Olli: An Extensible Visualization Library for Screen Reader Accessibility

Authors: Matthew Blanco, Jonathan Zong, Arvind Satyanarayan

Summary:

Though recent research has explored the design of rich screen reader visualization experiences, accessible visualizations for blind and low vision users remain rare on the web. While some visualization toolkits offer accessible solutions, toolkit-specific implementations can present idiosyncratic user experiences that limit learnability. We present Olli, an open source library that converts visualizations into a keyboard-navigable structure accessible to screen readers. Using an extensible adapter design pattern, Olli is agnostic to the specific toolkit used to author the visualization. Olli renders a chart as an accessible tree view following the HTML Accessible Rich Internet Applications (ARIA) standard. Olli helps visualization developers easily create accessible visualizations across visualization toolkits.

ACM Author Affiliations: Matthew Blanco: Northeastern University; Jonathan Zong: Massachusetts Institute of Technology; Arvind Satyanarayan: MIT