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Invited talk: Can AI make us see beyond the visible: Toward CE marked deep learning software for medical image analysis

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We have witnessed the unprecedented success of deep learning in virtually all areas of science and industry, with medical image analysis not being an exception here. Although there are a plethora of deep learning-powered techniques that established the state of the art in the field, e.g., in the context of automatic delineation of human organs and tumors in various image modalities, deploying such methods in clinical settings is a challenging process. In this talk, we will show how deep learning, potentially coupled with computational fluid dynamics, can help uncover important clinical information to diagnose and monitor of the coronary artery disease from CCTA, or to analyze brain tumors from MRI. Also, we will discuss our approach for building Sens.AI – a CE marked deep learning product for automated brain tumor analysis. We will show how to design thorough evidence-based verification and validation procedures for such techniques in scenarios, in which collecting large, heterogeneous, and high-quality ground truth is time-consuming, user-dependent and error prone.

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