carey estes design

Axe DevTools

UX & Feature Enhancement

Project Brief

What is the Axe DevTools plugin?

The Axe DevTools plugin is a powerful tool designed to enhance web accessibility by enabling developers, designers, and testers to easily identify and fix accessibility issues directly within their workflow. Developed by Deque Systems, this plugin integrates seamlessly with web browsers, offering comprehensive accessibility checks against the Web Content Accessibility Guidelines (WCAG), Section 508, EN 301 549, and others.

The Good

The entry point for the user is easy and straightforward, and the overall UX is an improvement compared to other accessibility testing tools. There are also useful features for focused testing, saving and sharing audits, and links to documentation.

The Bad

However, there are significant drawbacks regarding the UI design, visual hierarchy, copywriting, and easy user paths to solutions.

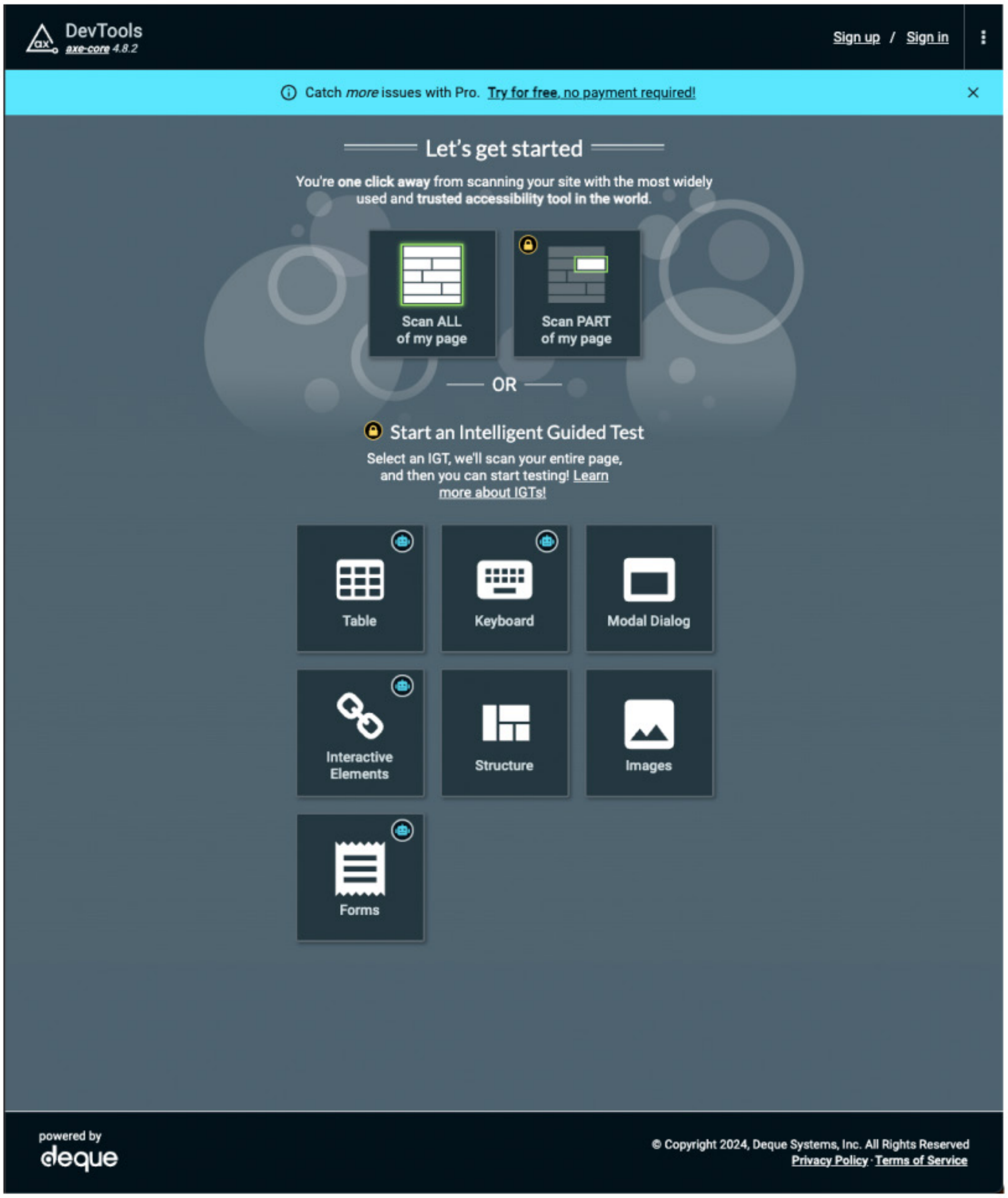
1. **Weak visual hierarchy**
   The color theory and visual language does not help prioritize the important elements in the report, along with an overabundance of visual clutter. The predominantly monochromatic palette and heavy use of number values to represent data blends the page information together. The interactive elements on the page are laid out sporadically and not in proximity to related functionality or data points.

2. **Poorly constructed solutions**
   The tool targets and isolates the offending line or lines of code, but falls short of providing good solutions. The solutions are often obtuse and not written as code, but pulled from nebulous documentation, making simple solutions often sound overly complicated. The tool relies on the user to have extensive accessibility knowledge to make good decisions on how to resolve the issue.

3. **Off-site Documentation**
   The description of the issue in the tool is often confusing. Axe attempts to solve this by linking to Axe documentation, which takes the user out of the tool by opening a new tab, which disrupts the workflow. The user never fully grasps the real impact of the issue, which makes implementing the solution feel more like tedium, rather than a true experience improvement.

4. **Lack of real user support**
   Accurate accessibility testing and review requires real users to confirm the accessibility feature is behaving as expected. Automated scanning can only check a fraction of the overall user experience. The tool, in its current state, does not give the user confidence the issue is truly resolved, because solutions are based on automated scanning and not proper manual user testing.

The following illustrates the current UI, user workflow, and breaks down these issues.



Catch *more* issues with Pro. Try for free, no payment required!

Let's get started

You're **one click away** from scanning your site with the most widely used and **trusted accessibility tool in the world.**

Start an Intelligent Guided Test

Select an IGT, we'll scan your entire page, and then you can start testing! Learn more about IGTs!

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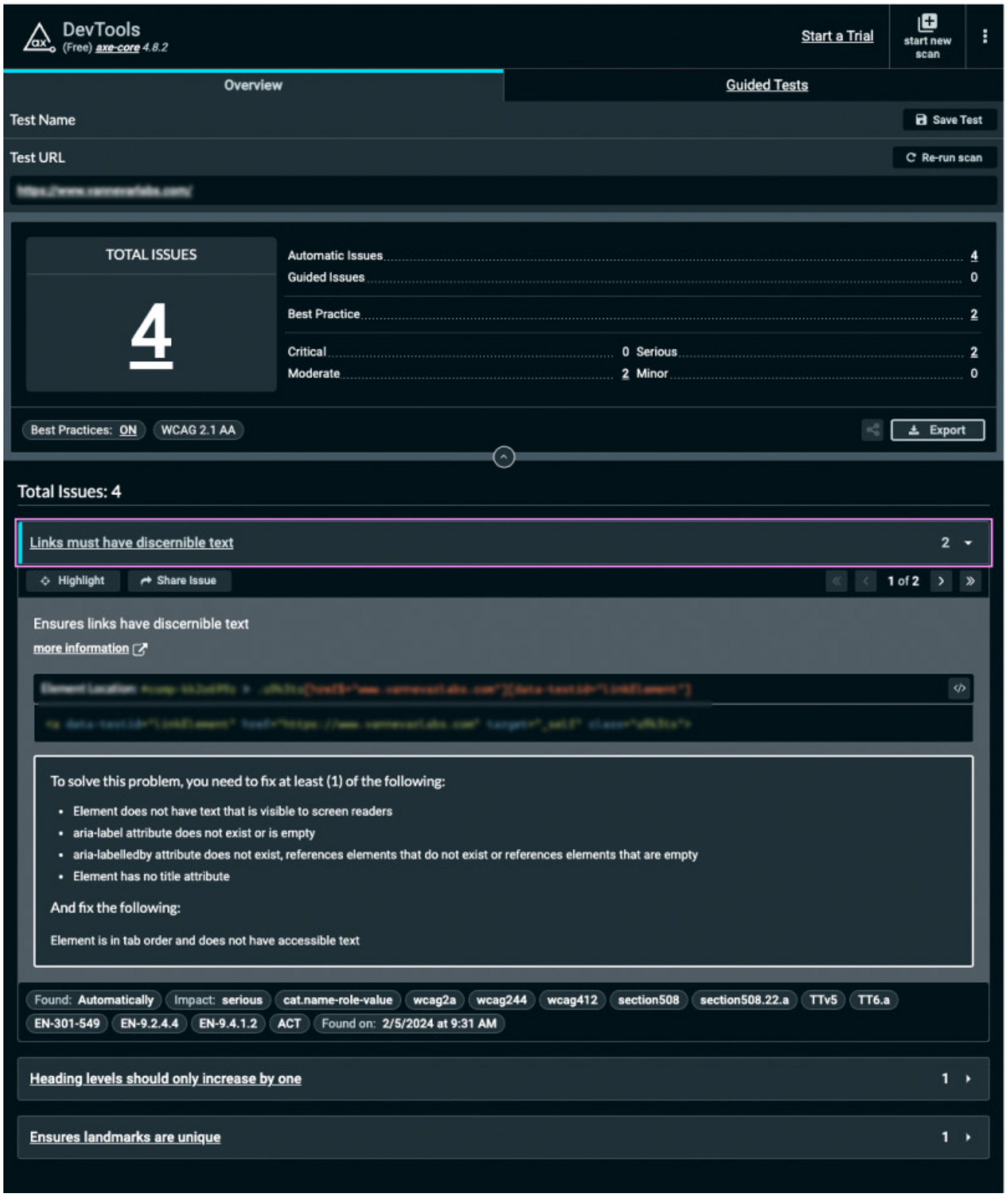
ISSUES

- Excessive visual clutter and copy
- Nebulous iconography
- Predominantly monochromatic color palette



Test Name

Test URL

[redacted]

TOTAL ISSUES

4

Automatic Issues 4
Guided Issues 0
Best Practice 2
Critical .... 0 Serious 2
Moderate .... 2 Minor 0

Best Practices: ON | WCAG 2.1 AA

Total Issues: 4

Links must have discernible text 2

Ensures links have discernible text

[redacted]

To solve this problem, you need to fix at least (1) of the following:

- Element does not have text that is visible to screen readers
- aria-label attribute does not exist or is empty
- aria-labelledby attribute does not exist, references elements that do not exist or references elements that are empty
- Element has no title attribute

And fix the following:

Element is in tab order and does not have accessible text

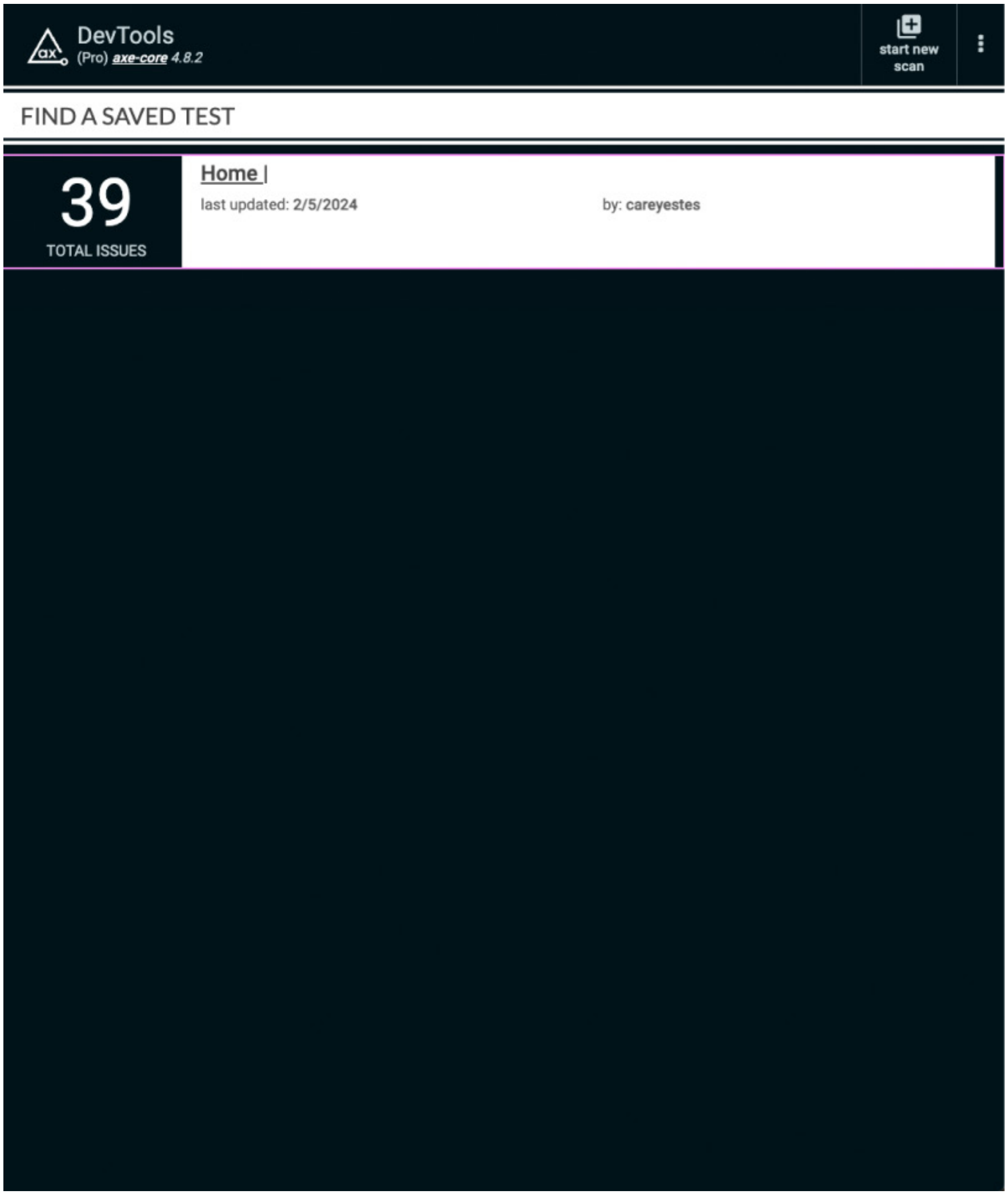
Found: Automatically | Impact: serious | cat.name-role-value | wcag2a | wcag244 | wcag412 | section508 | section508.22.a | TTv5 | TT6.a | EN-301-549 | EN-9.2.4.4 | EN-9.4.1.2 | ACT | Found on: 2/5/2024 at 9:31 AM

Heading levels should only increase by one 1

Ensures landmarks are unique 1

ISSUES

- Poorly placed interactive elements
- Heavy use of number counts over-complicates the page
- Useful functionality hidden under collapsed row
- Interactive and non-interactive elements follow the same or similar visual patterns
- Exact solution for the issue is not clear
- Ineffective use of space



DevTools
(Pro) axe-core 4.8.2

FIND A SAVED TEST

39
TOTAL ISSUES

Home |
last updated: 2/5/2024
by: careyestes

ISSUES

- Stark contrast in certain sections make the page hard to read.
- Information is poorly organized and placed
- Design is uninspired and lacks any branding influences or identity

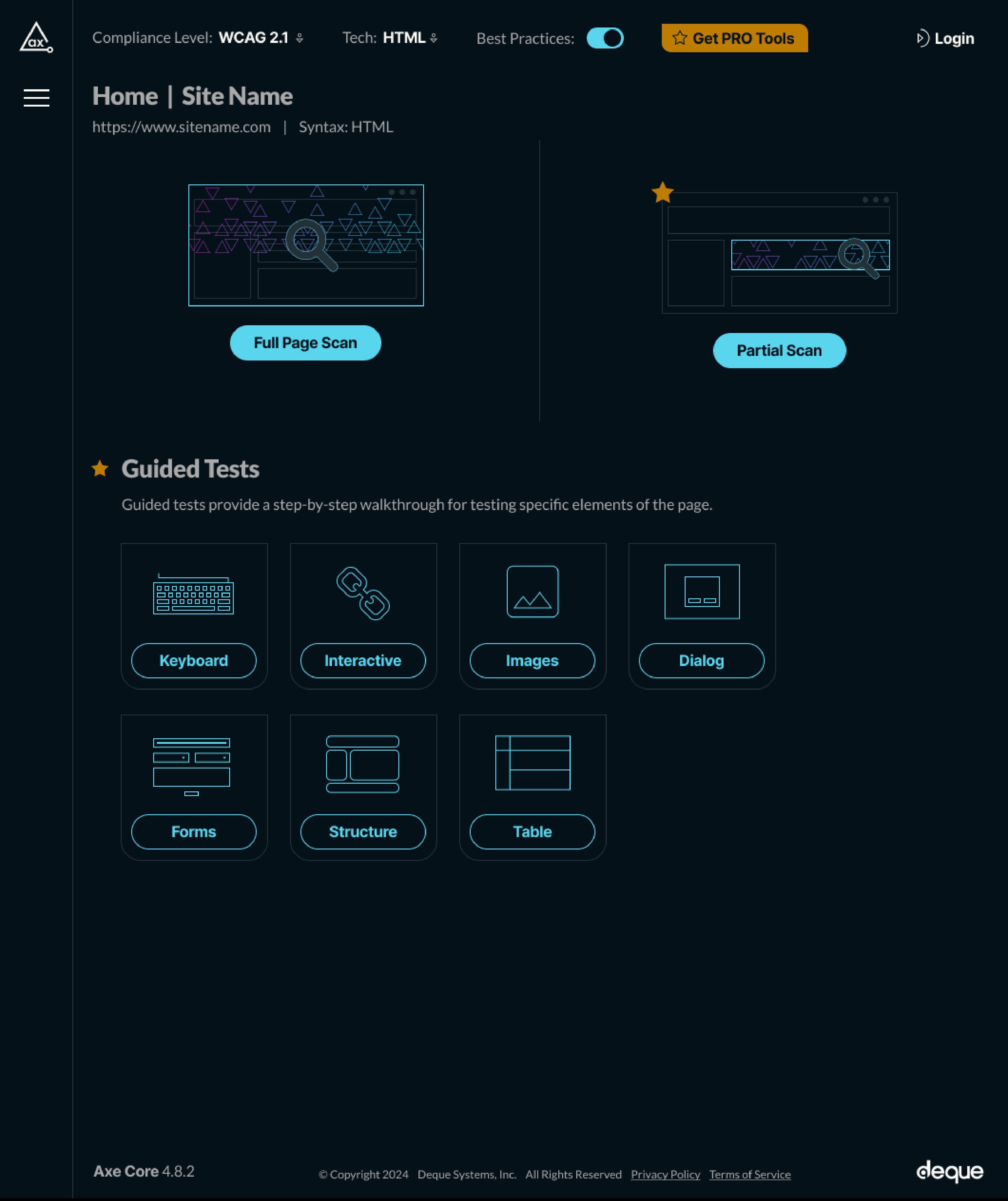
The Solution

This brief proposes UX enhancements that address the aforementioned deficiencies, which will elevate the tool far beyond its current capabilities and empower its users to learn and improve their products.

UX & Feature Enhancements

1. **Improve the UI**
The new UI establishes a well-defined, energetic color palette with improved, consistent, intuitive visual patterns. It incorporates visual diagrams and font scales to punch up the important data points. The functional mechanics and information are restructured logically on the page making the tool more intuitive and clear.
2. **Deliver easier solutions through a Large Language Model (LLM)**
This new feature integrates an accessibility-focused language model into the solution section. The issue description, DOM code, and all contextual information is sent to the model and a response is generated, giving the user a detailed, specific solution to apply to their code. A feedback system will be integrated to improve the learning model, to provide consistently better answers through continued use. If the technology stack is recognized locally, the component file will be identified and the solution will be applied directly to the file in the designated IDE.
3. **Add supplemental educational material in the tool**
We will produce high-quality video reproductions of each issue, just as the end-user would encounter it in the application, and link to those videos inside the tool. This will help educate the user and reinforce the importance of resolving these issues. We will also improve the copy descriptions of issues, emphasizing the altruistic purpose of making the improvement.
4. **Integrate live testing**
A major deficit in accessibility testing is easy access to reliable human testers to confirm accessibility issues are resolved and no regressions were introduced. This ground-breaking feature will connect to a live tester directly, allowing them to view, share, and control screens to properly test and provide feedback directly to the user. The user can choose from a pre-set of technology and disability scenarios, so the tool connects to the appropriate tester, and a feedback system will be put in place to help rank and vet testers.

The following illustrates the improved UX and feature enhancements.



Compliance Level: **WCAG 2.1** Tech: **HTML** Best Practices: ● Get PRO Tools Login

Home | Site Name

https://www.sitename.com | Syntax: HTML

Guided Tests

Guided tests provide a step-by-step walkthrough for testing specific elements of the page.

Axe Core 4.8.2

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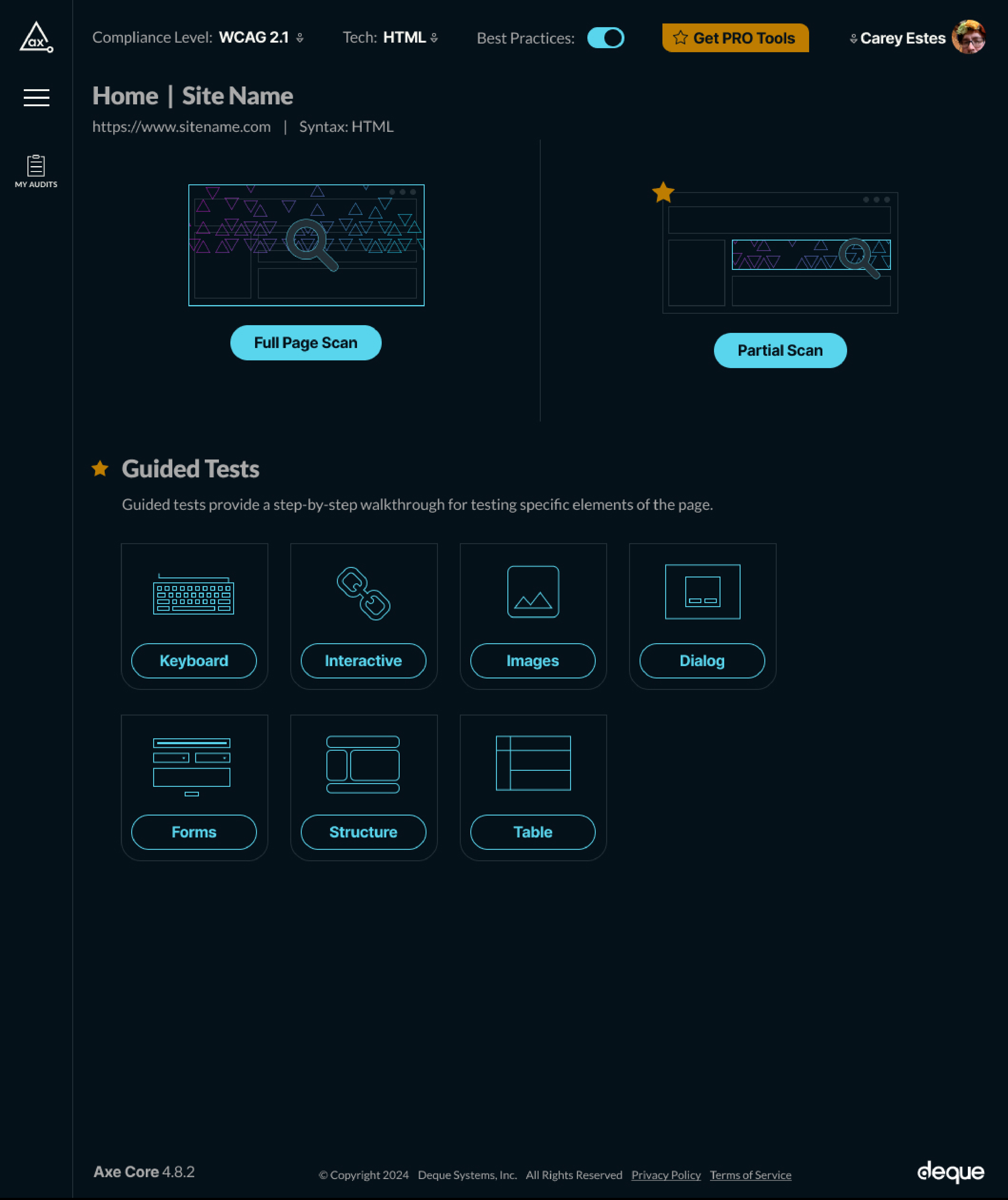

Compliance Level: **WCAG 2.1**   Tech: **HTML**   Best Practices: ●

Home | Site Name

https://www.sitename.com | Syntax: HTML

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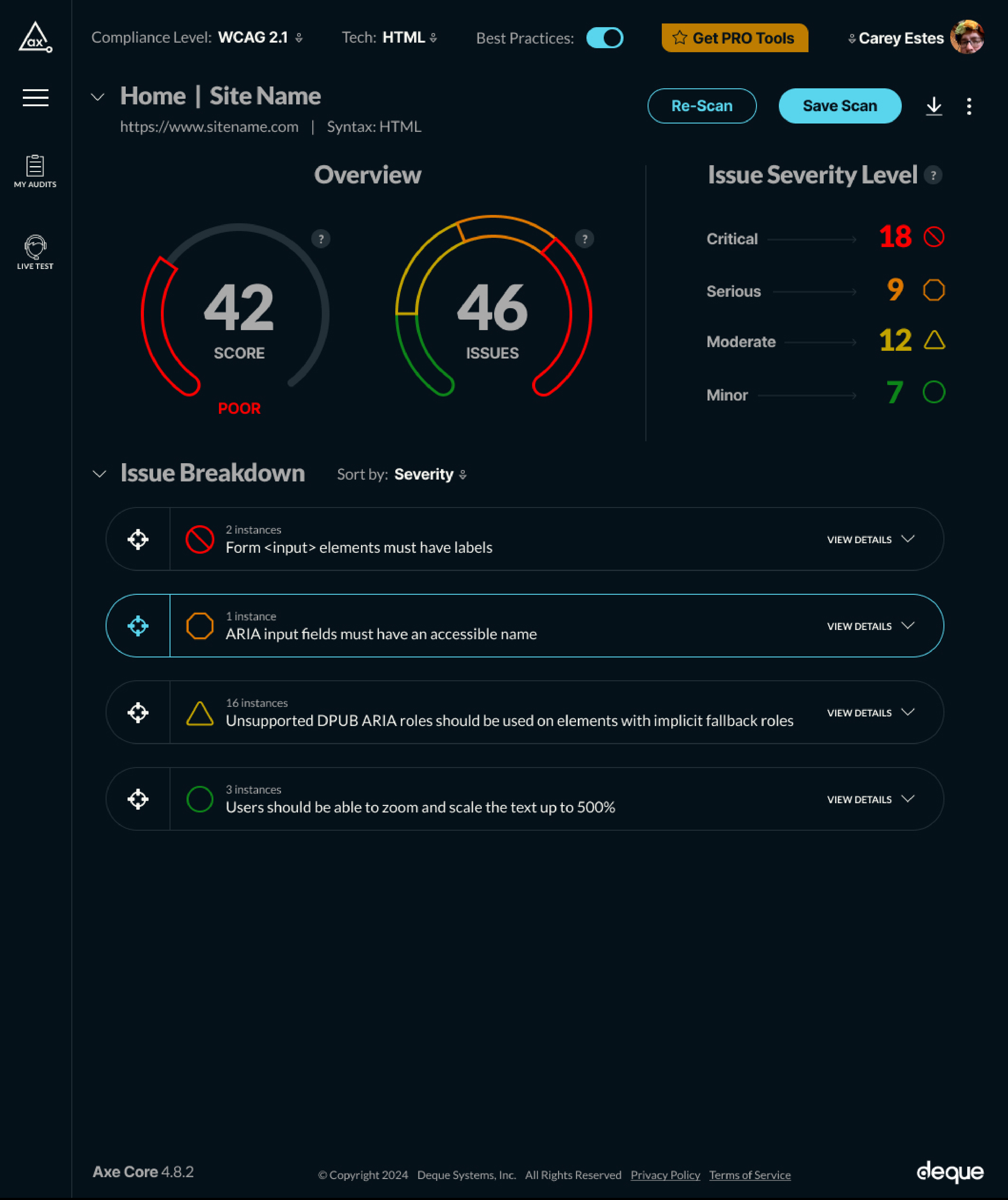

Compliance Level: **WCAG 2.1** Tech: **HTML** Best Practices: ● Carey Estes

Home | Site Name

https://www.sitename.com | Syntax: HTML

Overview

42 SCORE POOR

46 ISSUES

Issue Severity Level

Critical	18 ⃠
Serious	9 ⬡
Moderate	12 △
Minor	7 ○

Issue Breakdown

Sort by: **Severity**

- ⃠ 2 instances
  Form <input> elements must have labels
- ⬡ 1 instance
  ARIA input fields must have an accessible name
- △ 16 instances
  Unsupported DPUB ARIA roles should be used on elements with implicit fallback roles
- ○ 3 instances
  Users should be able to zoom and scale the text up to 500%

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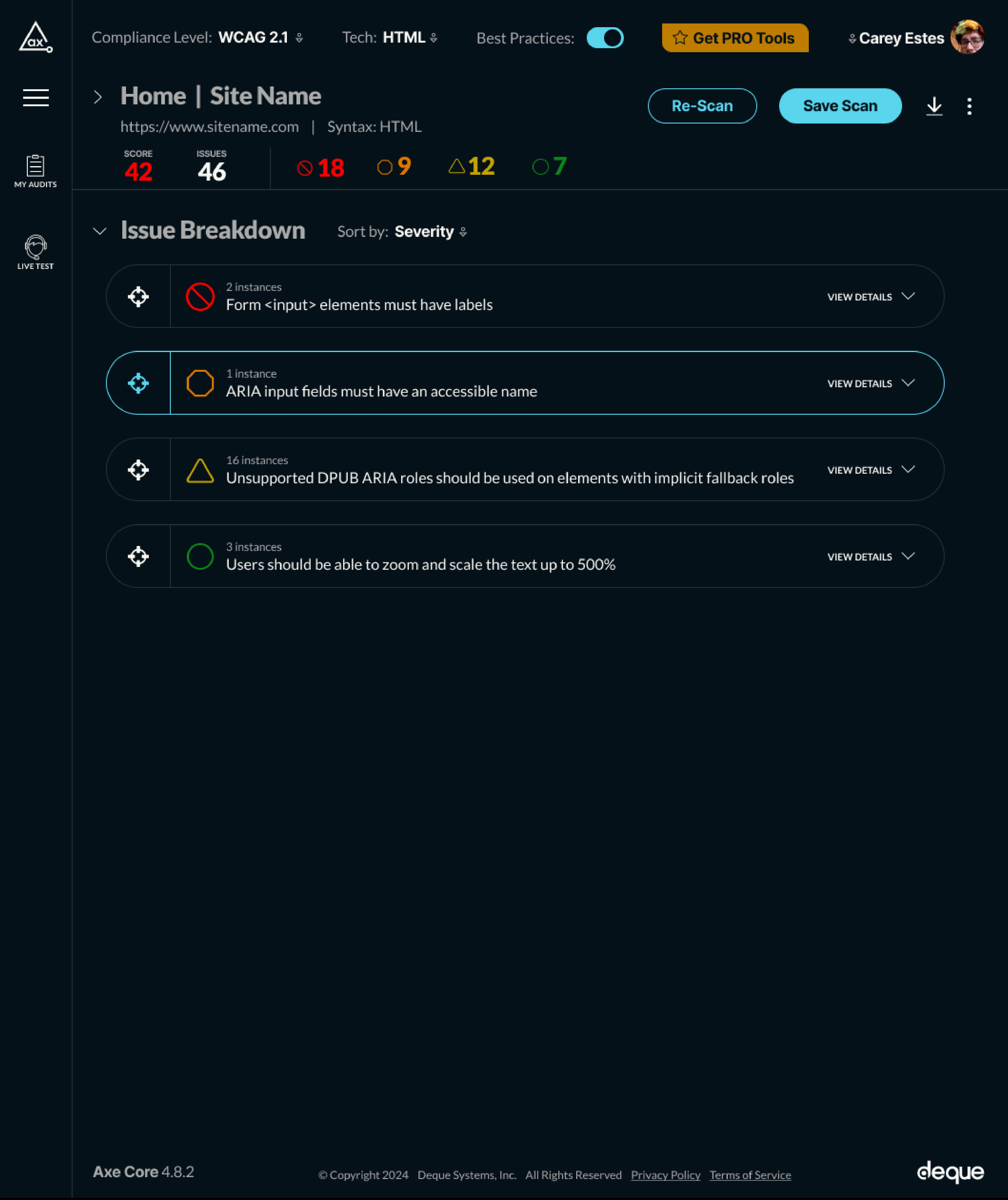

Compliance Level: **WCAG 2.1**   Tech: **HTML**   Best Practices: ●

Home | Site Name

https://www.sitename.com | Syntax: HTML

SCORE	ISSUES				
42	46	⃠ 18	⯃ 9	△ 12	○ 7

Issue Breakdown

Sort by: **Severity**

- ⃠ 2 instances Form <input> elements must have labels VIEW DETAILS
- ⯃ 1 instance — ARIA input fields must have an accessible name — VIEW DETAILS
- △ 16 instances — Unsupported DPUB ARIA roles should be used on elements with implicit fallback roles — VIEW DETAILS
- ○ 3 instances — Users should be able to zoom and scale the text up to 500% — VIEW DETAILS

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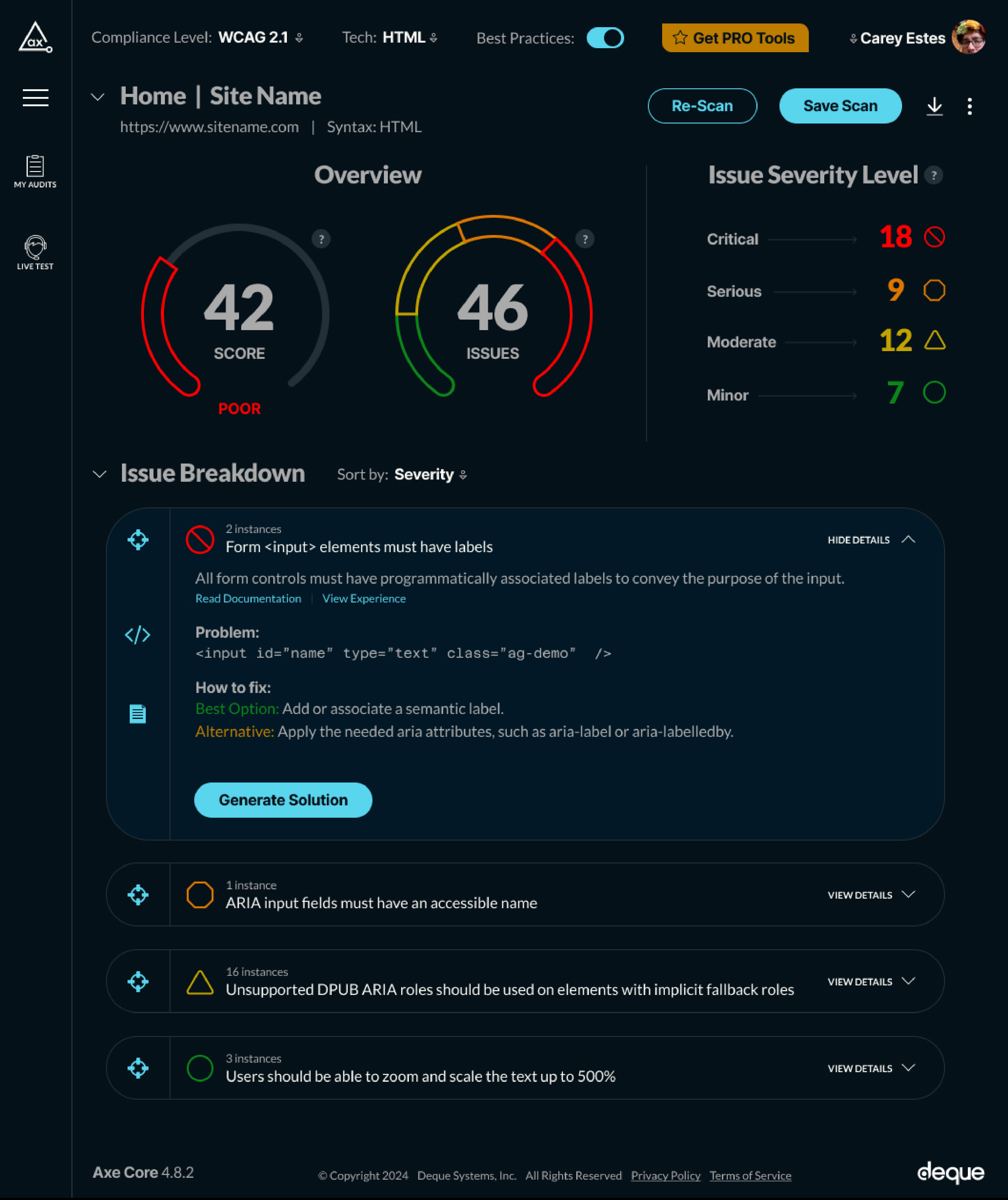

Compliance Level: **WCAG 2.1** Tech: **HTML** Best Practices: ●

Get PRO Tools **Carey Estes**

Home | Site Name

https://www.sitename.com | Syntax: HTML

Re-Scan Save Scan

Overview

Issue Severity Level ?

Critical	18
Serious	9
Moderate	12
Minor	7

Issue Breakdown

Sort by: **Severity**

2 instances
Form <input> elements must have labels
HIDE DETAILS

All form controls must have programmatically associated labels to convey the purpose of the input.
Read Documentation | View Experience

Problem:

```
<input id="name" type="text" class="ag-demo"  />
```

How to fix:

Best Option: Add or associate a semantic label.

Alternative: Apply the needed aria attributes, such as aria-label or aria-labelledby.

Generate Solution

1 instance
ARIA input fields must have an accessible name
VIEW DETAILS

16 instances
Unsupported DPUB ARIA roles should be used on elements with implicit fallback roles
VIEW DETAILS

3 instances
Users should be able to zoom and scale the text up to 500%
VIEW DETAILS

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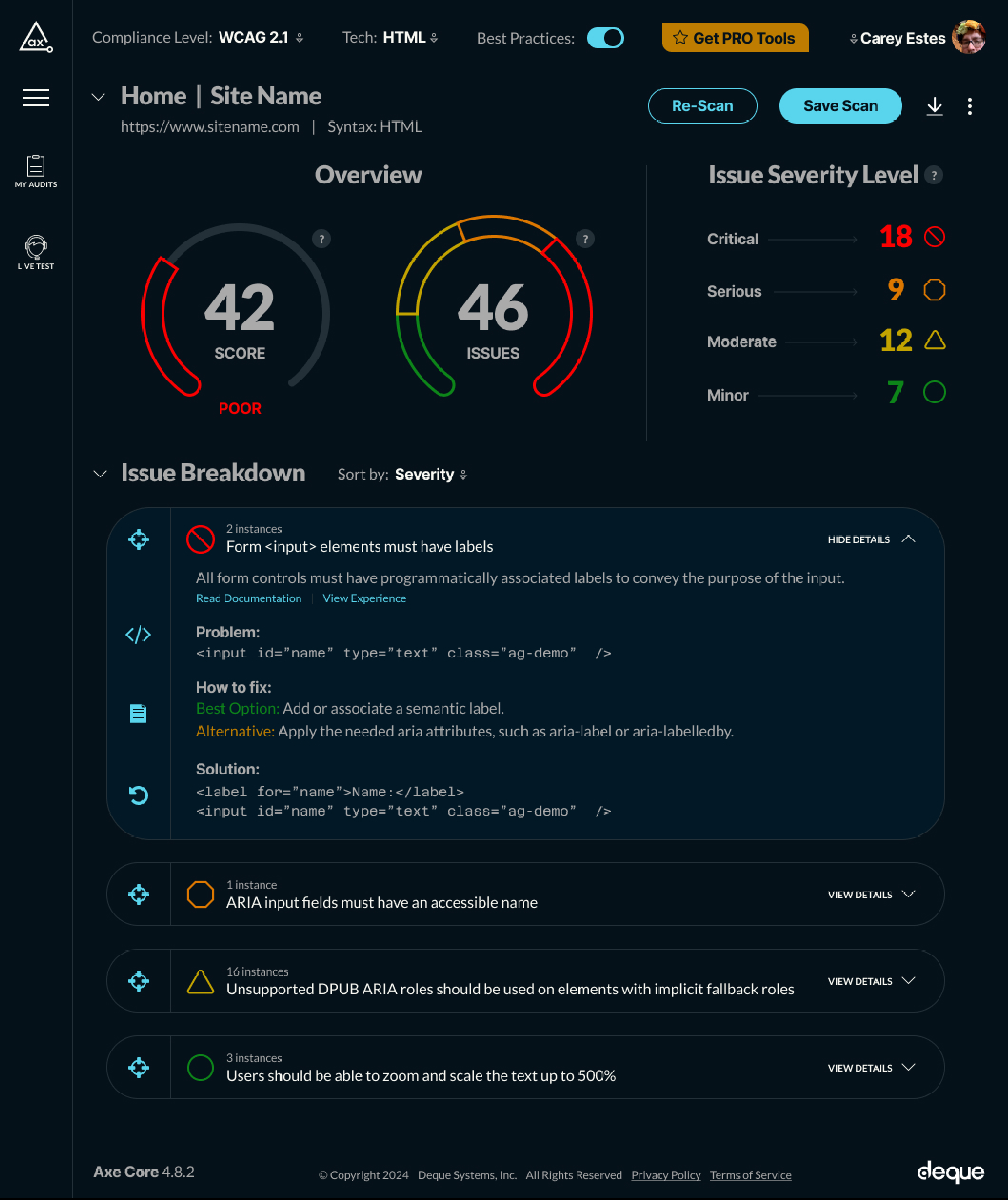

Compliance Level: **WCAG 2.1** Tech: **HTML** Best Practices: ● Get PRO Tools Carey Estes

Home | Site Name

https://www.sitename.com | Syntax: HTML

Re-Scan Save Scan

Overview

42 SCORE POOR

46 ISSUES

Issue Severity Level ?

Critical	18	⃠
Serious	9	⬡
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Issue Breakdown

Sort by: **Severity**

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```
<input id="name" type="text" class="ag-demo"  />
```

How to fix:
Best Option: Add or associate a semantic label.
Alternative: Apply the needed aria attributes, such as aria-label or aria-labelledby.

Solution:

```
<label for="name">Name:</label>
<input id="name" type="text" class="ag-demo"  />
```

1 instance
ARIA input fields must have an accessible name
VIEW DETAILS

16 instances
Unsupported DPUB ARIA roles should be used on elements with implicit fallback roles
VIEW DETAILS

3 instances
Users should be able to zoom and scale the text up to 500%
VIEW DETAILS

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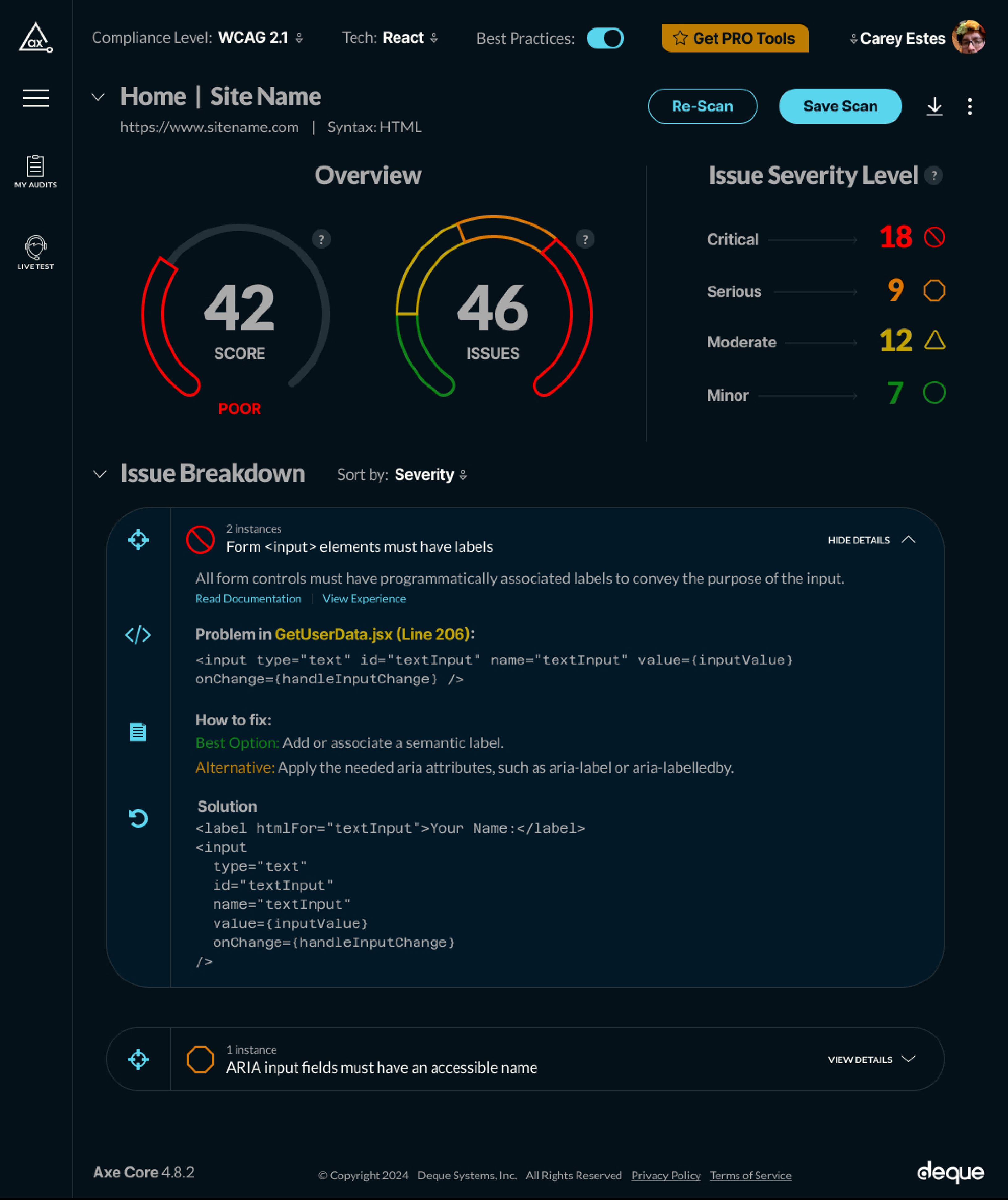

Compliance Level: **WCAG 2.1**   Tech: **React**   Best Practices: ●

Home | Site Name

https://www.sitename.com | Syntax: HTML

Overview

42 SCORE POOR

46 ISSUES

Issue Severity Level

Critical	18
Serious	9
Moderate	12
Minor	7

Issue Breakdown

Sort by: **Severity**

2 instances

Form <input> elements must have labels

All form controls must have programmatically associated labels to convey the purpose of the input.

Read Documentation | View Experience

Problem in GetUserData.jsx (Line 206):

```
<input type="text" id="textInput" name="textInput" value={inputValue}
onChange={handleInputChange} />
```

How to fix:

Best Option: Add or associate a semantic label.

Alternative: Apply the needed aria attributes, such as aria-label or aria-labelledby.

Solution

```
<label htmlFor="textInput">Your Name:</label>
<input
  type="text"
  id="textInput"
  name="textInput"
  value={inputValue}
  onChange={handleInputChange}
/>
```

1 instance

ARIA input fields must have an accessible name

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Compliance Level: **WCAG 2.1** Tech: **HTML** Best Practices: Get PRO Tools Carey Estes

Home | Site Name

https://www.sitename.com | Syntax: HTML

Re-Scan Save Scan

MY AUDITS

LIVE TEST

Overview

42 SCORE

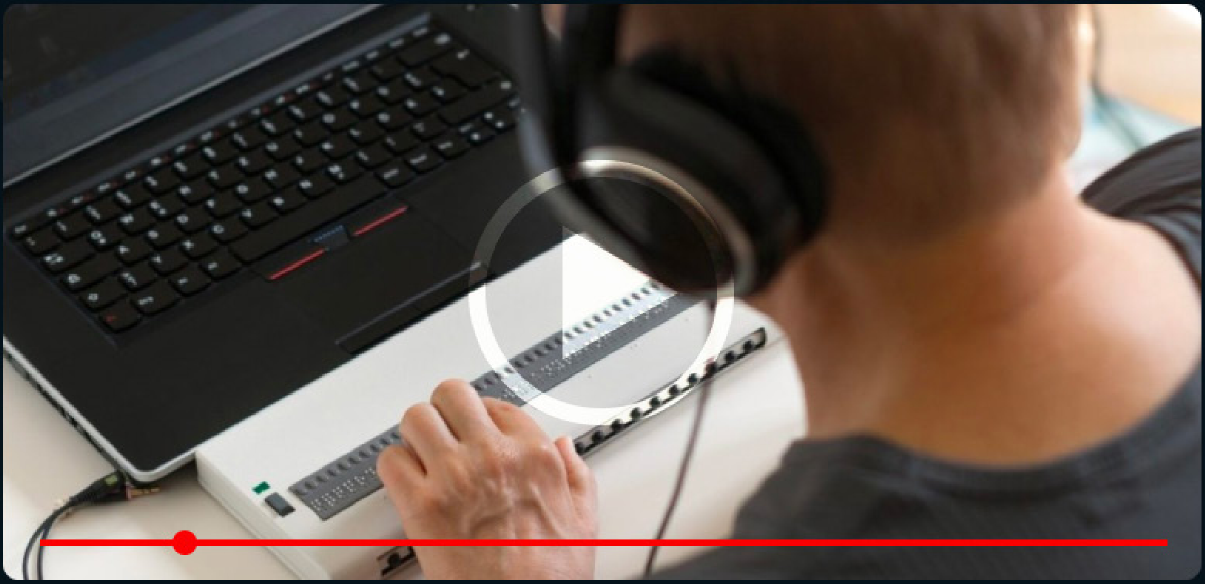
POOR

46 ISSUES

Issue Severity Level

Critical	18
Serious	9
Moderate	12
Minor	7

Form <input> elements must have labels



View Transcript

1 instance
ARIA input fields must have an accessible name
VIEW DETAILS

16 instances
Unsupported DPUB ARIA roles should be used on elements with implicit fallback roles
VIEW DETAILS

3 instances
Users should be able to zoom and scale the text up to 500%
VIEW DETAILS

Axe Core 4.8.2

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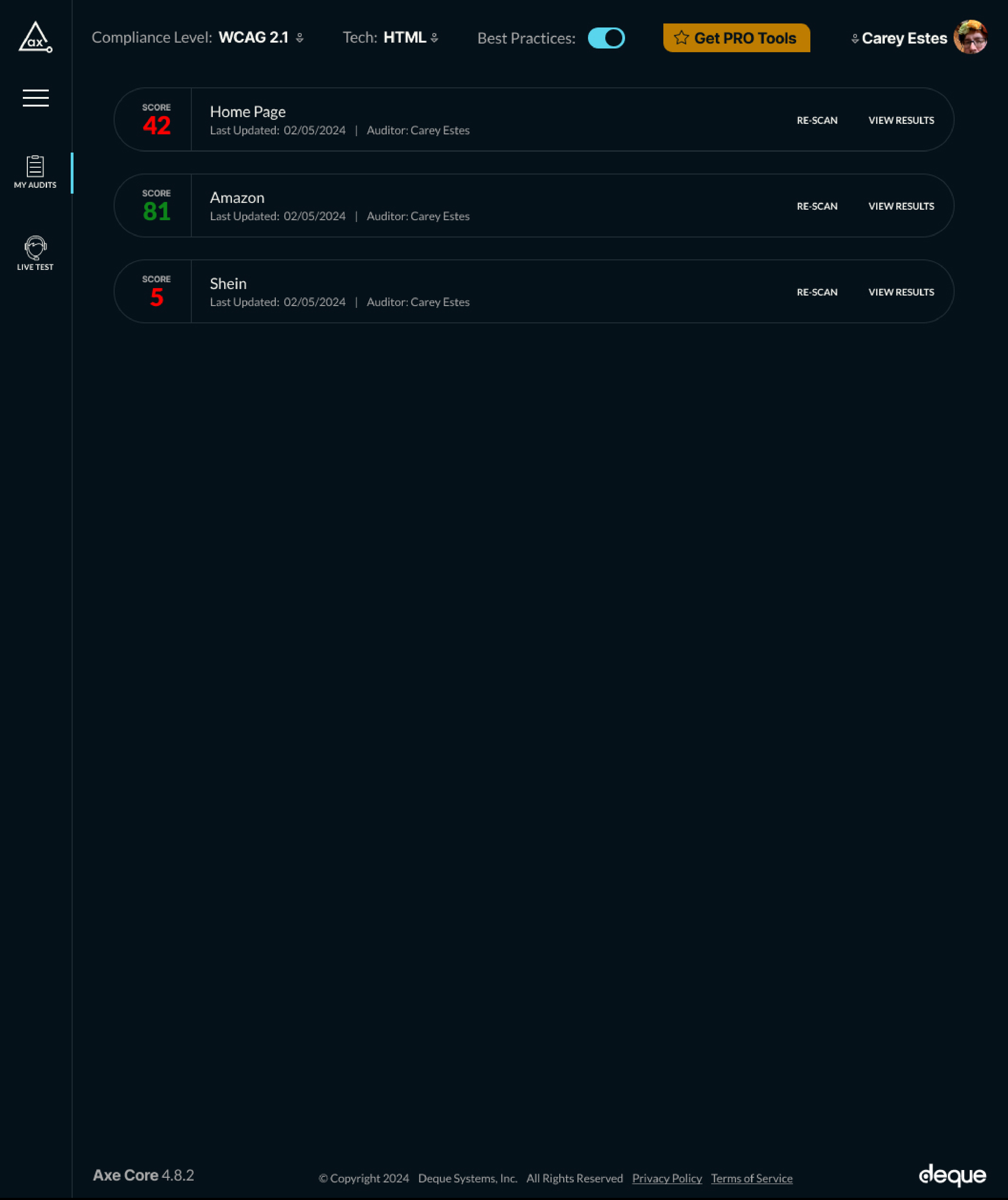

Compliance Level: **WCAG 2.1** Tech: **HTML** Best Practices: ● **Get PRO Tools** **Carey Estes**

SCORE **42** | Home Page
Last Updated: 02/05/2024 | Auditor: Carey Estes
RE-SCAN VIEW RESULTS

SCORE **81** | Amazon
Last Updated: 02/05/2024 | Auditor: Carey Estes
RE-SCAN VIEW RESULTS

SCORE **5** | Shein
Last Updated: 02/05/2024 | Auditor: Carey Estes
RE-SCAN VIEW RESULTS

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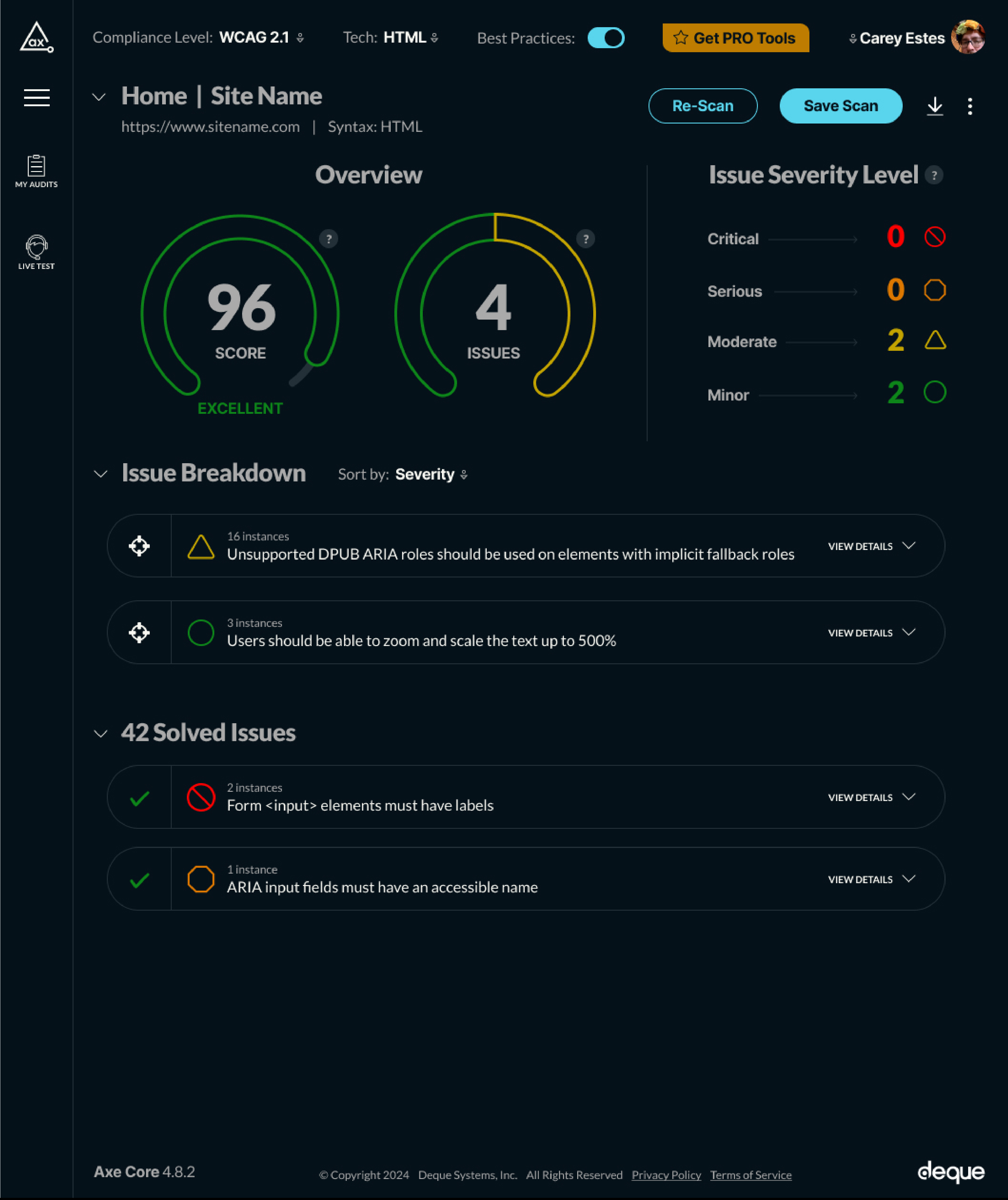

Compliance Level: **WCAG 2.1** Tech: **HTML** Best Practices: ●

Home | Site Name

https://www.sitename.com | Syntax: HTML

Overview

96 SCORE EXCELLENT

4 ISSUES

Issue Severity Level

Critical	0
Serious	0
Moderate	2
Minor	2

Issue Breakdown

Sort by: **Severity**

16 instances
Unsupported DPUB ARIA roles should be used on elements with implicit fallback roles VIEW DETAILS

3 instances
Users should be able to zoom and scale the text up to 500% VIEW DETAILS

42 Solved Issues

✓ 2 instances
Form <input> elements must have labels VIEW DETAILS

✓ 1 instance
ARIA input fields must have an accessible name VIEW DETAILS

Axe Core 4.8.2

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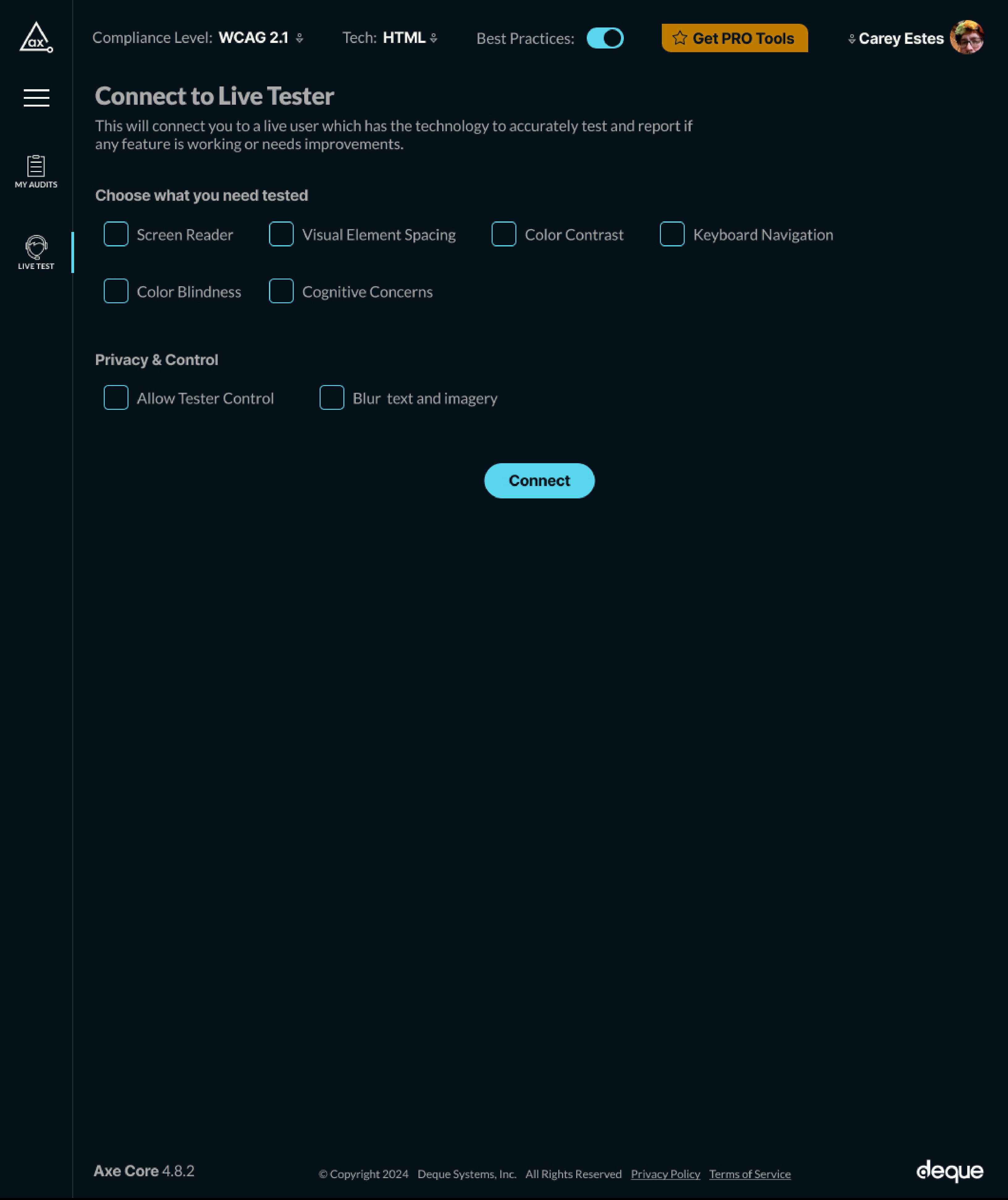

Connect to Live Tester

This will connect you to a live user which has the technology to accurately test and report if any feature is working or needs improvements.

Choose what you need tested

□ Screen Reader □ Visual Element Spacing □ Color Contrast □ Keyboard Navigation

□ Color Blindness □ Cognitive Concerns

Privacy & Control

□ Allow Tester Control □ Blur text and imagery

Axe Core 4.8.2

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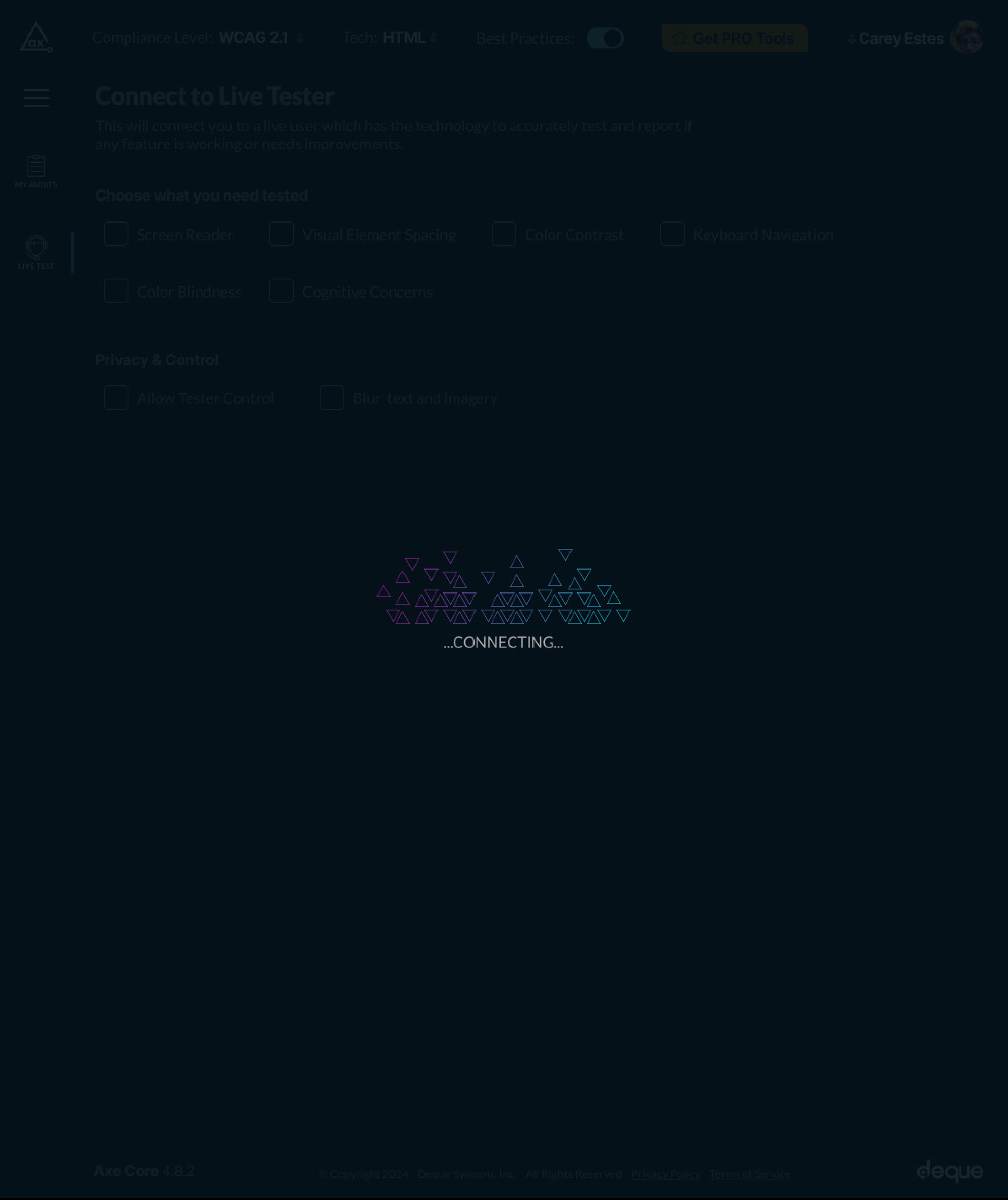

Compliance Level: **WCAG 2.1** Tech: **HTML** Best Practices: ●

Connect to Live Tester

This will connect you to a live user which has the technology to accurately test and report if any feature is working or needs improvements.

Choose what you need tested

□ Screen Reader □ Visual Element Spacing □ Color Contrast □ Keyboard Navigation

□ Color Blindness □ Cognitive Concerns

Privacy & Control

□ Allow Tester Control □ Blur text and imagery

...CONNECTING...

Axe Core 4.8.2

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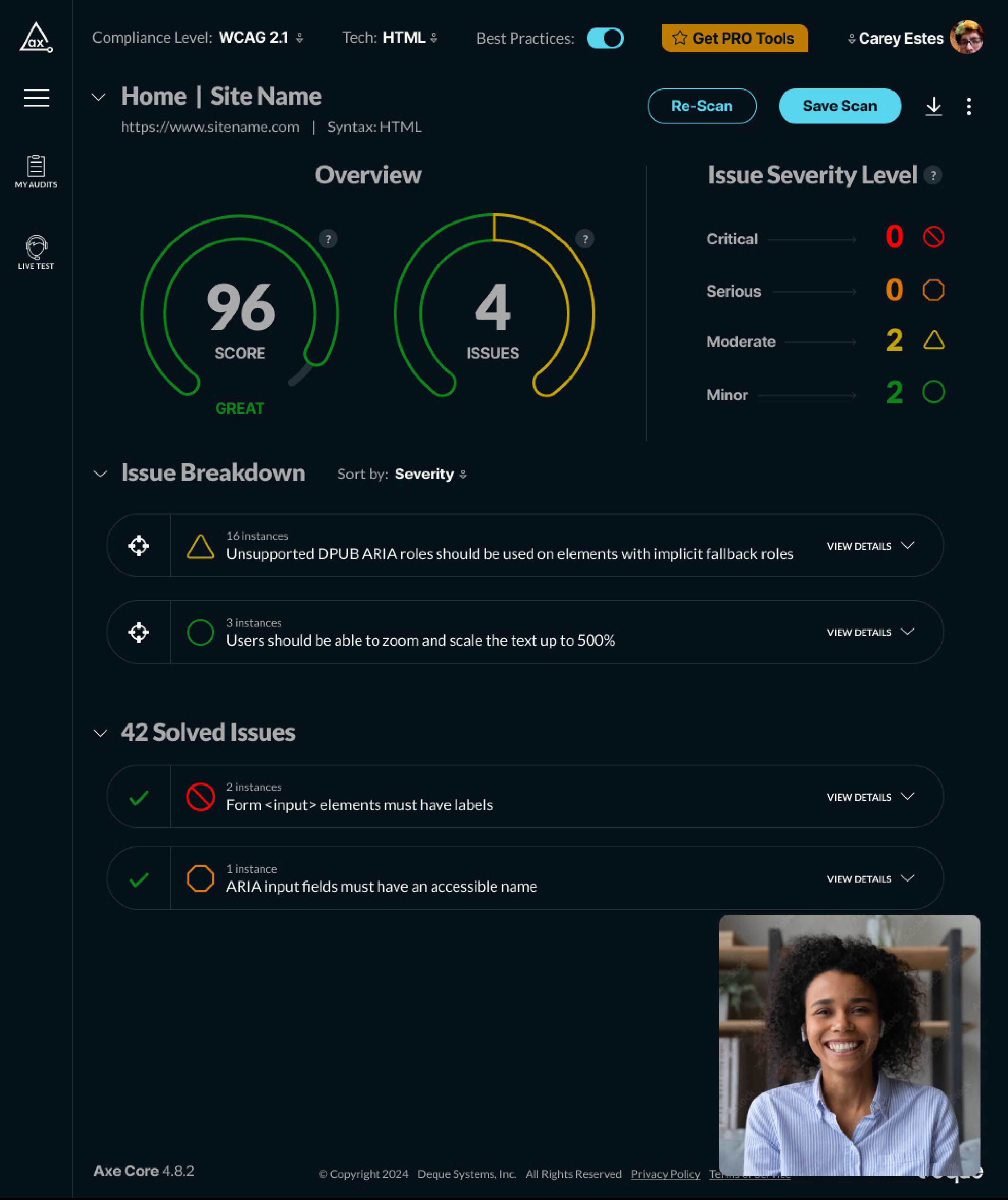

Compliance Level: **WCAG 2.1** Tech: **HTML** Best Practices: ●

Home | Site Name

https://www.sitename.com | Syntax: HTML

Overview

96 SCORE GREAT

4 ISSUES

Issue Severity Level

Critical	0
Serious	0
Moderate	2
Minor	2

Issue Breakdown

Sort by: **Severity**

16 instances
Unsupported DPUB ARIA roles should be used on elements with implicit fallback roles

3 instances
Users should be able to zoom and scale the text up to 500%

42 Solved Issues

✓ 2 instances
Form <input> elements must have labels

✓ 1 instance
ARIA input fields must have an accessible name

Axe Core 4.8.2

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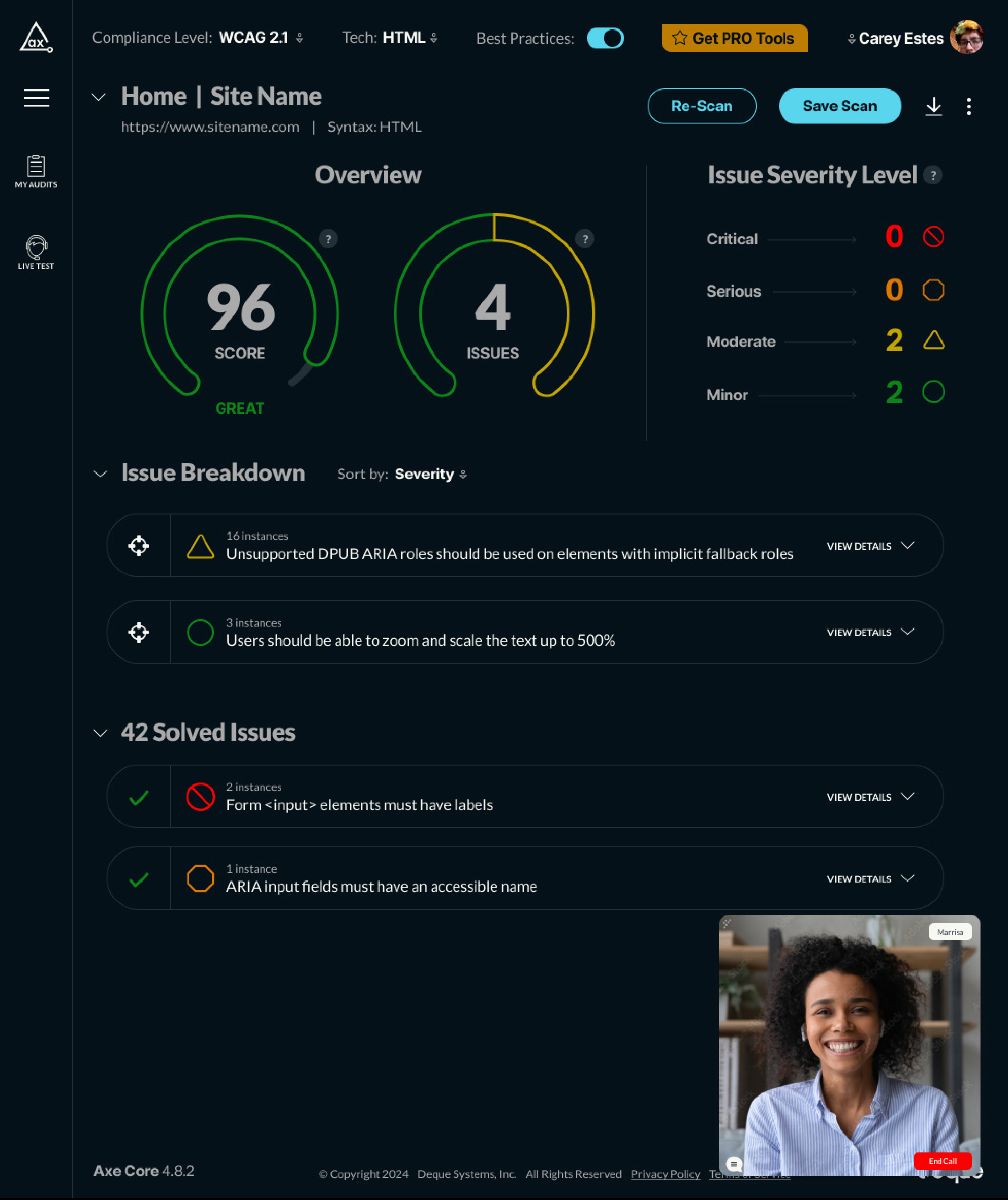

Compliance Level: **WCAG 2.1** | Tech: **HTML** | Best Practices: ● | ☆ Get PRO Tools | Carey Estes

MY AUDITS

LIVE TEST

Home | Site Name

https://www.sitename.com | Syntax: HTML

Re-Scan | Save Scan

Overview

96 SCORE ? GREAT

4 ISSUES ?

Issue Severity Level ?

Critical	0	⊘
Serious	0	⬡
Moderate	2	△
Minor	2	○

Issue Breakdown

Sort by: **Severity**

△ 16 instances
Unsupported DPUB ARIA roles should be used on elements with implicit fallback roles
VIEW DETAILS

○ 3 instances
Users should be able to zoom and scale the text up to 500%
VIEW DETAILS

42 Solved Issues

✓ ⊘ 2 instances
Form <input> elements must have labels
VIEW DETAILS

✓ ⬡ 1 instance
ARIA input fields must have an accessible name
VIEW DETAILS

Axe Core 4.8.2

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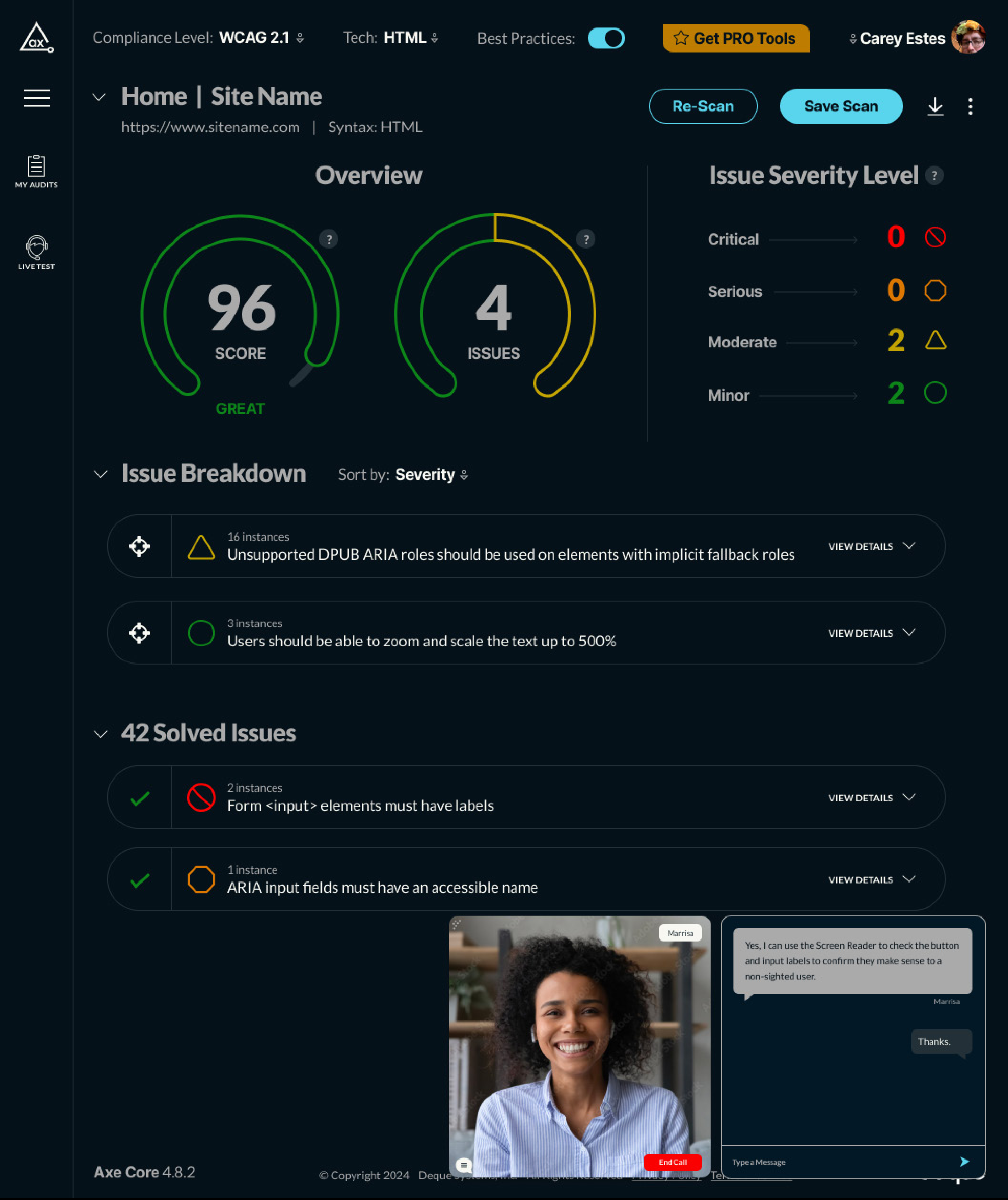

Compliance Level: **WCAG 2.1**   Tech: **HTML**   Best Practices: ●

Carey Estes

Home | Site Name

https://www.sitename.com | Syntax: HTML

Overview

96 SCORE GREAT

4 ISSUES

Issue Severity Level

Critical	0
Serious	0
Moderate	2
Minor	2

Issue Breakdown

Sort by: **Severity**

16 instances
Unsupported DPUB ARIA roles should be used on elements with implicit fallback roles VIEW DETAILS

3 instances
Users should be able to zoom and scale the text up to 500% VIEW DETAILS

42 Solved Issues

✓ 2 instances
Form <input> elements must have labels VIEW DETAILS

✓ 1 instance
ARIA input fields must have an accessible name VIEW DETAILS

Yes, I can use the Screen Reader to check the button and input labels to confirm they make sense to a non-sighted user.

Marrisa

Thanks.

Type a Message

Axe Core 4.8.2

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Development Timeline

Deadline: 14 days

Resources: 1 full-stack developer & myself

Major Goals

- Complete the UI redesign and restructure (1)
- Setup a LLM against Axe rule sets to begin learning how to solve found issues (2)
- Integrate the solution response for DOM code by connecting to the LLM endpoint (2)

Stretch Goals

- Add animations and micro-interactions for loading and hover states (1)
- Improve copy for issue descriptions (3)
- Add feedback button to LLM endpoint to help improve model accuracy (2)

These items have been prioritized to have the highest impact on the efficacy of the tool and provide the most benefit to the user, based on the 14 day runway.

Extended Development Timeline

Deadline: 84 days

Resources: 4 full-stack developers & myself

Major Goals

- Complete the UI redesign and restructure, with loading states and micro-interaction animations (1)
- Setup a LLM against Axe rule sets to begin learning how to solve found issues (2)
- Connect the LLM endpoint response into the tool for DOM code and localized technology code (React, Angular, Vue, etc) (2)
- Integrate connection to automatically update code in the local component on user's machine (2)
- Scout, vet, and employ live testers and establish employment terms and conditions (4)
- Integrate websocket for live tester connection (4)
- Begin production on simulation videos, starting with the most common that can be best illustrated via video. Find hosting solution. (3)
- Add feedback function to improve learning model (2)
- Improve copy for issue descriptions (3)

Stretch Goals

- Develop a component library and design system to facilitate future iterations
- Begin research on CI/CD integration on VM's like Cypress
- Begin research on persistent scanner (always on)

“The power of the Web is in its universality. Access by everyone regardless of disability is an essential aspect.”

- Tim Berners-Lee