

To: Robert Van Rennes, Big Ten Academic Alliance
From: Graham L. Pierce, MSU Usability/Accessibility Research and Consulting
Subject: Morgan & Claypool Synthesis High-Level Accessibility Evaluation
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MSU Usability/Accessibility Research and Consulting (MSU UARC) conducted a high-level accessibility evaluation of Morgan & Claypool's Synthesis collection to evaluate its conformance with WCAG 2.0 AA Criteria. This evaluation did not include all functionality or content of the site or all WCAG 2.0 AA Success Criteria.

During this evaluation, a number of issues were found that will make the site and its content difficult to use for many individuals with disabilities.

Keyboard users, including screen reader users and users with dexterity impairments, will have difficulty or be unable to use some site content. Most importantly, menu dropdowns cannot be opened via keyboard. Many interactive elements lack a sufficiently visible focus indicator, making it difficult or impossible for many keyboard-only users to effectively use them, as they cannot determine when they have reached the correct element. Focus order is also incorrect in many places, further increasing the difficulty of using the site with a keyboard.

Individuals with visual impairments, including those that rely on screen readers, will have additional problems. Structural information (including heading and list structure) is not appropriately conveyed to users, making it difficult to understand content organization. Tables are extensively relied upon for visual formatting of non-tabular content, creating a variety of potential problems. Some form inputs are not appropriately labeled, making those inputs difficult or impossible to use for those that rely on screen readers. Many images lack alternative text, significantly impacting users with visual impairments, and images of text are used in place of styled text, impacting users with visual impairments and users with reading and cognitive impairments.

Text in PDFs is not appropriately structured, making documents difficult to use and understand for individuals with visual or language impairments that rely on screen readers. Additionally, images in PDFs lack alternative text and PDFs do not have appropriate titles or languages provided to assistive technologies.

Other issues were found that will make it difficult for users with a variety of disabilities to effectively use the system, including insufficient color contrast, use of color alone to convey information and purpose, inconsistent link identification, no means to bypass repeated navigation on some pages, and inappropriate page titles.

To improve access for users with disabilities, UARC recommends a full WCAG 2.0 AA evaluation and that the problems discovered be remediated.

Note: For the purposes of this high-level review, search results for "cyber security" were used as an example of a Search Results page and "Security Basics for Computer Architects: Synthesis Lectures on Computer Architecture" (<https://doi.org/10.2200/S00512ED1V01Y201305CAC025>) was used as an example of a Publication page and PDF/PDF Plus document.

High-Level Findings

Document Structure

- Tables are incorrectly (and extremely extensively) used to structure non-tabular content throughout the site. [[WCAG 2.0 SC 1.3.1](#)]
- Headings are not correctly used to organize content on pages. [[WCAG 2.0 SC 1.3.1](#)]
 - On the Home page, all 60+ headings (the only exception being "Content, Structure, and Scope" [h3]) are incorrectly tagged. Some are tagged at the wrong heading level (e.g., h3 instead of h2) and some should not be tagged as headings at all (the text does not structure any content).
 - "Morgan & Claypool Publishers" (banner at top of all pages) should be tagged as a heading (h2)
 - On the Publication page, "Abstract", "M&C Computer Architecture", "Quick Links", and "Quick Search" should be tagged as headings (h2s)
- In PDFs, headings are not programmatically tagged. [[WCAG 2.0 SC 1.3.1](#)]
- In PDFs, random paragraphs are incorrectly tagged as lists. [[WCAG 2.0 SC 1.3.1](#)]
- Lists are not correctly used to organize content. [[WCAG 2.0 SC 1.3.1](#)]
 - On the Home page, the list under "Series and Editors" should be coded into a programmatic list
 - On the Synthesis Series page, the list under "Synthesis Series" should be coded into a programmatic list
- The language of PDFs is not defined. [[WCAG 2.0 SC 3.1.1](#)]

Keyboard Support

- Navigation dropdown menus (e.g., "Subject Areas", "Recent & Forthcoming Titles", etc. under "Colloquium") cannot be made visible via keyboard. [[WCAG 2.0 SC 2.1.1](#)]
- Keyboard focus inappropriately goes to navigation dropdown menus when they are not visible. [[WCAG 2.0 SC 2.4.3](#)]
- Focus incorrectly goes to non-interactive content containers (e.g., entire page container on Home page, container around search results on Search Results page). [[WCAG 2.0 SC 2.4.3](#)]
- On the Search Results page, changing any search filter (e.g., "Order results") unexpectedly resets focus to the beginning of the page. [[WCAG 2.0 SC 2.4.3](#)]
- On the Advanced Search page, selecting "Simple Search" unexpectedly resets focus to the beginning of the page. [[WCAG 2.0 SC 2.4.3](#)]
- Focus is not sufficiently visible for some interactive content. [[WCAG 2.0 SC 2.4.7](#)]
 - Navigation dropdown menu items
 - "CrossRef Member" image link
 - "All series" dropdown
 - Book covers on Home page
 - Checkboxes and dropdowns on Search Results and Publication pages
 - Tabs and dropdowns on Advanced Search page

Navigation

- Pages do not have appropriately descriptive titles (the site name ["Morgan & Claypool"] is not included). [[WCAG 2.0 SC 2.4.2](#)]

- The title of the Synthesis Series page is incorrectly declared as "Home". [[WCAG 2.0 SC 2.4.2](#)]
- PDFs lack descriptive titles (while a programmatic title exists in the PDF Plus version, the document is not set to display/use it). [[WCAG 2.0 SC 2.4.2](#)]
- On the Search Results and Publication pages, some links are not underlined, despite underline being used for all other text links throughout the site. [[WCAG 2.0 SC 3.2.4](#)]
- On the Home and Publication pages, no means to bypass repeated navigation exists (no h1 at the start of unique page content and no "Skip to Main" link provided). [[WCAG 2.0 SC 2.4.1](#)]

Forms and Data Submission

- On the Search Results page, radio buttons, checkboxes, and dropdowns are not programmatically labeled. [[WCAG 2.0 SC 3.3.2](#)]
- On the Advanced Search page, text inputs, "Time Frame" dropdowns, and the "Series" select box are not programmatically labeled. [[WCAG 2.0 SC 3.3.2](#)]
- On the Advanced Search page, radio buttons not programmatically associated with grouping labels. [[WCAG 2.0 SC 3.3.2](#)]

Images

- Appropriate alternative text is not provided for images on pages. [[WCAG 2.0 SC 1.1.1](#)]
 - "CrossRef Member" and "Atypon" images in page footer
 - On the Home page, "Synthesis Digital Library of Engineering and Computer Science" image
 - On the Publication page, "M&C Computer Architecture" and "XML" images
- Images in PDFs lack alternative text. [[WCAG 2.0 SC 1.1.1](#)]
- "Go" (search button) is an image of text. [[WCAG 2.0 SC 1.4.5](#)]
- On the Search Results, Publication, and Advanced Search pages, "Search" and "Save" buttons are images of text. [[WCAG 2.0 SC 1.4.5](#)]
- On the Publication page, "XML" is an image of text. [[WCAG 2.0 SC 1.4.5](#)]

Color and Visual Characteristics

- White text on orange background ("XML" on Publication page) has insufficient contrast. [[WCAG 2.0 SC 1.4.3](#)]
- On the Search Results and Publication pages, color alone is used to indicate link text (e.g., "Abstract", "PDF", etc.). [[WCAG 2.0 SC 1.4.1](#)]
- On the Search Results page, color alone is used to show search term highlighting (light grey vs. white background). [[WCAG 2.0 SC 1.4.1](#)]

Disclaimer: This high-level evaluation was conducted for the Big Ten Academic Alliance, and represents a good faith effort conducted within a limited time frame. It should not be assumed to be complete or free from error. No warranties or guarantees are implied. UARC is not responsible for direct, indirect, or incidental damages based on this work; its use or interpretation by any individual, group, or organization; or on conditions beyond our control.