UNIVERSITY OF SOUTH FLORIDA

Major Research Area Paper Presentation

Explainable Medical Image Analysis: Current Methods, Limitations, and Future Directions
by
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For the Ph.D. degree in Computer Science and Engineering

Many AI-based techniques function as a black-box without a rigorous explanation for their decision-making processes. To enhance trust and gain better acceptance of AI-based solutions in medical settings, better clarity is needed. In recent years, there has been a growing effort to address this challenge using eXplainable AI (XAI), a set of techniques, strategies, and algorithms focused on understanding the "how and why" of DNNs. In this review, we provide a comprehensive review of state-of-the-art XAI techniques with a specific focus on medical image applications. We identify four categories of XAI approaches based on the nature of their explanations and highlight the strengths and limitations of each category. Additionally, we explore a range of evaluation metrics for assessing the effectiveness of XAI approaches. Finally, we discuss several research directions concerning the explainability of DNNs for medical images.

Friday, April 7th, 2023
1:00PM
Online(MS Teams)

THE PUBLIC IS INVITED

Examining Committee

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