

Corista Virtual Slide Stage: Potential for Use in Daily Practice

Maxwell D Wang, MD; Mustafa Yousif, MD; Jacob T. Abel, MD; Jerome Cheng, MD; David S. McClintock, MD

Department of Pathology, University of Michigan

Abstract

Background: With the increasing push for digitization in pathology, the way in which pathologists interact with whole slide images (WSI) must also undergo further development. While multiple interfacing devices have been proposed and some tested, there is still no single gold-standard, with the vast majority of WSI viewers relying on the traditional mouse and keyboard combination. The aim of this study is to describe a novel WSI input device aimed at easing the transition for pathologists from analog (glass) to digital.

Technology: The Corista Virtual Slide Stage (Corista, Concord, MA) is an early prototype input device for WSI consisting of a thin rectangular “slide” sitting atop a rectangular stage with optical sensors for directional movement. The device also includes an attached keypad console used to change magnification levels, navigating between WSI in the virtual “tray,” and returning to the case queue.

Methods: Five pathologists of varying levels of training participated in this study. Using the Corista Virtual Slide Stage, 20 possible cases were reviewed on Corista’s DP3 digital pathology platform (Corista, Concord, MA), and evaluation of the input method was performed on at least 5 cases. Free-text feedback was then solicited in regards to the use of the novel prototype input device.

Results: Overall, the five pathologists were encouraged by the use of the prototype device, each commenting favorably on its ease of use and ergonomics. The use of dedicated hotkeys for magnification and slide switching were noted as positive aspects of the device. The pathologists noted that while the similarity of navigation was similar to a traditional microscope, there were some aspects of the device that could be fine tuned in future iterations, e.g. the size of the stage relative to the slide and the ability to further customize keymappings and sensitivity of the directional movement.

Conclusions: We present here an initial evaluation of an early prototype input device for WSI that mimics traditional slide navigation for digital pathology. Overall we agree that the Corista Virtual Slide Stage has great potential over the current standard mouse/keyboard default combination and look forward to additional developmental iterations.