Acrolinx: a Controlled-Language Checker Turned into an Accessibility Evaluation Tool for Image Text Alternatives

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Abstract

Producing appropriate text alternatives for images in the web is a widely extended accessibility recommendation which, if successfully implemented, facilitates an enhanced web experience for all users, particularly for the visually impaired. Typically, most web accessibility evaluation tools can detect the presence or absence of an alt attribute within the element in a web page. Nevertheless, they rarely perform a deeper linguistic analysis of its content. In the present paper, we introduce Acrolinx, a state-of-the-art controlled-language checker for which we have developed an accessibility-oriented rule set for French, specifically designed to help content authors automatically verify the appropriateness of text alternatives for images.

Reference


DOI : 10.1145/2745555.2746676
Acrolinx: a Controlled-Language Checker Turned into an Accessibility Evaluation Tool for Image Text Alternatives

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ABSTRACT
Producing appropriate text alternatives for images in the web is a widely extended accessibility recommendation which, if successfully implemented, facilitates an enhanced web experience for all users, particularly for the visually impaired. Typically, most web accessibility evaluation tools can detect the presence or absence of an alt attribute within the <img> element in a web page. Nevertheless, they rarely perform a deeper linguistic analysis of its content. In the present paper, we introduce Acrolinx, a state-of-the-art controlled-language checker for which we have developed an accessibility-oriented rule set for French, specifically designed to help content authors automatically verify the appropriateness of text alternatives for images.

Categories and Subject Descriptors

General Terms
Documentation, Design, Languages, Verification.

Keywords
Image text alternatives, appropriateness, controlled-language (CL) rules, accessibility evaluation.

1. INTRODUCTION AND BACKGROUND
According to the W3C [8], text alternatives are a primary way of making visual information in the web accessible because they can be rendered through any sensory modality (visual, auditory or tactile) to match the needs of any user. Text equivalents for images are introduced through the alt attribute. However, the presence of the latter does not necessarily imply the existence of an informative text alternative.

A study of the literature indicates that considerable efforts have been devoted to define best practices for image description [4,7]. Still, lack of time and training on the matter among web developers and content authors might explain why images continue to pose an important accessibility barrier [1,3]. Additionally, while industry and academia have worked on automated solutions to validate image accessibility, most evaluation tools only detect the presence or absence of an alt attribute –which often results in a higher number of false positives– and fail to report style, syntax and terminology adequateness.1

2. ACROLINX
In this paper, Acrolinx is presented as a convenient evaluation and guidance tool featuring a robust linguistic component that can complement other automated evaluation procedures during image accessibility verification.

2.1 Overview of the Tool
Acrolinx is a state-of-the-art language software initially designed for content quality assessment, which integrates with most leading authoring tools. It enables users to render textual content more findable, readable and consistent by checking it against spelling, grammar, terminology and a predefined set of style rules.2

2.2 Development of Style Rules
For the present work, linguistic patterns frequently used in appropriate and non-appropriate text alternatives for images representing descriptive, functional and uninformative content have been obtained through (i) a comprehensive review of existing guidelines found in the literature on how to create high-quality text alternatives and (ii) a detailed analysis of a Swiss web corpus [1]. It comprised 52 websites, accounting for approximately 2,000 pages, with more than 10,000 images, almost 8,000 of which had a unique text alternative (see footnote 1). We then developed a set of 40 accessibility-oriented style rules for French based on the results of the aforementioned data analysis, following an error description formalism [2]. The working environment for the rule development was the Acrolinx Linguistic IDE, which runs on the open-source platform Eclipse.

2.3 Document Checking
One Acrolinx client for webpage verification is the Acrolinx Batch Checker (see Figure 1), which allows the user to check both online websites and locally stored XML and HTML files in batch mode. After the document analysis, the user is provided with a

1 For a more in-depth description of our work, including a more complete literature review and rule development methodology explanation, please refer to our previous research [5].

2 A comprehensive description of the commercially distributed product can be found at www.acrolinx.com.
detailed report for each of the webpages checked, including a summary of the style rules that have been contravened and the errors flagged during the check, together with their associated rule. For some rules, an improvement suggestion is proposed (see Table 1).

Table 1. Rule examples and French improvement suggestions

<table>
<thead>
<tr>
<th>Alt Text</th>
<th>Suggestion</th>
</tr>
</thead>
<tbody>
<tr>
<td>RSS</td>
<td>S’abonner aux flux RSS</td>
</tr>
<tr>
<td>Accueil</td>
<td>Page d'accueil de/du/de la [propriétaire du site internet]</td>
</tr>
</tbody>
</table>

Users can also check the rule documentation directly from the report, where rules are classified according to the type of image content (functional, descriptive or uninformative). Each rule help file includes (i) a general introduction to image accessibility and useful links on the subject, (ii) a thorough explanation of the problem detected and (iii) illustrative examples of appropriate and non-appropriate text alternatives related to the rule violated.

3. CONCLUSION AND FUTURE WORK
Most web accessibility evaluation tools primarily target web developers, hence focusing more on covering other technical accessibility aspects than on offering comprehensive linguistic guidelines for content evaluation. In this paper, we have presented Acrolinx, a controlled-language software which can promisingly bridge this gap. Acrolinx was evaluated and compared against aDesigner in terms of tool effectiveness regarding image accessibility assessment within the framework of a large experimental study with web localization professionals. Preliminary findings suggest that the tool facilitates text alternatives’ quality improvement and provides easy to understand suggestions and recommendations [6]. Finally, it is worth mentioning that we customized Acrolinx IQ Batch Checker to exclusively verify the image alt content, but its potential could be further explored to check other attribute values or the main body of a webpage against other accessibility-tailored style rule packages.

4. REFERENCES

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3 http://www.eclipse.org/actf/downloads/tools/aDesigner/