

ART 3.5D – a novel algorithm, to label arteries and veins from 3D angiography

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Several neurosurgical procedures, such as Artero Venous Malformations (AVMs), aneurysm embolizations and StereoElectroEncephaloGraphy (SEEG) require accurate reconstruction of the cerebral vascular tree, as well as the classification of arteries and veins, to increase the safety of the intervention. We propose a novel approach attempting to recover the dynamic information from standard Contrast Enhanced Cone Beam Computed Tomography (CE-CBCT) scans. The algorithm proposed by our team is called ART 3.5 D. It is a novel algorithm based on the post- processing of both the angiogram and the raw data of a standard Digital Subtraction Angiography from a CBCT (DSA- CBCT) allowing arteries and veins segmentation and labeling.