

3

5 Things That Will Impact the Future of Software Testing

7

Why Testers Should Take Control of the AI Narrative

11

What's Our Job When the Machines Do Testing?

12

Leveraging Machine Learning to Predict Test Coverage

14

The AI Testing Singularity

15

4 Advantages of Applying AI in Software Testing

16

Testing the Ethics of AI

17

Insight from the Industry

18

Additional Resources

At today's rapid pace of software delivery, manual testing alone is simply inadequate. Artificial intelligence will soon be a necessity for testers to keep up—and in many ways, that reality is already here. But what do these AI capabilities look like, and how can they augment and benefit our test activities? This eGuide rounds up a collection of resources that explain what truly qualifies as AI, the different types of AI, and how quickly AI is advancing. It's time to embrace the future of testing.

## In this AI and the Future of Testing eGuide

### 5 Things That Will Impact the Future of Software Testing

From the way we look at software, evaluate risks, think about complexity, design our test approach and strategy, and help to release a stable product to the customer, technology has had an influence on how we test software. And that influence will only continue as technology advances. On a high level, here are five key things we're already seeing that are going to shape the future of software testing.

### Why Testers Should Take Control of the AI Narrative: An Interview with Tariq King and Jason Arbon

In this interview, Tariq King, the senior director and engineering fellow for quality and performance at Ultimate Software, and Jason Arbon, the CEO of test.ai, explain the role artificial intelligence plays in modern testing and why you should establish a foundation right now.

### What's Our Job When the Machines Do Testing?

It's a safe bet that testing jobs won't be taken over by machines anytime soon. However, those of us in the test industry would be wise to heed cross-industry applications of analytics and machine learning and begin staking out the proper role of the machine in our testing domain. What could AI mean for testing?

### Leveraging Machine Learning to Predict Test Coverage

Test coverage is an important metric within test management, and as technology evolves, we're able to leverage new trends to predict coverage. Weka, an open source suite of machine learning software, can take your test management beyond spreadsheets to the latest AI technologies, letting you predict your test coverage earlier with greater accuracy.

### The AI Testing Singularity

Machine learning is rapidly growing more powerful, already sometimes imitating the actions and judgments of humans better than humans. In the near future, even before machines are conscious, they will be able to mimic human software testers. What will be the impact of AI on testing? Jason Arbon has a bunch of ideas.

### 4 Advantages of Applying AI in Software Testing

We're always looking for smarter, faster, better ways of testing. As the popularity of artificial intelligence grows, more and more testers are realizing its capacity to make cumbersome and time-consuming tasks simpler. AI is coming, so we should take advantage of it. Here are four benefits to applying AI in testing.

### Testing the Ethics of AI

AI is a double-edged sword. When it's being used in situations involving sensitive personal data, such as health care, banking and finance, and real estate, security is of the utmost importance—and so are ethical implications. It's up to testers to mitigate risks and make sure AI is used responsibly.

### Insight from the Industry

### Additional Resources

# 5 Things That Will Impact the Future of Software Testing

By Raj Subramanian

In the past few decades, software testing has evolved in terms of both the tools used to perform different activities and the mindset of the people using those tools. There used to be only a handful of tools used in software testing, but now we have a plethora of tools to choose from, from proprietary to open source. Likewise, people have started thinking of testers as information brokers instead of gatekeepers, and there have been a lot of positive developments in the agile world that have contributed to significant changes in the processes that teams follow in their software development lifecycle. Advancements in technology are to thank for these evolutions.

From the way we look at software, evaluate risks, think about complexity, design our test approach and strategy, and help to release a stable product to the customer, technology has definitely had an influence on how we test software, and that influence will only continue as technology advances. On a high level, here are five key things we're already seeing that are going to shape the future of software testing.

## 1. Artificial Intelligence

About five years ago, everyone was talking about “mobile first” and giving the user a mobile experience using mobile web, native, and hybrid applications. Now, the new buzzword is AI. It is in self-driving cars, home assistants (people sure do love their Alexa), computer vision, health care, finance, and now in software testing.

Currently, there are very few reliable tools in the market that use machine learning to help in the authoring and execution of func-



tional testing, end-to-end testing, and regression testing. They are primarily concentrated in UI-based test automation—the more tests the user creates, the smarter the algorithm becomes, which makes the tests more stable.

Here are some of the benefits we could expect to start seeing in testing thanks to AI:

- Easier authoring of tests
- Lower maintenance work on test scripts
- Fewer flaky tests
- Having nontechnical people start doing automation
- Easier CI/CD integration
- More reusable tests

3

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15

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16

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17

Insight from the Industry

18

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