High-level accessibility review – LAA (ArXiv Platform)

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ArXiv Platform

Summary

Top 3 problems for the ArXiv Platform

This high-level assessment covers limited portions and functionality of the ArXiv Platform. The assessment revealed issues with assistive technology compatibility, resulting in some users missing information required to understand content, states and operate functions. It is important to keep in mind that the findings represent a high-level assessment, and do not reflect the results of a Deque Comprehensive Web Assessment.

1. **Contrast Minimum** – Search link text on all pages does not have enough contrast and this appears multiple times on several pages.
2. **Non-text Contrast** – There are interactive elements throughout the pages that have contrast issues for both the initial state as well as the focus state.
3. **Keyboard** – Tabs throughout the site do not function with the keyboard alone. This makes a large portion of the content inaccessible to many users.

Accessibility findings

Automated findings using Axe

Issues found through automated testing come from the Axe plugin, an open-source accessibility testing tool that is available for Chrome, Firefox and Edge. Details here: [https://www.deque.com/products/axe/](https://www.deque.com/products/axe/).

There were no site wide issues found using automated scans.

Additional manual findings using NVDA screen reader

1. **SC 1.4.3 AA** – Contrast Minimum – On the red header bar on each page the placeholder text “Search” (#E4E4E4) in the search field only has a 1.3:1 contrast ratio with the background (#ffffff) and must have at least a 4.5:1 contrast ratio.
2. **SC 1.4.11 AA** – Non-text contrast – On the red header bar on each page the focus indicator (#913644) on the “Search button” only has a contrast ratio of 1.1:1 with the background (#B21A1B) behind the button and must have at least 3:1 contrast.
3. **SC 3.3.2 A** – Labels or instructions – On the red header bar on each page the “Search field” is only labelled by the placeholder text but the placeholder text disappears when the user interacts with the field. The label should remain visible when the user interacts with the field.
1. Landing Page

Source: https://arxiv-org.offcampus.lib.washington.edu/search/

Test case: Test initial interface/landing page to ensure menus, sub-menus, search box, images, icons, etc. are accessible.

Automated findings using Axe

1. **SC 4.1.2 A – Name, Role, Value** – The form tag surrounding the search box has an aria-role="search" when it should be role="search".

2. **SC 4.1.2 A – Name, Role, Value** – The select tag for “field” has a hidden label that cannot be read by screen reader. Display none is used on the label.

Additional manual findings using NVDA screen reader

4. **SC 1.4.3 AA – Contrast Minimum** – The placeholder text “Search” (#E4E4E4) in the search field only has a 1.3:1 contrast ratio with the background (#ffffff) and must have at least a 4.5:1 contrast ratio.

5. **SC 1.4.11 AA – Non-text contrast** – The border (#E4E4E4) on the “search field” only has a 1.3:1 contrast ratio with the background (#ffffff) and must have at least a 3:1 contrast ratio.

6. **SC 1.4.11 AA – Non-text contrast** – The focus indicator (#B2CBE4) on the “Search button” only has a contrast ratio of 1.7:1 with the background (#ffffff) behind the button and must have at least 3:1 contrast.

7. **SC 3.3.2 A – Labels or instructions** – Search field is only labelled by the placeholder text, but the placeholder text disappears when the user interacts with the field. The label should remain visible when the user interacts with the field.
2. Search Results – Momentum

Source: https://arxiv.org/offcampus.lib.washington.edu/search/?query=momentum&searchtype=all&abstracts=show&order=announced_date_first&size=50

Test case: From the initial landing page, conduct a search for: momentum. Test search results page, including results per page and sort by options.

Automated findings using Axe

1. SC 4.1.2 A – Name, Role, Value – The form tag surrounding the search box has an aria-role="search" when it should be role="search".
2. SC 4.1.2 A – Name, Role, Value – The select tag for "field" has a hidden label that cannot be read by screen reader. Display none is used on the label.

Additional manual findings using NVDA screen reader

1. SC 1.4.3 AA – Contrast Minimum – The placeholder text “Search” (#E4E4E4) in the search field only has a 1:3.1 contrast ratio with the background (#ffffff) and must have at least a 4.5:1 contrast ratio.
2. SC 1.4.11 AA – Non-text contrast – The border (#E4E4E4) on the “search field” only has a 1:3:1 contrast ratio with the background (#ffffff) and must have at least a 3:1 contrast ratio.
3. SC 1.4.11 AA – Non-text contrast – The focus indicator (#B2CBE4) on the “Search button” only has a contrast ratio of 1.7:1 with the background (#ffffff) behind the button and must have at least 3:1 contrast.
4. SC 2.4.6 AA – Headings and Labels – On each search result there are links to “pdf”, “ps”, and “other”. The link text is duplicated for each search result creating multiple links with the same name. The accessible name for each of these needs to include additional information such as the document title to distinguish which pdf, ps or other file is being opened.
5. SC 2.4.7 AA – Focus Visible – The selected page in the search results pagination is missing a focus indicator.
6. SC 3.3.2 A – Labels or instructions – Search field is only labelled by the placeholder text, but the
placeholder text disappears when the user interacts with the field. The label should remain visible when the user interacts with the field.

3. Individual Search Results Landing Page


Test case: Select "Exceptional Points and Braiding Topology in Non-Hermitian Systems with long-range coupling" test individual search result landing page. Switch between tabs (from Bibliographic Tools to Related Papers) and test actual PDF.

Automated findings using Axe

1. **SC 1.4.1 A** – Link Color Contrast – blue link text (#0000ee) does not have at least 3:1 contrast (2.23:1) with the surrounding black text (#000000). This occurs repeatedly throughout the page. Link either needs more contrast or an additional differentiator needs added such as an underline.

2. **SC 4.1.2 A** – Name, Role, Value – Above the read header bar there is a link set to aria-hidden="true".

Additional manual findings using NVDA screen reader

1. **SC 1.4.11 AA** – Non-text contrast – The toggles (fffffff) only has a 1.6:1 contrast ratio with the background (CCCCCCCC) and must have at least a 3:1 contrast ratio.

2. **SC 2.2.1 A** – Keyboard – The tabs (Bibliographic Tools, Demos, Related Papers, etc.) are not accessible with the keyboard alone.

3. **SC 2.4.7 AA** – Focus Visible – The toggles receive focus but do not have a focus indicator.
4. Advanced Search

Source: https://arxiv-org.offcampus.lib.washington.edu/search/advanced?terms-0-term=momentum&terms-0-field=all&size=50&order=-announced_date_first

Test case: Test advanced search page.

Automated findings using Axe

1. **SC 4.1.2 A** – Name, Role, Value – When an additional search term is added an “And/OR” select element appears but the select element is missing an accessible name.

Additional manual findings using NVDA screen reader

1. **SC 1.4.3 AA** – Contrast Minimum – The placeholder text “Search”, “specific year”, “from”, “to” (#E4E4E4) in the search field only has a 1.3:1 contrast ratio with the background (#ffffff) and must have at least a 4.5:1 contrast ratio.

2. **SC 1.4.11 AA** – Non-text contrast – The border (#E4E4E4) on the “search”, “specific year”, “from”, and “to” fields only have a 1.3:1 contrast ratio with the background (#ffffff) and must have at least a 3:1 contrast ratio.

3. **SC 1.4.11 AA** – Non-text contrast – The focus indicator (#B2CBE4) on the “Search button” only has a contrast ratio of 1.7:1 with the background (#ffffff) behind the button and must have at least 3:1 contrast.

4. **SC 3.3.2 A** – Labels or instructions – Search field is only labelled by the placeholder text, but the placeholder text disappears when the user interacts with the field. The label should remain visible when the user interacts with the field.