WCAG 2.1 CLASSIFIER: A MACHINE LEARNING APPROACH TO IMPROVE DIGITAL ACCESSIBILITY OF SOCIAL NETWORKING SITES FOR USERS WITH SOCIAL MEDIA ANXIETY

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Abstract

Past studies have proven that the use of Social Networking Sites (SNS) has a direct association with elevated anxiety levels in its users. The digital accessibility barriers in SNSs lead to the development of social media anxiety in its users. Software developers are reluctant to conform to accessibility standards due to the complexity of accessibility manuals such as WCAG 2.1. Therefore, this research project proposes a solution that classifies the WCAG 2.1 guidelines according to the disability type.

This classifier identifies all the WCAG 2.1 criteria relevant to social media anxiety. Classifying the guidelines according to the disability type helps developers save time during their products' development process. Moreover, the proposed solution allows users to filter the guidelines according to the four principles of accessibility (perceivable, operable, understandable, and robust), priority level (A, AA, and AAA), cost estimation to implement and UI element affected by the guideline.

The implementation provides a novel machine learning system to classify the WCAG 2.1 criteria with high accuracy and performance. Future enhancements of the system would be to include more disability types and support other versions of WCAG. Finally, this research project contributes a conceptual framework that has compiled all the accessibility criteria relevant to social media anxiety, which were identified through an intensive requirement elicitation process.

Keywords:

Digital Accessibility, Social Networking Sites, Social Media Anxiety, WCAG 2.1

Subject Descriptors:

Accessibility Systems and Tools, Natural Language Processing, Bayesian network models, Rule learning, Support Vector Machines