Challenges with Test Automation

The survey will take approximately 8 minutes to complete.

* Required

Demographic Information

1. I work at... *

   ☐ a company

   ☐ a university or research institute

   ☐ Other

2. I have experience in test automation as *

   ☐ a user

   ☐ a developer

   ☐ a researcher

   ☐ Other

3. I have worked with, studied or done research on test automation for *

    ◯ 0-1 years

    ◯ 1-3 years

    ◯ 3-5 years

    ◯ 5-10 years

    ◯ 10-20 years

    ◯ 20+ years

Human control and responsibility

How important are these questions? Note that we do not seek answers to the questions, but instead your opinion on whether or not these topics are important to consider when developing

4. How important is it to consider these questions when automating software testing? *

	Not at all Important	Slightly Important	Moderately Important	Very Important	Extremely Important
How are humans in control of the test automation?	○	○	○	○	○
What would be an adequate performance of the test automation?	○	○	○	○	○
How could inadequate performance be detected?	○	○	○	○	○
If the test automation fails or under-performs, who is responsible?	○	○	○	○	○
Are the ones responsible for the under-performance also the ones responsible for correcting the test automation?	○	○	○	○	○

5. Comments of reflections? (Optional)

Justice and fairness

6. How important is it to consider this question when automating software testing? *

	Not at all Important	Slightly Important	Moderately Important	Very Important	Extremely Important
What would be considered a fair or just set of automated decisions?	○	○	○	○	○
How could a human contest, or object to, a poor decision made by the test automation?	○	○	○	○	○

7. Comments or reflections? (Optional)

Explainability, logging and monitoring

8. How important is it to consider these questions when automating software testing? *

	Not at all Important	Slightly Important	Moderately Important	Very Important	Extremely Important
How can the test automation explain its automated decisions to a human?	○	○	○	○	○
How can automated decisions be investigated by a human?	○	○	○	○	○
Are automated decisions and malfunctions logged?	○	○	○	○	○
How is the impact of automated decisions (e.g. test coverage) monitored, and how is this similar or different to the monitoring of human decisions?	○	○	○	○	○

9. Comments or reflections? (Optional)

Human-centric risk analysis

10. How important is it to consider these questions when automating software testing? *

	Not at all Important	Slightly Important	Moderately Important	Very Important	Extremely Important
How have potential risks for humans been considered?	○	○	○	○	○
What is the risk that the test automation leads to complacency, over-trust, skill degradation, neglect of human skills or values, poor situational awareness?	○	○	○	○	○
What are the risks that automation negatively impacts the possibilities for humans to make free and sound decisions, e.g. with flawed decision-support, or imperfect thresholds or interpretations of quality levels?	○	○	○	○	○
	Not at all Important	Slightly Important	Moderately Important	Very Important	Extremely Important

| What will staff that used to do manual work (now automated) do instead? | ○ | ○ | ○ | ○ | ○ |

11. Comments or reflections? (Optional)

Stakeholder involvement

12. How important is it to consider these questions when automating software testing?

    By stakeholders we mean e.g., test automation developers, test result consumer, managers, and other users. *

	Not at all Important	Slightly Important	Moderately Important	Very Important	Extremely Important
Have all relevant stakeholders had the opportunity to participate in the development of the test automation?	○	○	○	○	○
Will this test automation, overall, bring value for the stakeholders?	○	○	○	○	○

13. Comments or reflections? (Optional)

    [   ]

Impact on human relations

14. How important is it to consider this question when automating software testing? *

	Not at all Important	Slightly Important	Moderately Important	Very Important	Extremely Important
What are the risks that the test automation negatively impacts human relations, e.g., by being beneficial only to a subgroup (e.g. senior developers) while disempowering another subgroup (e.g. junior testers)?	○	○	○	○	○

15. Comments or reflections? (Optional)

Technical risk analysis

16. How important is it to consider these questions when automating software testing? *

	Not at all Important	Slightly Important	Moderately Important	Very Important	Extremely Important
How have potential technical risks with the test automation been identified and mitigated?	○	○	○	○	○
What are the risks that this automation will not work well with other automations from a greater software development perspective?	○	○	○	○	○

17. Comments or reflections? (Optional)

> [   ]

Sustainability and waste

18. How important is it to consider this question when automating software testing? *

	Not at all Important	Slightly Important	Moderately Important	Very Important	Extremely Important
What are the risks that the test automation will produce unreasonable amounts of waste, e.g. extreme power consumption, meaningless log files, etc.?	○	○	○	○	○

19. Comments or reflections? (Optional)

Privacy

20. How important is it to consider these questions when automating software testing? *

	Not at all Important	Slightly Important	Moderately Important	Very Important	Extremely Important
How is data needed by the system anonymized, minimized or otherwise protected from unauthorized access?	○	○	○	○	○
If the system were to be hacked by an outsider, what information would leak?	○	○	○	○	○

21. Comments or reflections? (Optional)

Previous Experience

22. In your current or past test automation project(s), how much have you considered these challenges?

	Not Considered	Somewhat Considered	Considered
Human Control and Responsibility	◯	◯	◯
Stakeholder Involvement	◯	◯	◯
Explainability, Logging and Monitoring	◯	◯	◯
Impact on Human Relations	◯	◯	◯
Human-Centric Risk Analysis	◯	◯	◯
Technical Risk Analysis	◯	◯	◯
Justice and Fairness	◯	◯	◯
Privacy	◯	◯	◯
Sustainability and Waste	◯	◯	◯

23. In your current or past test automation project(s), how difficult was it to implement a good solution for these challenges?

	Very Difficult	Difficult	Easy	Very Easy	Not Applicable (did not consider)
Human Control and Responsibility	○	○	○	○	○
Stakeholder Involvement	○	○	○	○	○
Explainability, Logging and Monitoring	○	○	○	○	○
Impact on Human Relations	○	○	○	○	○
Human-Centric Risk Analysis	○	○	○	○	○
Technical Risk Analysis	○	○	○	○	○
Justice and Fairness	○	○	○	○	○
Privacy	○	○	○	○	○
Sustainability and Waste	○	○	○	○	○

Wrap Up

24. What other challenges with test automation -- e.g. on human factors, morality, trust, fairness -- are relevant to you? Why? (Optional)

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25. Other comments or feedback to this survey? (Optional)

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