Software Center

Trustworthy and Human-Centered Test Automation (TAHCTA)

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Navigating Trust and Bias in Testing and Test Automation

Assessement and evaluation of Test Automation (TA) systems and how they align with trustworthy dimensions:

Dimension	Guideline Questions
Explainability	Can the TA system explain its decisions to a human?
Privacy	Have potential risks with the TA been considered?
Technical Risks	Who is responsible if the system under-performs?
Stakeholder Involvement	Have all stakeholders participated in the design of the TA system?
Human Control	How are humans in control of (TA)?
Fairness	What would be considered a just TA?
Human Relations	What is the TA's impact on human performance?
Sustainability and Waste	Have potential risks with the TA been considered?

Biases in Test Automation and Software Testing: Insights and Challenges
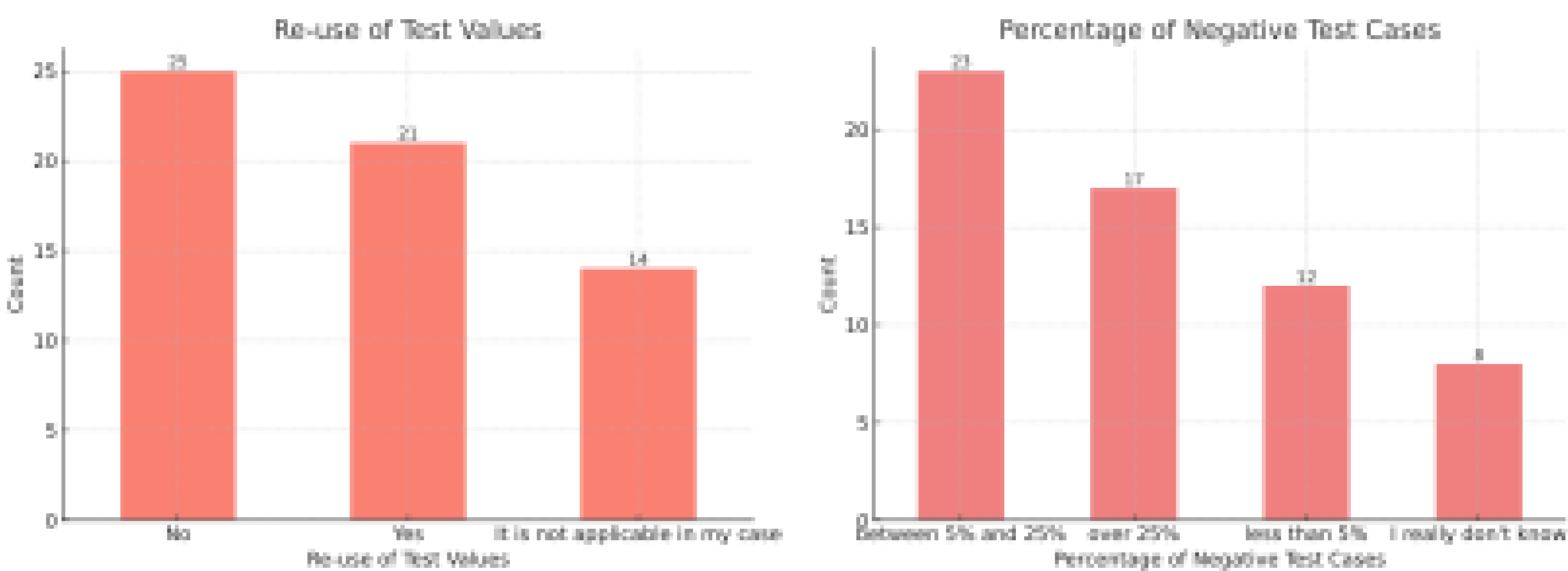
Biases idenfified in practice:
- (1) Over-reliance on automated tools, (2) relying on initial info for decisions and (3) confirmation bias

Why Bias Matters:
- Biases shape decisions in test automation.
- They influence even dimensions like responsibility and transparency.
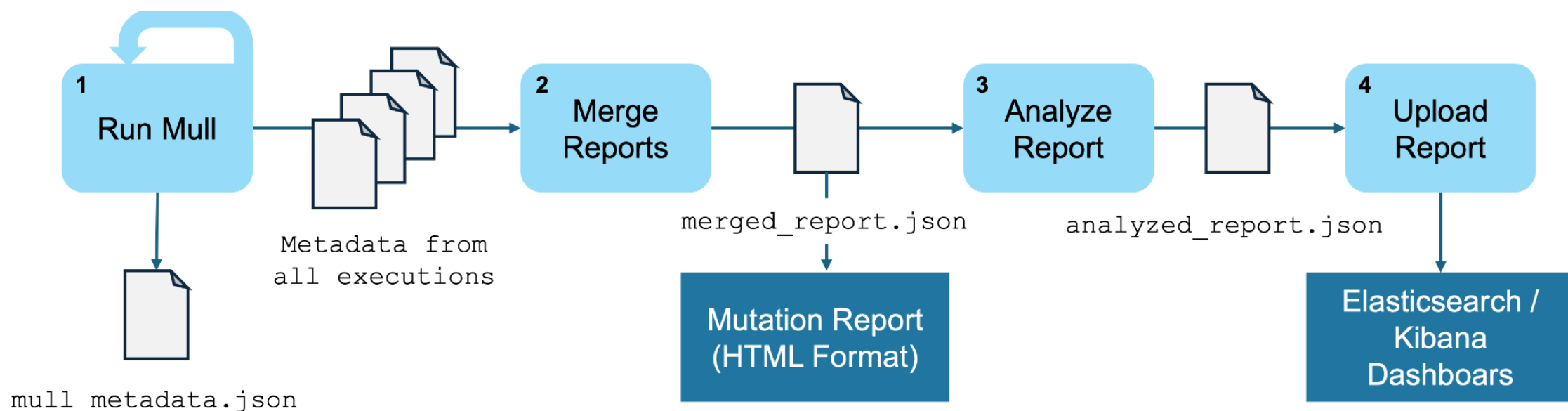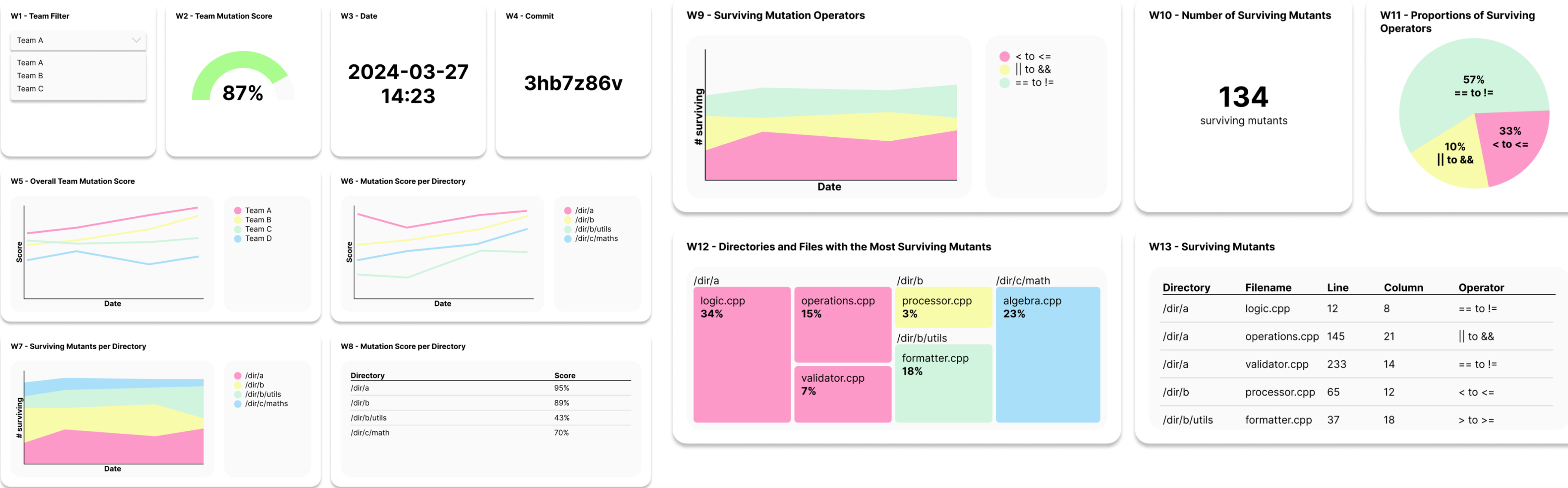
Read more:

Heading

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Integrating Mutation Testing Into Developer Workflow

Mutation testing is a potentially effective way to assess test quality. However, many developers lack guidance on:
- Technical integration of mutation tools into CI pipelines.
- What information from mutation testing is useful.
- How that information should be presented.

Research highlights:
- Integrated C++ mutation tools into CI/CD.
- Present text-based report and visualization dashboard to developers to use in test improvement.
- Identified technical challenges, findings on effective information presentation, recommendations on future integrations of mutation testing.

Read more:
https://greg4cr.github.io/pdf/24mutation.pdf