Histopathology Atlas: An open-source Whole Slide Image (WSI) collection for educational purposes

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Introduction

WSI for medical school and resident education became popular recently. Storage and sharing WSI via web has challenges. We are developing a modular, free, open-source WSI collection for educational purposes.

Material and methods

Slides are scanned with Leica Aperio AT2 or GT450 at 40x and anonymised. Regions are cropped from svs images using ImageScope. The svs files are converted into dzi using VIPS software. The files are modified with OpenSeadragon and plugins, then uploaded to GitHub servers.

The website is built with Quarto and hosted on GitHub pages, rendered into Turkish and English websites via GitHub actions, with monthly pdf, epub releases.

Collections from different institutions (with youtube videos) and images with artificial reality features are being added.

Results

The Histopathology Atlas is available via https://www.histopathologyatlas.com/ and https://www.patolojiatlasi.com/ also as ebook and pdf. The codes are available https://github.com/pathologyatlas/ and https://github.com/patolojiatlasi/.

Being dependent only on static website features it is possible to publish from various servers without database structure. The images are divided into small tiles which makes the storage and sharing of images easier. Templates are used, thus rendering of different formats are easier.

Conclusion

The Histopathology Atlas is an ongoing initiative with regular updates and open to contributions. Having a modular structure it is easy to restructure and create different versions for different courses. Since the WSI are converted merely into a website format, they can be downloaded, carried and presented without additional software. Although Openseadragon has long been used for research and pathology images, with the availability of digital pathology we are using it to expand the educational use.

Keywords: atlas, education, opensource, wsi, histopathology,

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