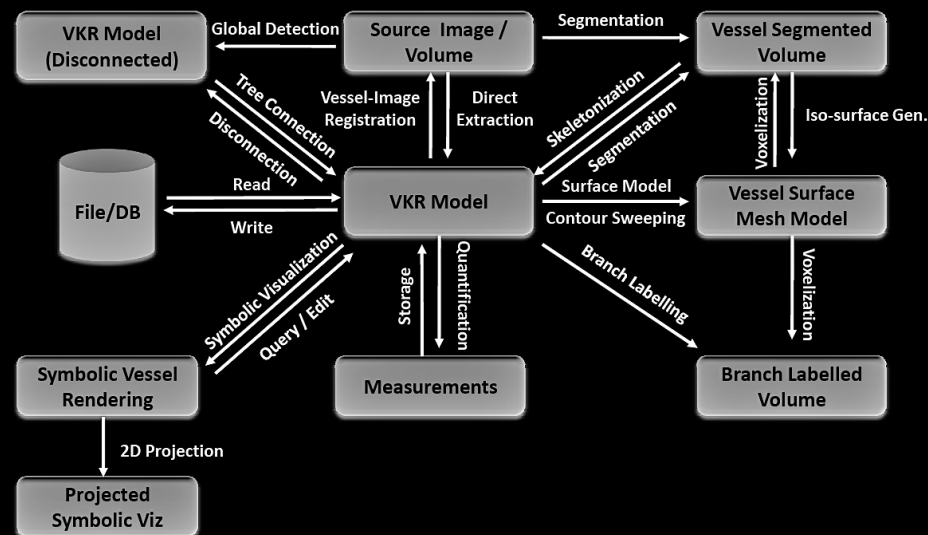
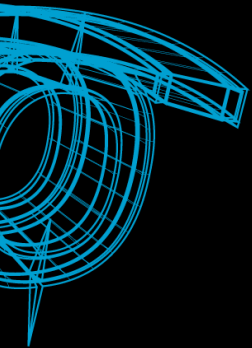


- Macía, I.; Graña, M.; Paloc, C.
Knowledge Management in Image-based Analysis of Blood Vessel Structures
Knowledge and Information Systems, 30:871-89 , 2012
- Abstract:
 - We have detected the lack of a widely accepted knowledge representation model in the area of Blood Vessel analysis. We find that such a tool is needed for the future development of the field and our own research efforts. It will allow easy reuse of software pieces through appropriate abstractions, facilitating the development of innovative methods, procedures and applications. We include a thorough review of vascular morphology image analysis. After the identification of the key representation elements and operations, we propose a Vessel Knowledge Representation (VKR) model that would fill this gap. We give insights into its implementation based on standard Object-Oriented Programming tools and paradigms. The VKR would easily integrate with existing medical imaging and visualization software platforms, such as the Insight ToolKit (ITK) and Visualization Toolkit (VTK).

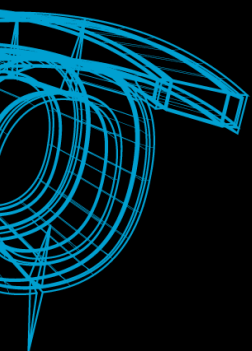


PUBLICACION 1

- Macía, I.; Graña, M.; Paloc, C.
Knowledge Management in Image-based Analysis of Blood Vessel Structures
Knowledge and Information Systems, 30(2):871-89, 2012
- Comentarios:
 - En el issue de Febrero de 2012!!!
 - Constituye el núcleo de la tesis, enlazando la detección y extracción vascular con las aplicaciones a través de un modelo de información vascular.



- HAIS 2012 (aceptada)
 - Vascular Section Estimation in Medical Images using Combined Feature Detection and Evolutionary Optimization.
 - Cubre parte de los capítulos de detección y extracción vascular.
- ISBI 2012 (Int. Symp. on Biomedical Imaging) (pendiente)
 - Fast Segmentation of Thrombus of Abdominal Aortic Aneurysms for Endovascular Repair Planning and Follow-up
 - Dentro de/del los capítulos de aplicaciones específicas de análisis vascular de la tesis
 - Reenviado del rechazado en MICCAI
- Publicaciones futuras:
 - Terminar la tesis primero ☺
 - Posible publicación en *J. of Mathematical Imaging and Vision* o similar, de los modelos ideales para análisis vascular.
 - Posible publicación en *Computer Methods and Programs in Biomedicine*, con el software de análisis vascular (IVAN)



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