Accessiblü

Managed Digital Accessibility Ops

Accessibility Evaluation Report:

Scopus Research Database Library

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Conducted by: Accessiblü, LLC

For: Library Accessibility Network (LAA)

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Summary of Accessibility Findings

Accessiblü conducted a **high-level accessibility evaluation** of the Scopus Research Database platform to assess its usability for individuals with disabilities. The review was conducted using the JAWS screen reader, keyboard-only navigation, and manual inspection for conformance to select WCAG 2.2 AA success criteria.

Key Findings

The Scopus research database offers a sophisticated platform with comprehensive academic search capabilities. The interface provides clear visual organization, well-structured content areas, intuitive navigation tabs, and a logical visual hierarchy. We identified several positive aspects during our testing, including properly labeled main navigation elements, consistent site structure, and informative search documentation.

However, we also encountered accessibility challenges that would impact users with disabilities. The platform has opportunities for improvement in areas such as interactive element coding, ARIA states implementation, keyboard navigation, and dynamic content announcements. These issues may create difficulties for screen reader users and keyboard-only users attempting to navigate the site, conduct searches, and access research content.

The platform shows promise in its overall structure and demonstrates attention to some accessibility considerations. With targeted improvements to address the identified concerns, Scopus could significantly improve the experience for persons with disabilities and users of assistive technology, allowing everyone equal access to its wealth of academic resources.

Top 3 Issues Identified

1. **Keyboard Traps and Focus Management Issues**
    a. Users become trapped in certain interface components (like feedback popups), and focus is unpredictably managed, often jumping to unrelated page sections.
    b. Impact: Keyboard-only users, including those with motor disabilities and screen reader users, cannot effectively navigate the interface, becoming stuck in certain areas or losing their place.
    c. WCAG Success Criteria: 2.1.2 No Keyboard Trap (A), 2.4.3 Focus Order (A))

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2. **Improperly Coded Interactive Elements**
    a. Many buttons are incorrectly coded as links, dropdown menus and dialogs have incorrect ARIA roles, and other essential controls lack proper semantic markup.
    b. Impact: Screen reader users receive misleading or incomplete information about interactive elements, making it difficult to understand how to interact with the interface.
    c. WCAG Success Criteria: 4.1.2 Name, Role, Value (A)

3. **Inaccessible Dynamic Content**
    a. Search results, filter applications, and other dynamically updated content are not announced to screen reader users, and there are no proper ARIA live regions.
    b. Impact: Screen reader users cannot determine what has changed on the page after performing actions like submitting a search or applying filters, making it impossible to know if their actions were successful.
    c. WCAG Success Criteria: 4.1.3 Status Messages (AA)

Blind and Low-Vision Users

- **Issues:** Improperly coded interactive elements, missing ARIA properties, lack of live region announcements, keyboard traps, and inconsistent heading structures.

- **Impact:** Screen reader users cannot understand the function of controls, navigate effectively, or know when content has updated. The platform often becomes completely unusable at critical points in the user journey, such as when viewing search results.

Users with Motor Disabilities

- **Issues:** Keyboard traps, poor focus management, and unpredictable focus order when navigating.

- **Impact:** Users who rely on keyboard navigation cannot effectively move through the interface. They become trapped in certain components or lose their place as focus unexpectedly jumps to different sections.

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Neurodiverse Users

- **Issues:** Inconsistent UI patterns, unpredictable behavior, and complex interfaces without clear instructions or feedback.

- **Impact:** Users with cognitive disabilities struggle to develop a mental model of how the interface works due to inconsistent patterns and behavior. The lack of clear feedback creates additional cognitive load, making the platform challenging.

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Page-Specific Findings and Impact Analysis

The following section lists the accessibility findings by **Page** and **WCAG violations** and describes their impact on users.

Scopus Landing Page

Issue	WCAG Success Criteria	Description	Example
Tab Navigation Issues	**2.4.3 Focus Order (A)**	Tab order doesn't follow a logical sequence, with focus jumping unexpectedly between unrelated elements.	When tabbing from the document tabs, focus unexpectedly jumps to unrelated elements instead of moving to the next tab.
No Error Announcements	**3.3.1 Error Identification (A)**	When form validation errors occur, they are not announced to screen reader users.	When submitting a search without entering required terms, no error is programmatically announced to screen readers.
Mislabeled Form Controls	**3.3.2 Labels or Instructions (A)**	Search fields have inconsistent or missing labels.	The main search field is announced as "add search field button" rather than identifying its purpose as a search input.
Incorrectly Coded Toggle Controls	**4.1.2 Name, Role, Value (A)**	Dropdown menus are announced as "collapsed dialogues" but coded as links, making their true function unclear.	The "How can we help" control is coded as a link but functions as a dropdown button with expanded/collapsed states.
Missing ARIA States	**4.1.2 Name, Role, Value (A)**	Interactive components do not properly communicate their states to screen readers.	Tab panels do not properly announce their selected/unselected states to screen readers.

Impact Summary:

Screen reader users face significant difficulty using the homepage due to improperly coded interactive elements and confusing tab navigation. The inconsistent announcements of UI components make it challenging to understand what actions are available. Form controls with incorrect labels prevent users from effectively completing the search form, and the lack of error announcements means they cannot identify what went wrong if their search fails. These issues collectively make the primary function of the platform—searching for academic content—extremely difficult for users with disabilities.

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Scopus Landing Page Screenshot

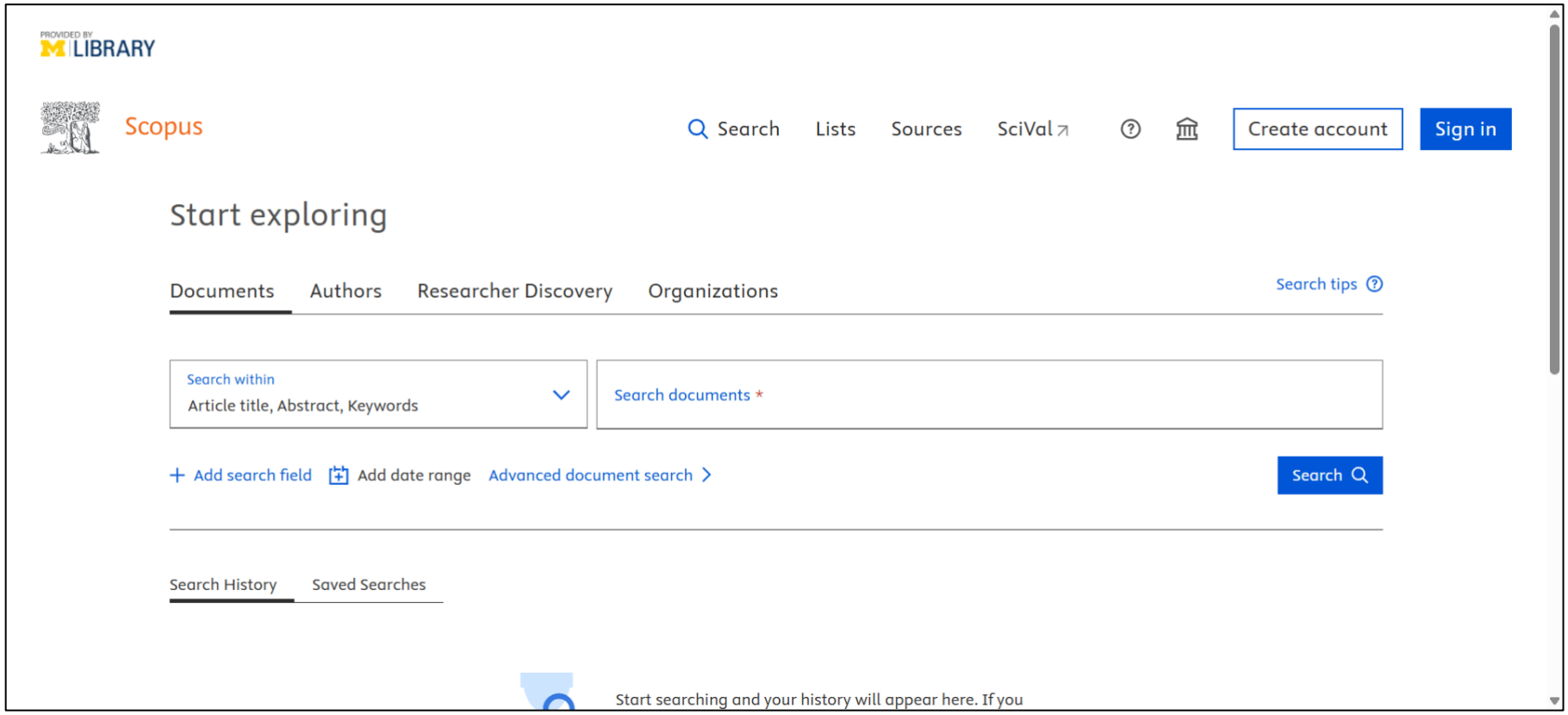

Figure 1. The Scopus landing page with the main search interface, featuring tabs for different content types and search controls.

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Scopus Search Results Page

Issue	WCAG Success Criteria	Description	Example
Inaccessible Filter Controls	**1.3.1 Info and Relationships (A)**	Filter and sort options cannot be accessed via keyboard navigation.	Screen reader users cannot access the filter options that appear on the results page.
Keyboard Trap in Feedback Dialog	**2.1.2 No Keyboard Trap (A)**	After submitting a search, users become trapped in a feedback dialog with no way to exit.	The feedback popup that appears after search captures keyboard focus, and escape key is the only way out, which is not communicated.
Unpredictable Focus Management	**2.4.3 Focus Order (A)**	Focus returns to top of page after interacting with filters or using sorting options	After submitting a search, focus is placed on a feedback dialog rather than the search results, disorienting users.
Missing Live Regions	**4.1.3 Status Messages (AA)**	Search results and status updates are not announced to screen reader users.	When search results load, screen readers do not announce the number of results found or any other confirmation.
Missing Search Results Announcements	**4.1.3 Status Messages (AA)**	No announcement is made when search results are updated after applying filters.	When filters are applied, screen readers are not informed that results have updated.

Impact Summary:

The search results page presents critical barriers that make it virtually impossible for screen reader users to review and interact with search results. The keyboard trap in the feedback dialog prevents users from even accessing the results content. The lack of proper announcements for search results and status updates means users cannot confirm their search was successful or understand how many results were found. These issues effectively render the core functionality of the research database—presenting searchable academic content—inaccessible to users with disabilities.

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Search Page Screenshot

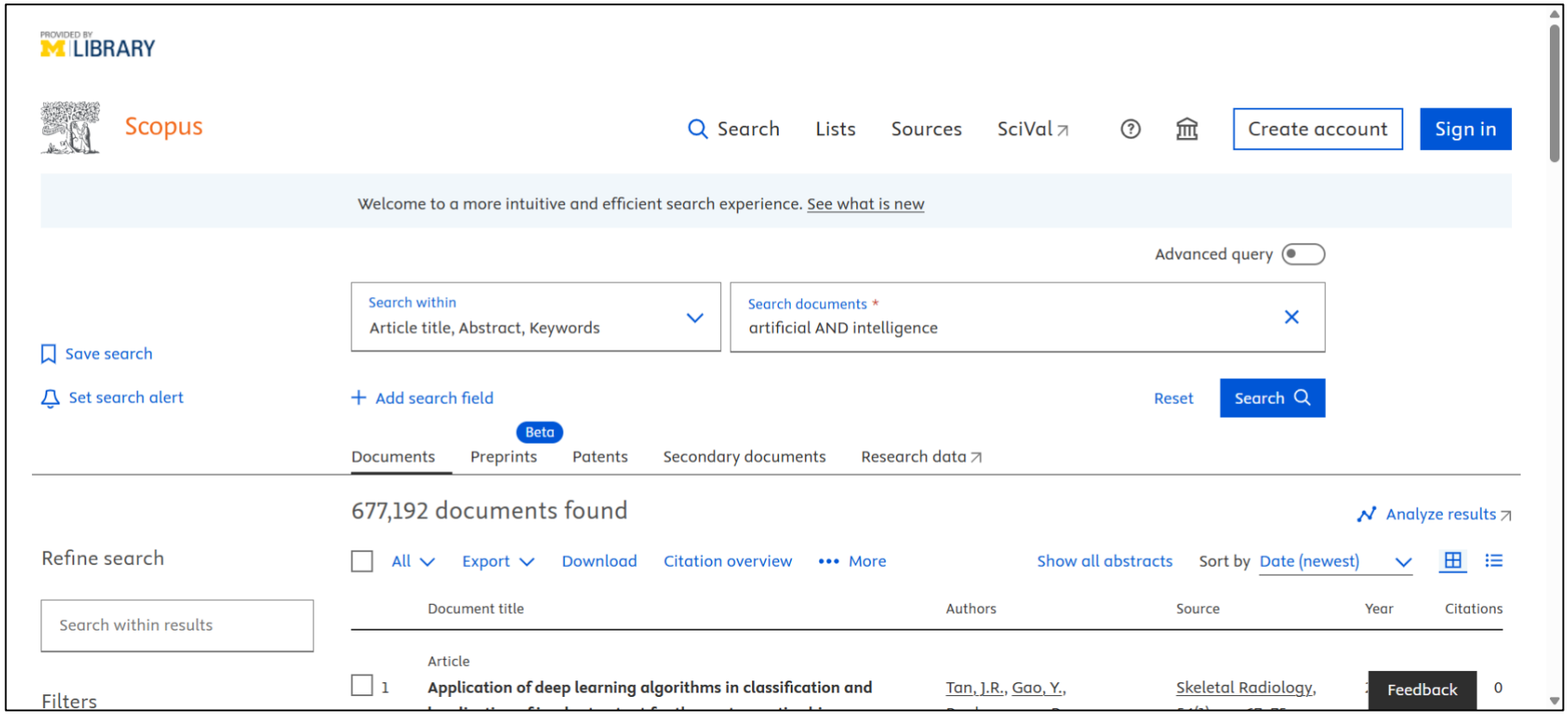

Figure 2. The Scopus search results page showing filtered results for a search on "artificial intelligence" with 677,192 documents found.

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Advanced Search Page

Issue	WCAG Success Criteria	Description	Example
Improper List Structure	**1.3.1 Info and Relationships (A)**	Lists with multiple items are incorrectly announced as containing only one item.	A list of field codes containing 6 items is announced as "list of one item."
Inconsistent Button Labeling	**2.4.6 Headings and Labels (AA)**	Button labels are inconsistent and sometimes cryptic.	Field code buttons like "Doc Title Abstract Left Paren Title Dash Abs Right Paren" are confusing and do not clearly convey their purpose.
Redundant Announcements	**3.2.2 On Input (A)**	Some elements are announced twice, creating a confusing experience.	When activating certain buttons, the same information is read twice, once from a popup and once from the page content.
Complex Nested Accordions	**4.1.2 Name, Role, Value (A)**	Heavily nested accordion controls make navigation cumbersome.	The field codes section contains multiple levels of nested accordions that are difficult to navigate.
Missing Live Region Updates	**4.1.3 Status Messages (AA)**	Dynamic content updates are not announced to screen reader users.	When selecting buttons like field codes or operators, additional information appears on the page but is not announced.

Impact Summary:

The advanced search page, which should provide powerful search capabilities for researchers, is severely compromised by accessibility issues. The improper list structures and unclear button labels make it difficult for screen reader users to understand the available options. The lack of live region announcements means users cannot tell when their actions have caused content to update. These issues combine to make the advanced search functionality, which is essential for academic researchers, extremely difficult or impossible to use effectively with assistive technology.

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Advanced Search Page Screenshot

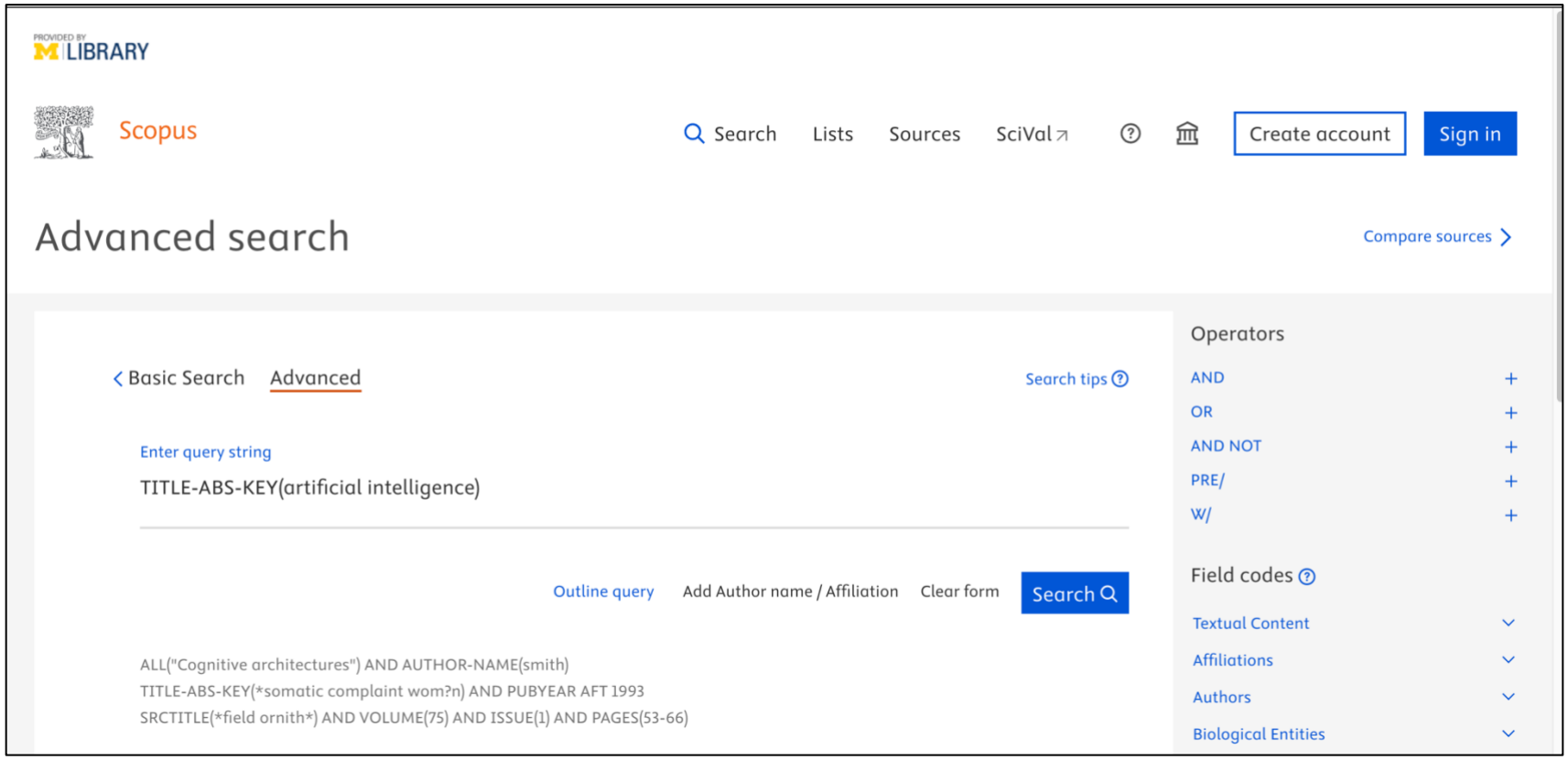

Figure 3. The Scopus advanced search interface showing query fields and operators.

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Code Snippets

The following are code snippets from some of the more critical WCAG issues and an example of a recommended fix.

1. Image-Based PDFs (1.1.1 Non-text Content)

Current implementation:

```
html
<!-- PDFs are generated as image-based files without text layer -->
<a href="/doi/pdf/10.3417/2003187" class="pdf-download">Download Paper</a>
```

Recommended fix:

```
html
<!-- Provide accessible PDF with proper tagging structure -->
<a href="/doi/pdf/10.3417/2003187" class="pdf-download">Download Paper</a>
<!-- And add alternative formats -->
<div class="alternative-formats">
  <h3>Alternative Formats:</h3>
  <ul>
    <li><a href="/doi/html/10.3417/2003187">HTML Version</a></li>
    <li><a href="/doi/epub/10.3417/2003187">EPUB Version</a></li>
    <li><a href="/doi/txt/10.3417/2003187">Plain Text</a></li>
  </ul>
</div>
```

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2. Inaccessible Filter Checkboxes (4.1.2 Name, Role, Value)

Current problematic implementation:

```
html
<h4 class="facet-title clickable">Collection</h4>
<div class="facet-values">
  <div class="facet-item">Bio one complete (10,700)</div>
  <div class="facet-item">CSIRO publishing (3)</div>
</div>
```

Recommended fix:

```
html
<h4 class="facet-title" id="collection-heading">
  <button aria-expanded="true" aria-controls="collection-options">
    Collection
    <span class="visually-hidden">Click to expand or collapse</span>
  </button>
</h4>
<div id="collection-options" class="facet-values">
  <div class="facet-item">
    <input type="checkbox" id="bioone-complete" name="collection" value="bioone-complete">
    <label for="bioone-complete">Bio one complete (10,700)</label>
  </div>
  <div class="facet-item">
    <input type="checkbox" id="csiro" name="collection" value="csiro">
```

```
    <label for="csiro">CSIRO publishing (3)</label>
  </div>
</div>
```

3. Missing Submenu State Information (4.1.2 Name, Role, Value)

Current problematic implementation:

```
html
<ul class="navigation">
  <li><a href="/browse">Browse</a>
    <ul class="submenu">
      <li><a href="/journals">Journals</a></li>
      <li><a href="/ebooks">eBooks</a></li>
    </ul>
  </li>
</ul>
```

Recommended fix:

```
html
<ul class="navigation">
  <li>
    <button aria-expanded="false" aria-controls="browse-submenu" class="nav-button">
      Browse
    </button>
    <ul id="browse-submenu" class="submenu" hidden>
```

```
      <li><a href="/journals">Journals</a></li>
      <li><a href="/ebooks">eBooks</a></li>
    </ul>
  </li>
</ul>
```

4. Advanced Search Dialog (4.1.3 Status Messages)

Current problematic implementation:

```
html
<div class="search-modal">
  <div class="search-form">
    <input type="text" placeholder="Enter keyword/phrases/author name/publication title">
    <select>
      <option>All Fields</option>
      <option>Abstract</option>
    </select>
    <!-- More form elements -->
  </div>
</div>
```

Recommended fix:

```
html
<div role="dialog" aria-labelledby="search-modal-title" class="search-modal">
  <h2 id="search-modal-title">Advanced Search</h2>
```

```
  <div class="search-form">
    <label for="keyword-input">Enter keyword, phrases, author name, or publication title</label>
    <input id="keyword-input" type="text">

    <label for="field-select">Select field to search in</label>
    <select id="field-select">
      <option>All Fields</option>
      <option>Abstract</option>
    </select>
    <!-- More properly labeled form elements -->
    <button type="button" aria-label="Close advanced search" class="close-button">Close</button>
  </div>
</div>
```

5. Insufficient Link Text (2.4.4 Link Purpose)

Current problematic implementation:

```
html
<div class="article">
  <h3>A New Generic Classification of Bignoniaceae</h3>
  <a href="/abstract/10.3417/2003187">Read Abstract</a>
  <a href="/pdf/10.3417/2003187">Download Paper</a>
</div>
```

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Recommended fix:

```
html
<div class="article">
  <h3 id="article-title-2003187">A New Generic Classification of Bignoniaceae</h3>
  <a href="/abstract/10.3417/2003187" aria-labelledby="article-title-2003187 abstract-action-2003187">
    <span id="abstract-action-2003187">Read Abstract</span>
  </a>
  <a href="/pdf/10.3417/2003187" aria-labelledby="article-title-2003187 download-action-2003187">
    <span id="download-action-2003187">Download Paper</span>
  </a>
</div>
```

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Final Thoughts and Recommendations

The Scopus platform demonstrates several strengths in its overall design and structure. The interface presents well-organized content with clear visual hierarchy and consistent navigation patterns across pages. The search functionality is comprehensive, offering powerful options for academic researchers. The platform shows evidence of some accessibility considerations in its implementation, including proper heading structure in many areas and descriptive link text for main navigation elements.

While our testing revealed accessibility challenges that would impact users with disabilities, many of these issues are addressable through targeted improvements. With appropriate remediation, the Scopus platform has the potential to become a valuable research tool for all users, including those with disabilities.

Recommended Fixes

- **Implement proper ARIA attributes and semantic HTML:** Enhance the existing structure by ensuring all interactive elements use correct HTML semantics and ARIA attributes to communicate their role, state, and properties properly.
- **Fix keyboard traps and focus management:** Build on the working keyboard functionality by ensuring that all dialogs and interactive components can be properly navigated with a keyboard and that focus is managed in a predictable way.
- **Implement live regions:** Add proper ARIA live regions to announce dynamic content updates, search results, and error messages to screen reader users to communicate search outcomes better.
- **Improve form labels and error handling:** Enhance the existing form structure by ensuring all fields have proper labels and that validation errors are programmatically associated with their fields and announced to screen readers.
- **Correct tab implementation:** Refine the tab components by implementing proper ARIA roles and attributes to ensure they can be navigated effectively with a keyboard and screen reader.
- **Test with real users:** Validate improvements by conducting testing with real users who have disabilities to ensure the platform works effectively with assistive technologies.

With these targeted improvements, the Scopus platform could provide an inclusive research experience for all users while maintaining its sophisticated functionality and comprehensive academic database.

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Disclaimer

Accessiblü prepared this report as a high-level accessibility evaluation of the Scopus platform. The evaluation utilized industry-standard testing methodologies, including screen reader testing (JAWS 2025), keyboard-only navigation, and manual inspection for select WCAG 2.2 AA success criteria.

This report does not represent a comprehensive WCAG compliance audit and should not be seen as a certification of accessibility compliance. While we have identified significant accessibility concerns and usability barriers, this evaluation was limited in scope and may not encompass all accessibility issues on the platform.

No Legal Liability:

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Limitations of Testing:

This evaluation was conducted at a specific time, and platform updates may have occurred after testing was completed. Additionally, while automated tools and expert reviews were utilized, real-world users with disabilities determine the true measure of accessibility.