Bloor

InBrief

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KEYSIGHT TECHNOLOGIES

eggplant Test Automation Software

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Eggplant Digital Automation Intelligence (DAI)

The company

Eggplant was founded in 2008 to help organisations put users at the centre of their software testing. It has a long list of partners and active customers, and in 2017, it launched Eggplant AI, a software test automation solution and now the core of the company's Digital Automation Intelligence (DAI) platform.

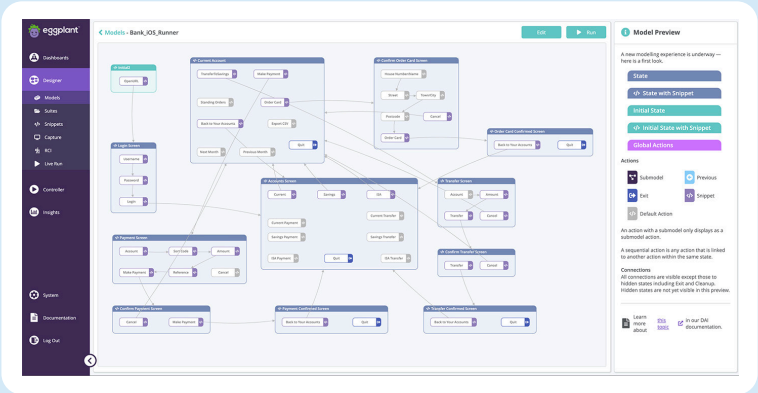

Figure 1 – Eggplant DAI Digital Twin Model

In 2020, Eggplant was acquired by Keysight Technologies. Keysight manufactures electronics test and measurement equipment, so combining it with the software testing provided by Eggplant is something of a natural fit. Keysight Technologies was founded in 2014, having been spun off from Agilent Technologies. It operates at a global scale, and boasts more than 30,000 customers as well as almost 14,000 employees.

What is it?

Eggplant Digital Automation Intelligence (DAI) is a software automation platform that leverages AI and machine learning (ML) to create a digital twin model (as seen in ***Figure 1***) for functional, regression, and user experience testing across any device, browser, operating system, or platform. This typically includes automating all major aspects of your testing within your CI/CD pipeline, stretching from low-level test execution all the way up to high-level test design. In fact, one of Eggplant's recent goals is to offer complete, end-to-end testing over a variety of systems at enterprise scale, including software and (thanks to integration with Keysight) hardware as well. To offer only one example of this, Eggplant and Keysight are currently being used to emulate and test entire 5G network towers.

Moreover, the testing approach taken is unflinchingly focused on the end user. This means that tests are created with little bias – Eggplant takes the point of view that any plausible path through your application is one a user might take, no matter how complex, and should therefore be considered in your testing – and can be executed just as if a human was piloting them, even operating at human-like speeds when appropriate.

Eggplant DAI is the core platform containing multiple products, including Eggplant Functional, for test execution, and Eggplant Real Customer Insights, for measuring and analysing release quality. Accelerators, such as Eggplant Salesforce Solution, are also available, to help customers quickly deploy Eggplant's test automation capabilities (for their Salesforce SaaS instance, in this case).

What does it do?

In Eggplant DAI, you build a graphical model of your application, interface or website (your 'system under test', or SUT), which you can then use to automatically generate exploratory test cases, test scripts, and code snippets. This build process can be automated in terms of both model and test creation, and AI is used to maximise test coverage. You can also create test cases manually if you so choose, though it is recommended that you do this sparingly (if you need to prove you have certain tests in place for compliance reasons, for example). In addition, you can import existing (Selenium, say) test cases into your Eggplant environment.

Risk-based testing is also available – again driven by AI – in order to prioritise particularly critical tests and identify, then repeat, common patterns found within failing tests until they no longer consistently fail.

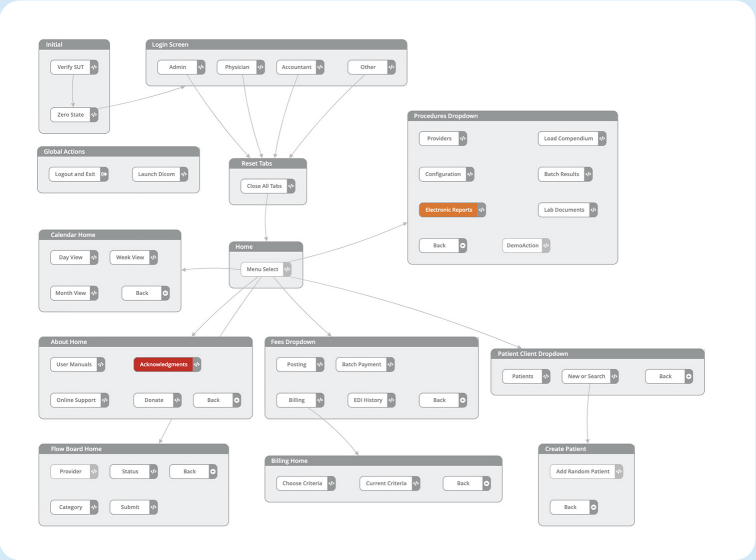

Figure 2 – Eggplant DAI Heat Map

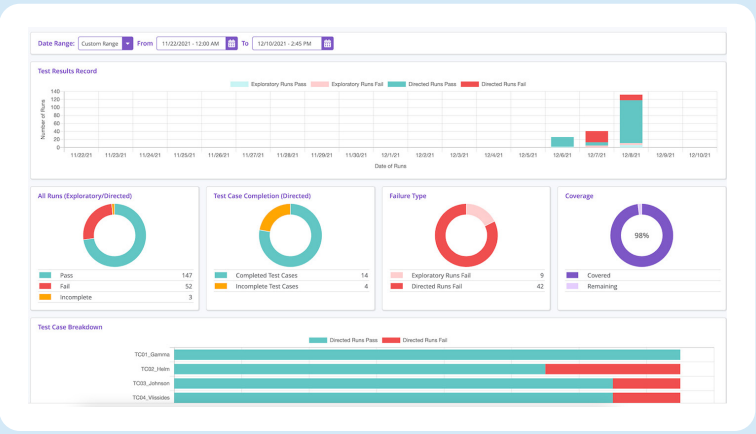

Figure 3 – Eggplant DAI Dashboards

Test cases generated by Eggplant are, as a rule, fully executable within both Eggplant Functional and directly inside Eggplant DAI. Eggplant DAI's Universal Fusion Engine means that tests can be executed against any system, non-intrusively and without modifying your testing assets. Performance/load testing is also on offer, and in fact, Eggplant Functional scripts can also be used as performance tests.

Eggplant test scripts can also self-heal based on a set of parameters generated by user responses to failed tests. In other words, if you (explicitly or implicitly) tell Eggplant DAI that it makes no difference that an element on a webpage under test has changed size, Eggplant will recognise that and adjust the relevant tests to ignore an appropriate amount of change in scale. Over time, this should lead to a robust set of tests that will largely maintain themselves in the face of superficial changes to your SUT. However, running this process fully autonomously is not recommended, due to the possibility of false positives. Rather, a review process should be implemented. You can also let your tests locate elements via their underlying HTML/XML attributes directly ("DOM matching") rather than their displayed properties, which can additionally contribute to test resilience.

You are provided several ways of viewing your test results, notably including a coverage graph and heat map (the latter of which is shown in ***Figure 2***), and the model itself provides tagging and automated screenshotting, so that (for example) when a test fails, you can see what happened at each step without needing to rerun the test. There are also dashboards (see ***Figure 3***) used to display various monitoring results: the dashboard for displaying the methodology behind the decisions Eggplant DAI is making is particularly notable.

Robust integration with Keysight is provided, and automated via the SenseTalk proprietary language developed in-house. Various other integrations are available, for instance, with KeyCloak for security and access management. You can also provide access to Eggplant DAI in the cloud via a series of microservices, or even deploy it as a cloud container in AWS.

Why should you care?

Eggplant DAI has many strengths, but its greatest might be the extreme level of automation – and indeed, AI – present in the product. This includes automation all the way up to the design level, encompassing large parts of test creation, test execution, model creation, and test maintenance. It can be used to either replace or augment your more manual efforts, but either way it promises to dramatically increase the speed and ease with which you can produce test assets, while at the same time maximising test coverage and minimising bias. In addition, the automated model creation provided makes it fast and easy to get up and running with an Eggplant digital twin model, and by extension the product itself, minimising onboarding time and costs. The degree of humanlike and end-to-end testing provided by the product is also very impressive.

The Bottom Line

Eggplant DAI is a highly automated and intelligent test automation offering designed above all to facilitate the creation of seamless (testing of) user experiences. In this regard, we rate it very highly indeed.

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