**Artificial intelligence as a tool for diagnosis in digital pathology whole slide images: A systematic review**

* The use of digital whole slide images (DWSIs) in clinical practise has sparked rapid growth in digital pathology, and the field of pathology has been experiencing a pathologist shortage recently. This situation opened new lines of investigation towards using artificial intelligence (AI) to assist pathologists. One of them is automated diagnosis, which aids in clinical decision support and boosts the accuracy and effectiveness of diagnosis. Yet, because of the complexity of the
* To develop a trustworthy AI model for diagnosis of WSIs, unique approaches are required. In order to examine and discuss all the techniques and outcomes used by AI in digital pathology in WSIs, we conducted a comprehensive review of the literature.
* H&E stain, looking into the potential of AI as a pathologist's diagnostic aid in a typical real-world scenario. This review evaluates 26 studies, detailing all the most effective ways to use AI as a diagnostic tool as well as its primary drawbacks. It also makes new recommendations for how to further the AI sector in digital pathology as a whole. We anticipate that this research will improve the use of AI as a pathological diagnostic tool, assisting present and future researchers in the creation of new investigations and initiatives.
* The purpose of this study was to report the findings of a thorough evaluation of the literature on studies that used artificial intelligence methods to diagnosis histopathology in entire slides images. The primary aspects of the methodological process (database, picture pre-processing, AI models, and training techniques) as well as the outcomes and limits were analysed, contrasted, and discussed in this paper.
* Also, we made a strong case for paying close attention to several study flaws, namely the shoddy use of external test sets and the dearth of model comparisons.
* We also highlight the importance of expanding public datasets, competitions, and the application of self-distillation techniques to produce better outcomes and quick inferences.