Visual AI In The Real World

Use Cases

applitools

Table of Contents

Username

Password

LET'S START
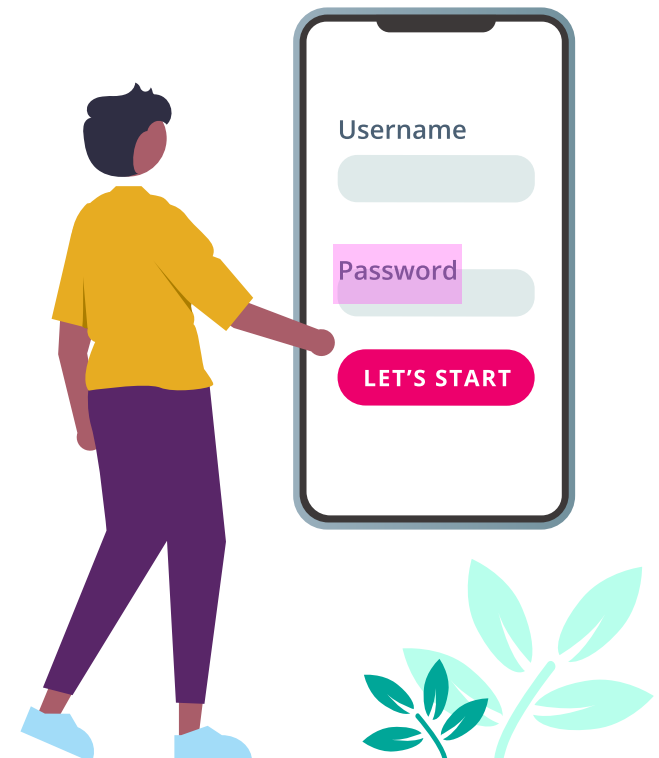
Overview

Visual AI represents a tremendous leap forward in testing technology; it enables engineering and QA teams to automate testing with the fidelity and magic of the human eye. No longer are teams confined to functional tests that deal only with data inputs and outputs and locators in the DOM. Visual AI allows the testing of applications exactly as a user sees it - verifying placement, colors, contrast, and more of any visible element.

Applitools Eyes is the industry leading visual testing platform for mobile, desktop, and web applications. Eyes uses the power of Visual AI to help companies of all sizes achieve outcomes like the ones on the following pages.

Visual Testing

Regression testing for visual defects is one of the most effective ways to deliver stable, quality assured applications as it verifies an application against a state that has already been deemed accepted. Using Visual AI, engineering teams can run regression tests that are faster, more reliable, and catch more bugs than other types of regression tests.

Applitools Eyes finds visual differences by comparing a checkpoint image to a baseline image and reporting differences that are significant, meaning differences that are noticeable to the human eye. In some applications, the nature of the content or the layout may lead to differences that are not actually affecting an applications functionality or usability - these layout changes and specific regions can be omitted from scans to reduce false positives. Eyes also provides various match levels to help deal with challenging page content or layout, or with special application requirements.
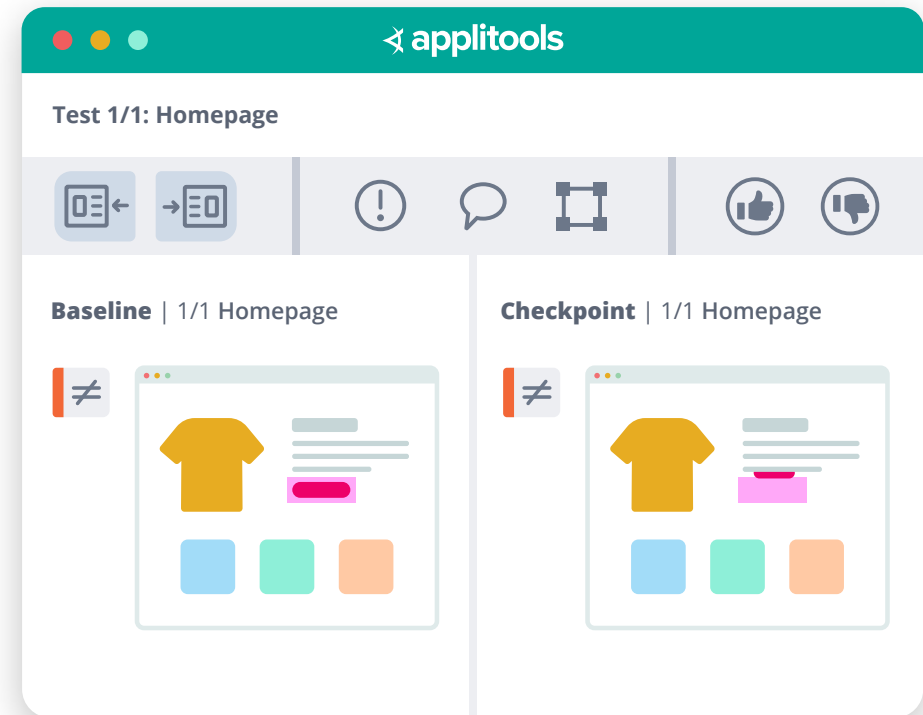
Cross Browser Testing

For teams that have a focus on quality web and mobile applications, the practice of testing a wide breadth of browsers and mobile devices is a necessity. Using Visual AI, Applitools Ultrafast Test Grid and Native Mobile Grid, enhances cross-device and cross-browser testing experiences.

One of the main challenges of cross platform testing is the impact of flakiness across the entire test suite. Running end-to-end functional tests on each device or browser introduces an increased chance of the test failing due to surrounding circumstances: an app not loading correctly, a browser not opening to the correct size, or a pop-up from the OS interfering with actions.

Visual AI can help solve these flakiness problems in two main ways. The first is that Applitools Eyes can use "visual locators" instead of DOM locators, which tend to be flakier. Secondly, when Applitools runs a test, it's not actually connecting and loading the app in the cloud to run tests against. Applitools Eyes actually uses the data captured running your first test to re-render the screen itself using advanced algorithms - meaning test reliability is vastly improved.
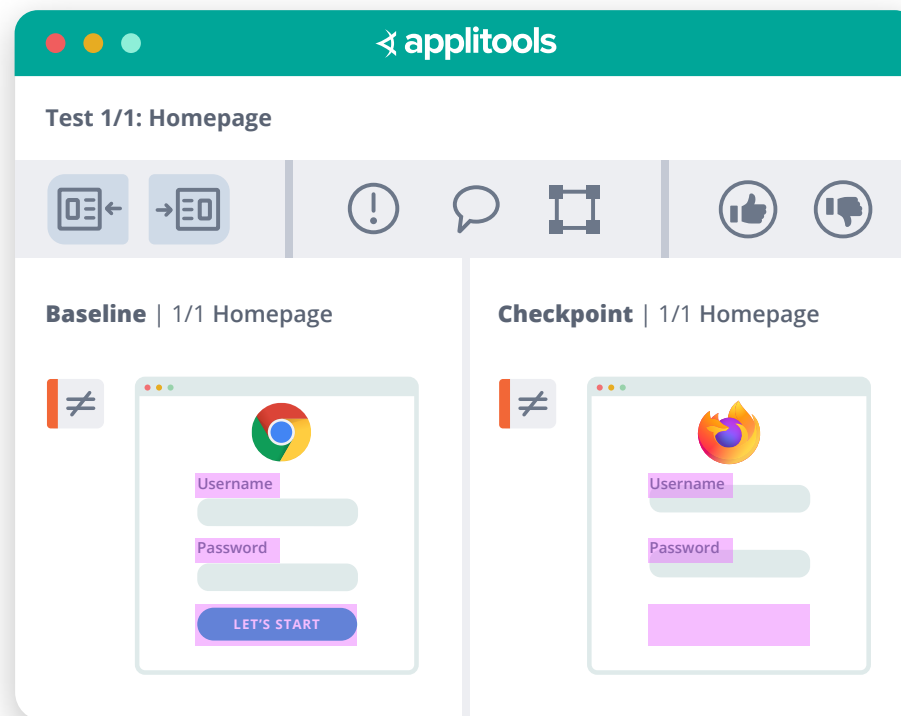
End-to-End Testing

Testing longer, multi-step scenarios is often at the heart of any testing plan that involves an application with a frontend. Testing these end-to-end scenarios can give testers fits when it comes to not only navigating multiple screens but also in writing assertion code. Automating the action of logging in, clicking buttons, and then validating that the results are correct is a process that is prone to many failures. Visual AI can help by allowing your functional tests to use visual locators, instead of locators in the DOM structure. Not only are visual locators more resilient, but when changes do happen, you can just update the visual locators right in the Applitools Eyes Dashboard.

Validating end-to-end user flows with Visual AI also results in more bugs caught, since almost all aspects of the flow's UI is getting tested. A button missing or logo awry will be caught during your test run as easily as a correct value of text or the functioning of a login screen.
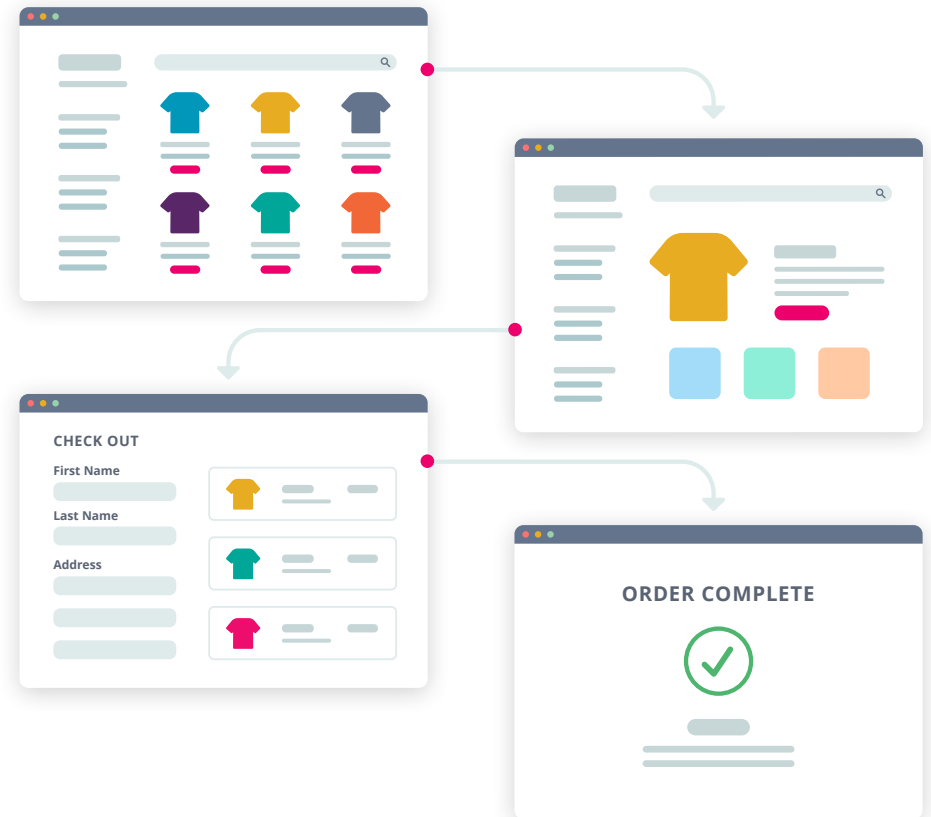
Design System Testing

At Intuit, like many other large organizations, Design Systems play a major role in building and shipping quality applications for their millions of users of their Tax and Money Management tools. Design systems allow designers and developers to build interfaces with small, reusable components. These components are built, tested, and shipped in isolation - representing almost a "unit" or class for the design portion of a UI.

Although components of a Design System should be tested when combined and used to build larger screens and pages, they represent a fantastic first layer of testing for forward thinking engineering teams. Testing components allows teams to catch visual flaws earlier in the development process.

Applitools Eyes can test design systems with the accuracy, reliability, and speed of AI-powered visual testing. It can detect noticeable regressions in size, shape, color, placement, and more introduced by new design updates from designers or developers. By monitoring their components with Applitools Eyes, Inuit's QA team was able to significantly reduce the amount of escaped bugs that were released into production via a bug in the design system.
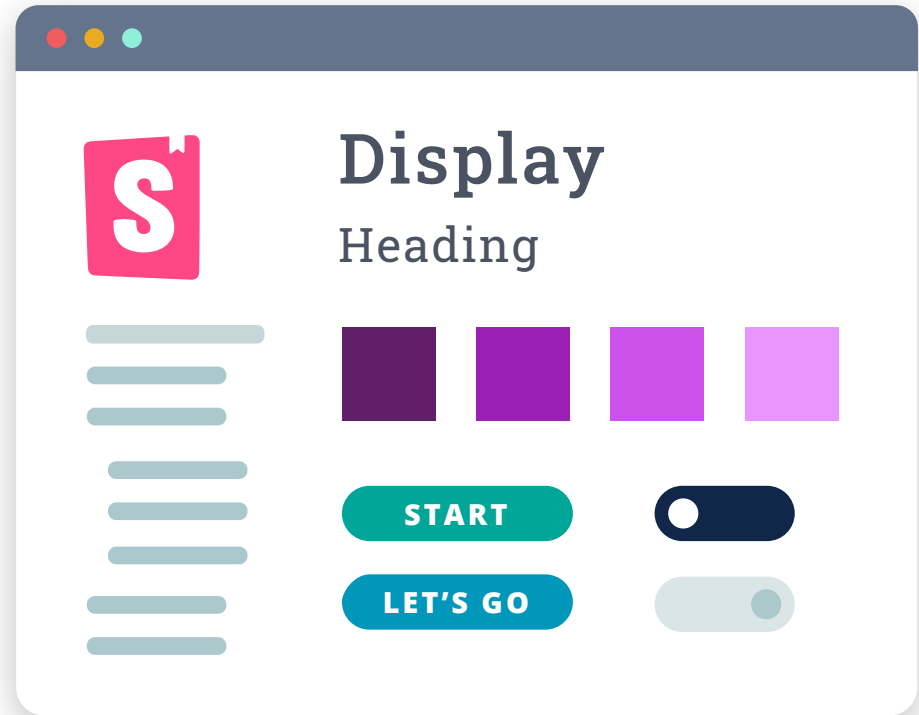
Accessibility Testing

Companies in the education, financial, and public space need to build applications that conform to many different Accessibility regulations and bylaws. This can range from the application needing to be navigated through from only a keyboard, to making sure that objects are easily visible depending on color schemes.

Applitools Eyes and Contrast Advisor can help teams automate their Accessibility Testing to help improve the usability of their application across a diverse range of users. The Applitools Contrast advisor functionality supports accessibility validation, focusing on the standards that define minimum contrast ratios for text and graphics.

Validating contrast ratios differs from standard Eyes visual testing in that Eyes does not compare the checkpoint image to a reference baseline image that defines the expected results. Instead, Eyes identifies the various elements on the page and their type (e.g. graphics or text), measures the contrast ratio between the foreground and the background of these elements, and compares the contrast ratio to the minimum contrast ratio defined by WCAG for that type of element. If the measured contrast ratio of any part of an element is less than the minimum defined by WCAG, then a contrast ratio violation is flagged for that element.
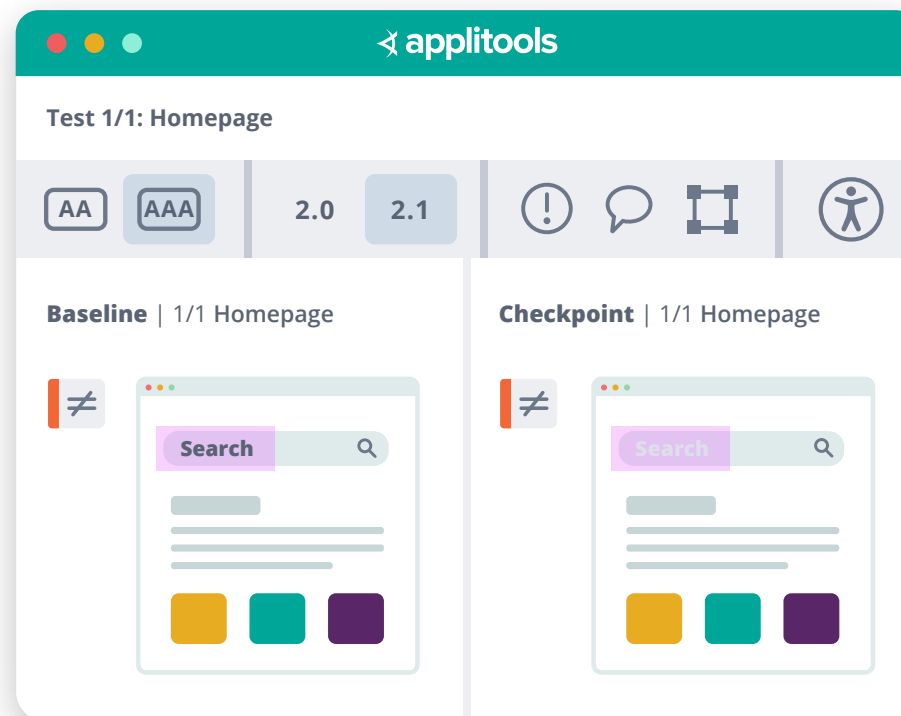
PDF Testing

Many companies in the financial and manufacturing sectors rely on PDFs to document contracts, processes, and other artifacts from the business. As these documents are often legally required to be kept and recorded - Visual AI can be a massive help as it scans and verifies changes to hundreds of PDFs in just minutes. PDFs also contain language & text that needs to be accurate down to the letter and font size, something that can not be done manually at any scale.

While many visual testing tools are unable to scan and understand objects and text in PDF documents, Applitools Eyes can easily test and validate PDFs at an unprecedented scale.
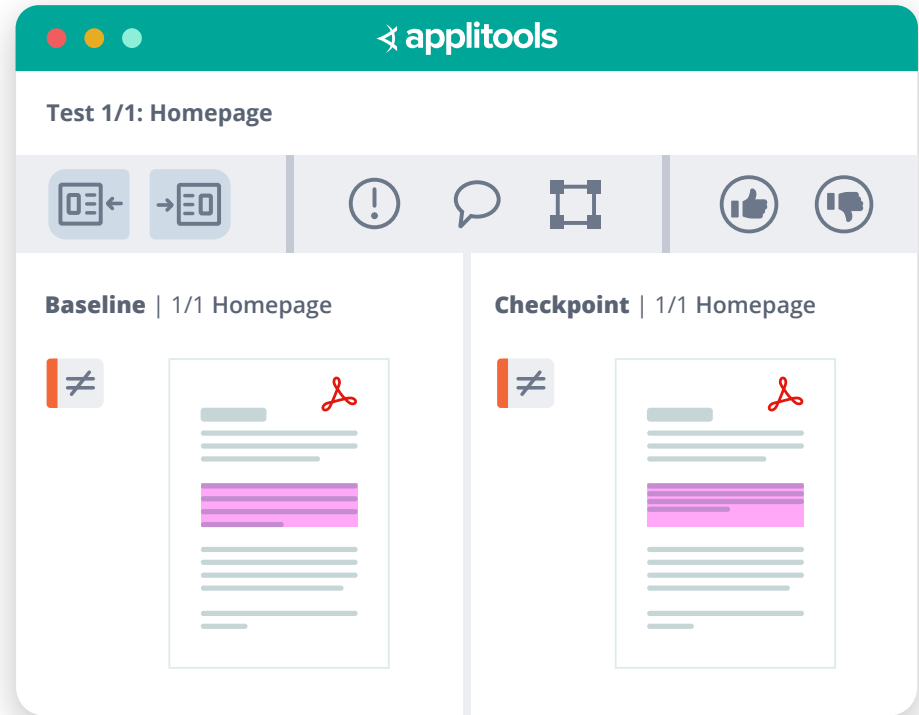
Localization Testing

When your brand goes international, testing can quickly become untenable across each language. Each language represents an entirely different application - and affects every single test assertion. Supporting just one or two languages other than a primary language can quickly bottleneck your release process.

Localization also causes a whole new set of common functional and visual bugs. Untranslated text, text overlap, inadequate font selection, and layout changes all frequently happen when huge chunks of text in your application can quickly change.

But with Visual AI, testing for localized languages is much simpler. Applitools Eyes will verify each language separately without having to write complicated assertions for each one. Simply run your visual test giving it context around which languages you are testing, and Applitools can verify the application screen with a baseline for each language.
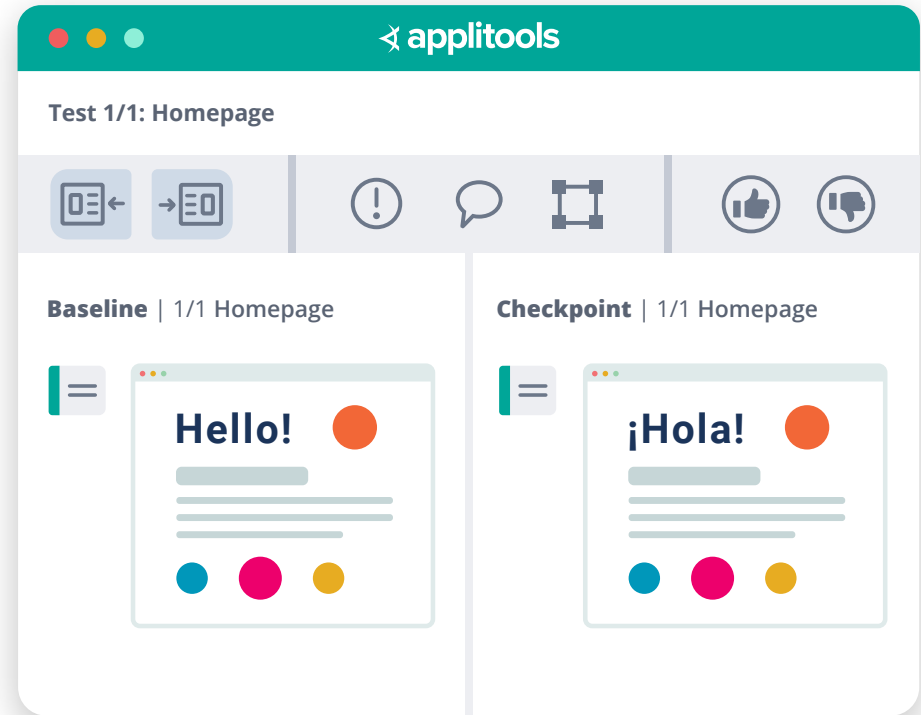
Brand Compliance

"Brand" is continuing to be a hot topic for businesses that want to rise above the competition with something that can't be copied: their soul. A company's brand is more than the colors they use or their logo, but a promise around the experience and quality that their customers can expect during any interaction - whether that's shopping, transacting, or sharing their latest feedback. That experience not only needs to be high quality, but also consistent. Images, fonts, buttons, graphic styles, colors, and more need to be instantly recognizable by being unique and consistent.

Visual AI can help digital teams stay compliant with visual regression testing that can help spot defects in any type of brand marker - like a wrongly colored background or the wrong font used in a key button!