

# Factorial



# Fynn Becker

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- Frontend developer at Factorial
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“

# Accessibility Has Failed: Try Generative UI = Individualized UX



Jakob Nielsen  
Website usability guru

Fundamentally flawed

# “I think Nielsen needs to think again”



**Léonie Watson**

W3C Board of Directors

“Nielsen apparently doesn’t realise that generative AI barely understands accessibility, never mind how to make accessible experiences for humans.”



**Eric Bailey**

Inclusive design advocate and developer

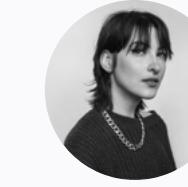
“Thinking AI will ‘solve’ accessibility is a bad frame stemming from a technoableist mindset. The industry seems to me hoping for a magic, binary solution [...].”



**Hidde de Vries**

Freelance accessibility specialist

“Because nuance, understanding and conveying intent are inherent to accessibility, LLMs cannot be of great help with the accessibility of [...] code.”



**Kristina Gushcheva-Keippilä**

Head of Design at BeeHealthy

“I find his interpretation of the impact of accessibility as a movement [...] to be both dismissive and contradictory.”

Accessibility is *not* a tech problem

**Factorial**

or

Accessibility is the intersection of user experience and interface design, frontend and backend development, content management systems, and *human beings*.



**Example**

Alternative text is contextual



### Hochbahn

- Newest train type
- Sleek and modern design

### Tourism

- Scenic public transport route
- Harbor easily reachable

### History

- Historic harbor buildings
- Historic rail bridges

### Weather

- Always nice in Hamburg 😎

# Who is responsible?

## The issue

- Designers and developers have little influence
- Ultimately CMS editors write alternative text

## What we can provide

- Guidelines for writing alternative text
- Alert on missing alternative text
- Mandatory alternative text

Jake Archibald

# Writing great alt text: Emotion matters

HTTP 203  
HTTP 203 is a blog about web development, mostly focused on accessibility and user experience. It's written by Jake Archibald, a developer at Google.

jakearchibald.com/2021/great-alt-text/

Jake Archibald wrote...

## Writing great alt text: Emotion matters

Posted 04 August 2021

If you prefer videos to articles, there's [an episode of HTTP 203 on this topic](#). Ok, on with the article...

```

```

Good alt text means that screen reader users get the same 'meaning' from the page as a fully sighted user. But sometimes that's easier said than done.

I recently got stuck trying to figure out the right alt text for a particular speaker image on a conference website:



Jake Archibald

This was part of a list of speakers for a particular talk. I couldn't decide what the alt text should be, so I did the lazy thing and outsourced my problem to Twitter [in the form of a poll](#), and here are the results:

- 37.8% "Jake Archibald hiding behind a plant"
- 33.0% "" (empty alt)
- 15.4% "Jake Archibald"
- 13.8% "Avatar"

The results weren't exactly definitive, especially as I was trying to decide between the top two anyway. So, what should it be?

### Context matters

Take this image:



# Alternative text guidelines for images

## § 4.8.4.4 Requirements for providing text to act as an alternative for images

### § 4.8.4.4.1 General guidelines

Except where otherwise specified, the `alt` attribute must be specified and its value must not be empty; the value must be an appropriate replacement for the image. The specific requirements for the `alt` attribute depend on what the image is intended to represent, as described in the following sections.

The most general rule to consider when writing alternative text is the following: **the intent is that replacing every image with the text of its `alt` attribute does not change the meaning of the page.**

So, in general, alternative text can be written by considering what one would have written had one not been able to include the image.

A corollary to this is that the `alt` attribute's value should never contain text that could be considered the image's *caption*, *title*, or *legend*. It is supposed to contain replacement text that could be used by users *instead of* the image; it is not meant to supplement the image. The `title` attribute can be used for supplemental information.

Another corollary is that the `alt` attribute's value should not repeat information that is already provided in the prose next to the image.

#### Note

One way to think of alternative text is to think about how you would read the page containing the image to someone over the phone, without mentioning that there is an image present. Whatever you say instead of the image is typically a good start for writing the alternative text.

## § 4.8.4.4.2 A link or button containing nothing but the image

When an `a` element that creates a [hyperlink](#), or a `button` element, has no textual content but contains one or more images, the `alt` attributes must contain text that together convey the purpose of the link or button.

#### Example

In this example, a user is asked to pick their preferred color from a list of three. Each color is given by an image, but for users who have configured their user agent not to display images, the color names are used instead:

```
<h1>Pick your color</h1>
<ul>
  <li><a href="green.html"></a></li>
  <li><a href="blue.html"></a></li>
  <li><a href="red.html"></a></li>
</ul>
```

#### Example

In this example, each button has a set of images to indicate the kind of color output desired by the user. The first image is used in each case to give the alternative text.

```
<button name="rgb"></button>
<button name="cmyk"></button>
```

Since each image represents one part of the text, it could also be written like this:

```
<button name="rgb"></button>
<button name="cmyk"></button>
```

However, with other alternative text, this might not work, and putting all the alternative text into one image in each case might make more sense:

```
<button name="rgb"></button>
<button name="cmyk"></button>
```



**Example**

What is a popover?

Modal dialog

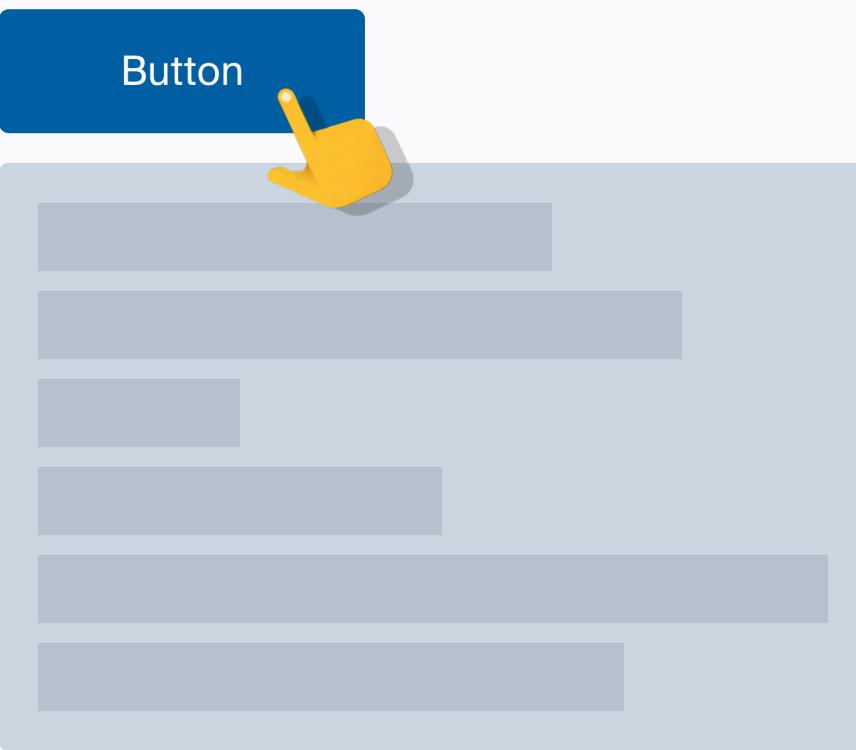
Combobox

Application menu

Alert

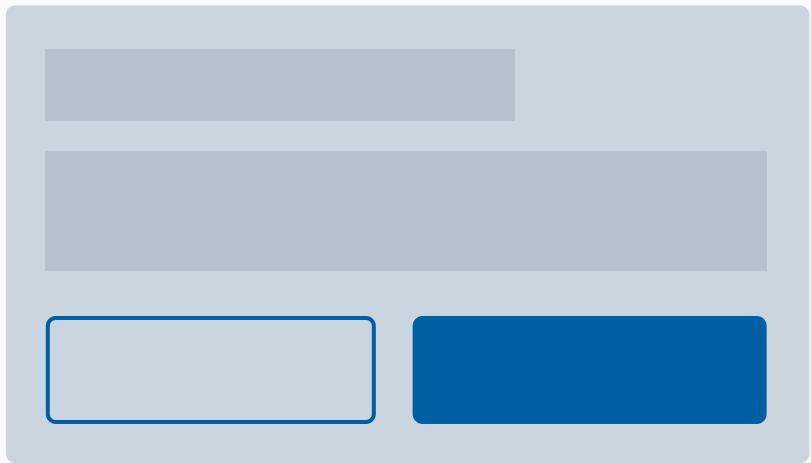
Tooltip

Disclosure



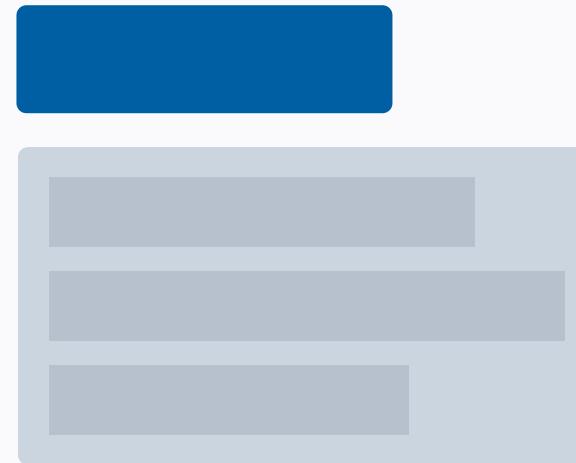
# Expectations

## Modal dialog



- Demands attention
- Traps focus
- Has accessible name
- Closes on Escape

## Disclosure



- Expanded state is conveyed
- Enter/Space toggle visibility
- Optional support for Arrow keys and Home/End
- Closes on Escape

# ARIA Authoring Practices Guide: Patterns

[w3.org/WAI/ARIA/apg/patterns/](https://www.w3.org/WAI/ARIA/apg/patterns/)

ARIA Authoring Practices Guide (APG) | How to build accessibility semantics into web patterns and widgets W3C® Web Accessibility Initiative — WAI

APG Home Patterns Practices Index About

## Patterns


**Read This First**

No ARIA is better than Bad ARIA. Before using any ARIA, [read this to understand why.](#)

<div style="border: 1px solid #ccc; padding: 10px; margin-bottom: 10px;">  <b>Accordion (Sections With Show/Hide Functionality)</b> <p>An accordion is a vertically stacked set of interactive headings that each contain a title, content snippet, or thumbnail representing a section of content.</p> </div>	<div style="border: 1px solid #ccc; padding: 10px; margin-bottom: 10px;">  <b>Alert</b> <p>An alert is an element that displays a brief, important message in a way that attracts the user's attention without interrupting the user's task.</p> </div>	<div style="border: 1px solid #ccc; padding: 10px; margin-bottom: 10px;">  <b>Alert and Message Dialogs</b> <p>An alert dialog is a modal dialog that interrupts the user's workflow to communicate an important message and acquire a response.</p> </div>
<div style="border: 1px solid #ccc; padding: 10px; margin-bottom: 10px;">  <b>Breadcrumb</b> <p>A breadcrumb trail consists of a list of links to the parent pages of the current page in hierarchical order.</p> </div>	<div style="border: 1px solid #ccc; padding: 10px; margin-bottom: 10px;">  <b>Button</b> <p>A button is a widget that enables users to trigger an action or event, such as submitting a form, opening a dialog, canceling an action, or performing a delete operation.</p> </div>	<div style="border: 1px solid #ccc; padding: 10px; margin-bottom: 10px;">  <b>Carousel (Slide Show or Image Rotator)</b> <p>A carousel presents a set of items, referred to as slides, by sequentially displaying a subset of one or more slides.</p> </div>
<div style="border: 1px solid #ccc; padding: 10px; margin-bottom: 10px;">  <b>Checkbox</b> <p>WAI-ARIA supports two types of checkbox widgets: dual-state checkboxes toggle between two choices -- checked and not checked -- and tri-state checkboxes, which allow an additional third state known as partially checked.</p> </div>	<div style="border: 1px solid #ccc; padding: 10px; margin-bottom: 10px;">  <b>Combobox</b> <p>A combobox is an input widget that has an associated popup.</p> </div>	<div style="border: 1px solid #ccc; padding: 10px; margin-bottom: 10px;">  <b>Dialog (Modal)</b> <p>A dialog is a window overlaid on either the primary window or another dialog window.</p> </div>
<div style="border: 1px solid #ccc; padding: 10px; margin-bottom: 10px;">  <b>Disclosure (Show/Hide)</b> <p>A disclosure is a widget that enables content</p> </div>	<div style="border: 1px solid #ccc; padding: 10px; margin-bottom: 10px;">  <b>Feed</b> <p>A feed is a section of a page that</p> </div>	<div style="border: 1px solid #ccc; padding: 10px; margin-bottom: 10px;">  <b>Grid (Interactive Tabular Data and Layout Containers)</b> <p>A grid widget is a container that enables</p> </div>

# WCAG Understanding Docs

w3.org/WAI/WCAG22/Understanding/

The screenshot shows the WCAG 2.2 Understanding Docs page. At the top, there's a header with the title "WCAG 2.2 Understanding Docs" and a sub-header "Informative explanations, not required to meet WCAG". Below the header, there's a navigation bar with a link to "All Understanding Docs". The main content area is titled "All WCAG 2.2 Understanding Docs". It includes a "Summary" section with a brief description of what understanding documents are. To the right, there's a sidebar titled "Page Contents" with links to "Perceivable", "Operable", "Understandable", "Robust", and "Other Understanding Documents". The main content area is divided into several sections: "Perceivable", "Time-based Media", "Adaptable", and "Distinguishable", each containing a list of sub-sections.

**WCAG 2.2 Understanding Docs** | *Informative explanations, not required to meet WCAG*

All Understanding Docs

**All WCAG 2.2 Understanding Docs**

**Summary**

*Understanding documents provide detailed explanations for Web Content Accessibility Guidelines (WCAG) guidelines and success criteria. They are informative, not part of the "normative" WCAG standard. For information, see [About WCAG Understanding Documents](#).*

**Page Contents**

- Perceivable
- Operable
- Understandable
- Robust
- Other Understanding Documents

**Perceivable**

**1.1 Text Alternatives**

- [1.1.1 Non-text Content](#)

**1.2 Time-based Media**

- [1.2.1 Audio-only and Video-only \(Prerecorded\)](#)
- [1.2.2 Captions \(Prerecorded\)](#)
- [1.2.3 Audio Description or Media Alternative \(Prerecorded\)](#)
- [1.2.4 Captions \(Live\)](#)
- [1.2.5 Audio Description \(Prerecorded\)](#)
- [1.2.6 Sign Language \(Prerecorded\)](#)
- [1.2.7 Extended Audio Description \(Prerecorded\)](#)
- [1.2.8 Media Alternative \(Prerecorded\)](#)
- [1.2.9 Audio-only \(Live\)](#)

**1.3 Adaptable**

- [1.3.1 Info and Relationships](#)
- [1.3.2 Meaningful Sequence](#)
- [1.3.3 Sensory Characteristics](#)
- [1.3.4 Orientation](#)
- [1.3.5 Identify Input Purpose](#)
- [1.3.6 Identify Purpose](#)

**1.4 Distinguishable**

- [1.4.1 Use of Color](#)
- [1.4.2 Audio Control](#)
- [1.4.3 Contrast \(Minimum\)](#)
- [1.4.4 Resize Text](#)
- [1.4.5 Images of Text](#)
- [1.4.6 Contrast \(Enhanced\)](#)
- [1.4.7 Low or No Background Audio](#)
- [1.4.8 Visual Presentation](#)
- [1.4.9 Images of Text \(No Exception\)](#)



**Don't be a Jakob Nielsen**

Approach accessibility as a holistic issue  
that can't be solved solely with tech

# Thank you!

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**Talk slides**

[fynn.be/talks/accessibility-is-not-a-tech-problem](https://fynn.be/talks/accessibility-is-not-a-tech-problem)

