



AI-ENABLED TESTING WILL GET SMARTER @ 2023

GREESHMA T NATH

IT EXECUTIVE, MUTHOOT MICROFIN LTD, KADAVANTRA

Abstract: software testing is a long way off from being truly autonomous, the sector can look forward in 2023 to tools that are increasingly capable of serving as test team assistants or consultants. Software testing is the process of evaluating and verifying that a software product or application does what it is supposed to do. The benefits of testing include preventing bugs, reducing development costs, and improving performance.

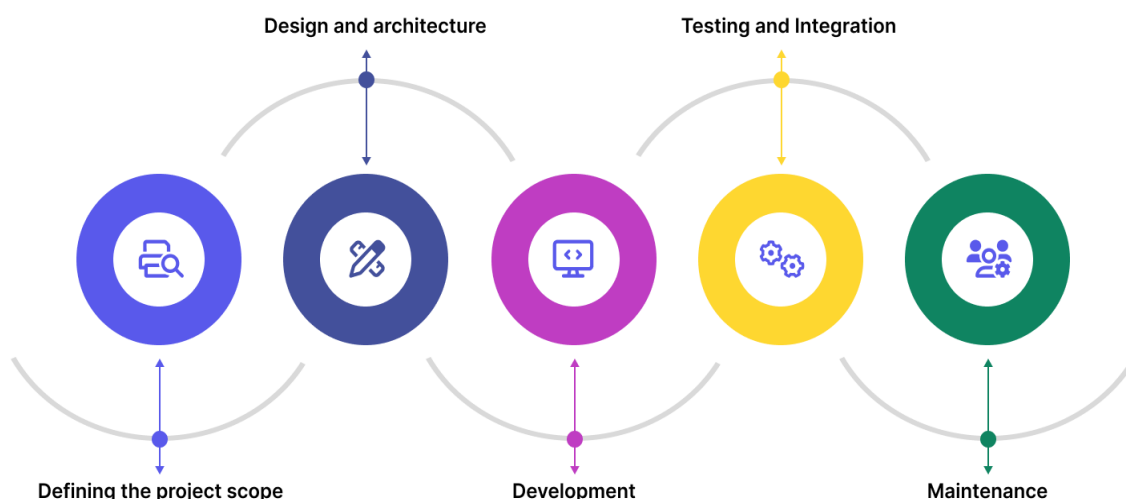
Keywords: Progress of testing, AI-enabled testing, testing, advantages of AI-related testing.

I. AI-ENABLED TESTING WILL GET SMARTER

AI-enabled software quality management platforms will continue to become easier to use in 2023. They will have greater efficacy, and relieve testers of many tedious and repetitive tasks. Testers will begin adopting AI-augmented tools for automated test generation. AI-enabled products will also begin to facilitate synthetic data creation based on real-user patterns.

II. SHIFTING TO THE LEFT WILL ACCELERATE

software engineering process as a chain of activities. The development stage has traditionally been a phase in which engineers develop apps. Manual testing forces testing and integration as a separate step in production, further to the right of the development chain. Testing can happen during the development phase, closer to the action of programming because testing will be much more convenient and rapid than in the past. developers will do more support testing.



III. TESTING

Artificial Intelligence can help us in several ways to improve efficiency and effectiveness. It's used to automate test processes, generate new test cases, and analyze data to predict potential defects.

If there are two tests available ie, “**MANUAL TEST & AUTOMATION TEST**” these are the two types of tests.



Aspect of Testing	Manual Testing	Automation Test
Test Execution	Done manually by QA testers	Done automatically using automation tools and scripts.
Test Efficiency	Time-consuming and less efficient	More testing in less time and greater efficiency
Types of Tasks	Entirely manual tasks	Most tasks can be automated, including real-user simulations
Test Coverage	Difficult to ensure sufficient test coverage	Easy to ensure greater test coverage

IV. ADVANTAGES OF AI IN SOFTWARE TESTING

ADVANTAGES	DESCRIPTION
Test automation	AI can help us automate the process of test case generation, execution, and evaluation. This reduces manual effort and makes the testing process faster.
Increases Test Coverage	AI can analyze test and code data and after that, generate test cases to cover scenarios, boundaries, edges, negative cases, etc. This will increase our test coverage also helping us to identify potential issues before the software is released.
Test optimization	Our test processes can be optimized by AI analyzing requirements and test cases. This can give us the best point of view to prioritize the test case, having a better test strategy to focus on critical areas of our application.
Regression test	AI can obtain the data of the changes made to our software and automatically identify the affected areas to be retested. With this information, we will be more meticulous in generating our Regression test plans and having a faster regression test.
Reduce cost and time	Integrating AI into our daily work can help us to reduce time and cost, helping the team to be more efficient. It allows the team to focus on more critical testing activities.



V. SOME OF THE TOOLS THAT CAN BE USED ARE

- **Selenium with AI integrations:** As you may know, Selenium is an open-source test automation framework. The integration with AI can enhance its capabilities by providing intelligent element locators and improved test script generation.
- **Test.ai:** This tool uses AI to perform UI testing identifying and verifying the UI elements. It automatically creates test cases based on the UI components of the application.
- **Applitools:** Provides AI-powered visual testing solutions that can automatically detect UI defects and layout issues across different devices and browsers.
- **Diffblue Cover:** This tool uses AI to automatically generate unit tests using Java. It uses machine learning to understand code patterns and create tests.
- **DeepCode:** This AI-powered tool reviews code to find potential bugs, security vulnerabilities, and performance issues by analyzing code patterns and best practices

VI. CONCLUSION

In conclusion, it seems that Artificial Intelligence has come to stay and help us in our daily work. If we decide to integrate AI into our team, it will help us to improve efficiency and have faster software delivery with the highest quality software.

REFERENCES

- [1]. The Art of Software Glenford J. Myers
/The_Art_of_Software_Testing.html?id=DV0ZAQAIAAJ&source=kp_book_description&redir_esc=y
- [2]. <https://blog.testlodge.com/best-software-testing-books-list/#h-software-testing-technique-2nd-edition>
- [3]. <https://blog.testlodge.com/best-software-testing-books-list/#h-software-testing-a-craftsman-s-approach-3rd-edition>
- [4]. <https://blog.testlodge.com/best-software-testing-books-list/#h-beautiful-testing-leading-professionals-reveal-how-they-improve-software>