

expo IQA 25

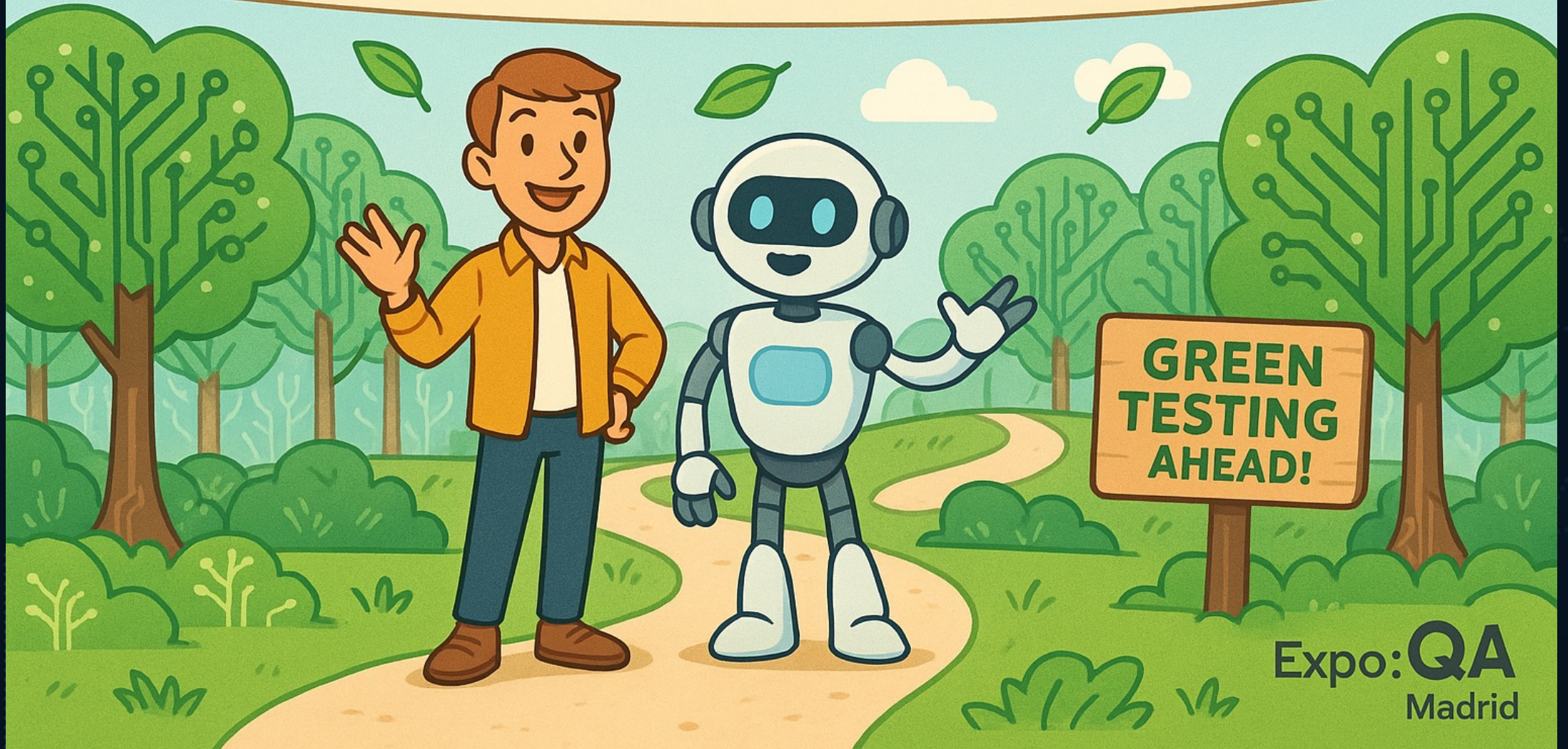
MADRID
May 20th,
21st & 22nd
2025



expoqqa.eu

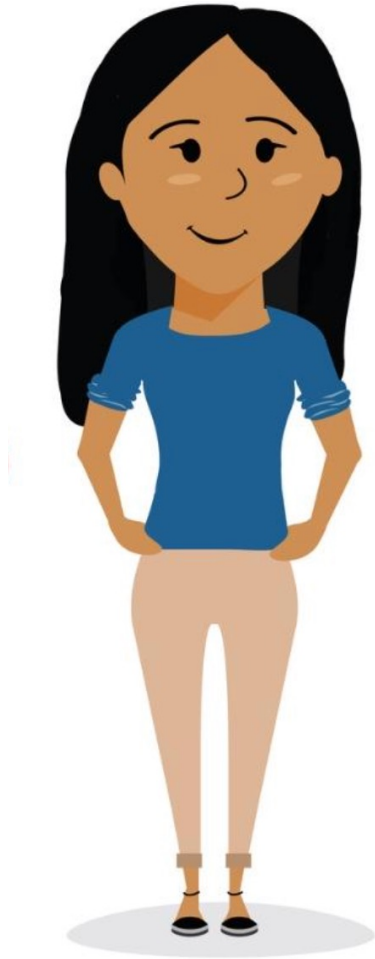
Green Testing:

AI-Driven Strategies for Sustainable Testing



Expo: **QA**
Madrid

About Me



- Samer Naqvi
- Test Architect/Solutions Architect
- Mentor
- Passionate about Women in Tech & Leadership
- I Love the three Cs:



Agenda

- Meet Dave
- What is Green Testing
- Dave's new friend
- Strategies to Green Testing
- Dave's Glow Up
- Q&A

Meet Dave



Dave is a QA tester.
He's awesome. But he has a secret...



Time-pressed
Always racing
against deadlines



Bug hunter
Drowning in test
cases



Overwhelmed
No time to
innovate

Dave's Carbon Confession



Test servers
running 24/7

Wasting energy when
idle



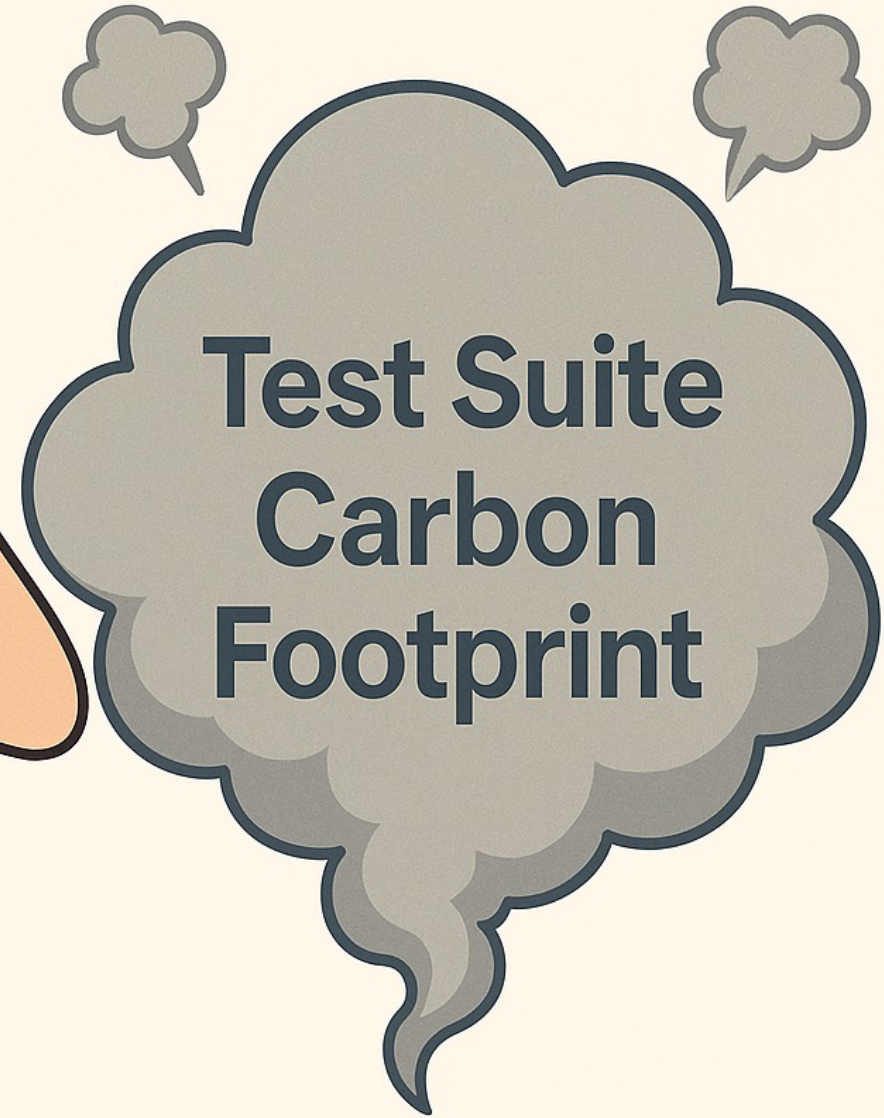
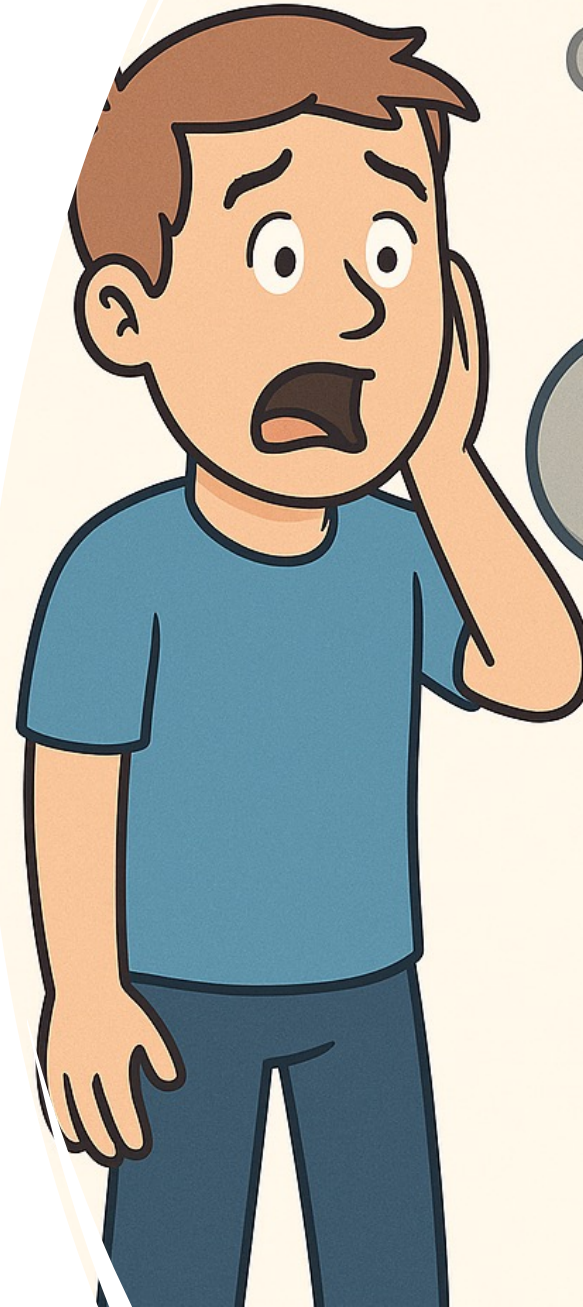
Redundant test
runs

Each failure triggers
complete rerun



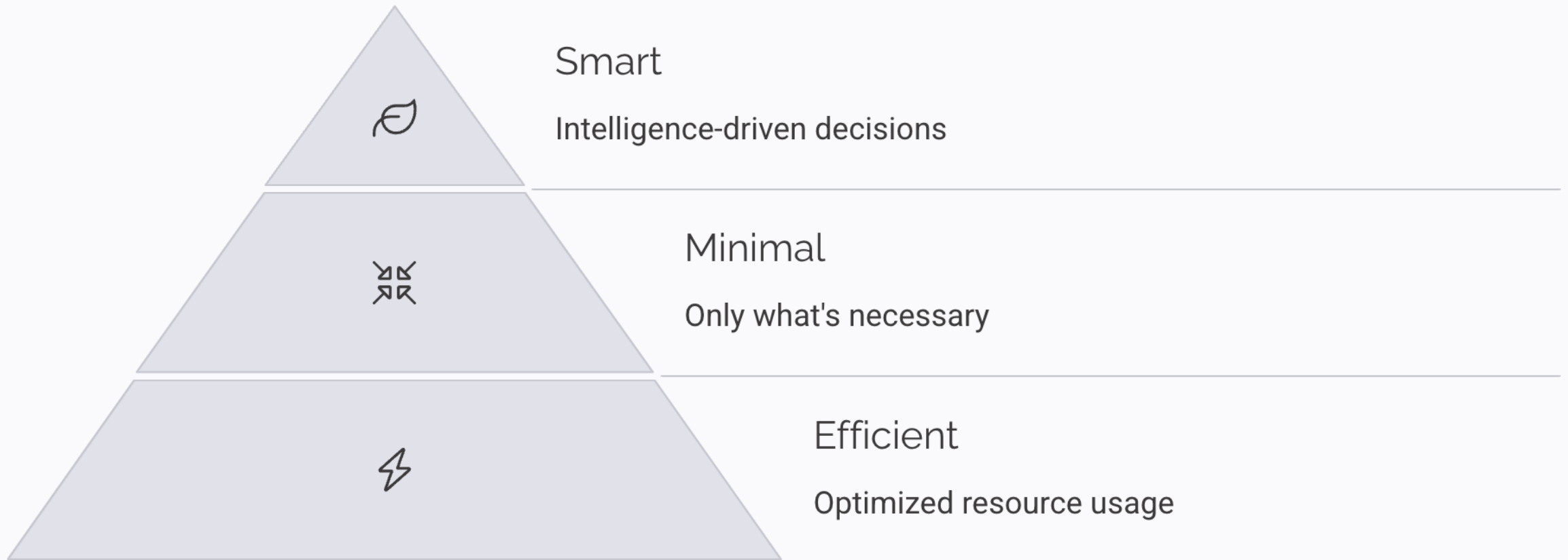
Over-provisioned environments

Using more resources than needed

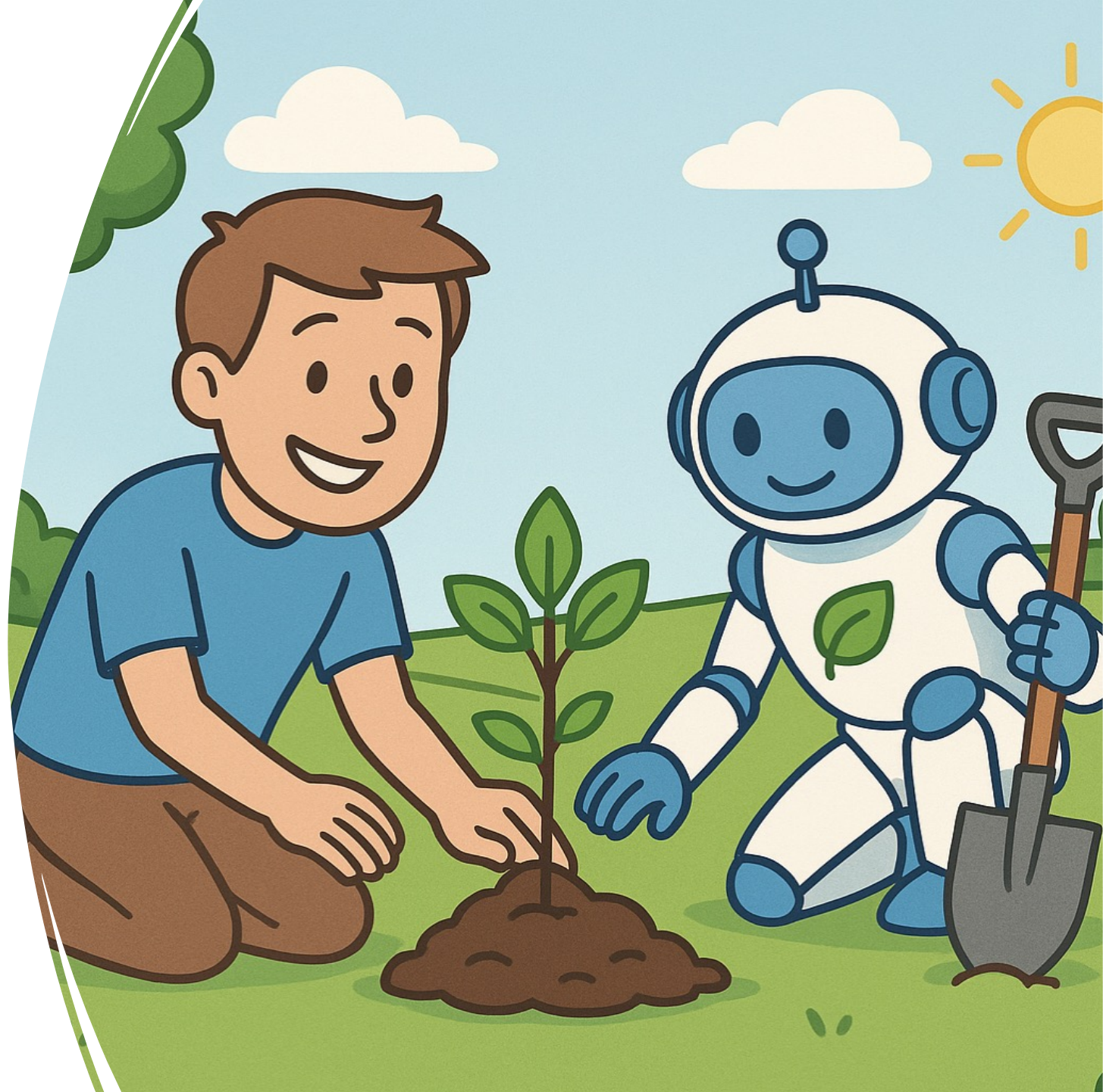


**Test Suite
Carbon
Footprint**

What is Green Testing?



Meet Dave's New Friend



Enter AI – Dave's New Buddy





Strategy 1 – Smarter Test Selection

Risk Analysis

AI identifies which tests matter most

Prioritization

Run high-impact tests first

Skip Redundancy

Eliminate tests with overlapping coverage

Strategy 2 – Test Data Optimization

Before AI

- Massive data copies
- Storage waste
- Slow test runs

With AI

- Smart synthetic data
- Generated on-demand
- Minimal storage needs

Strategy 3 – Infrastructure Efficiency

Dynamic Scaling

AI predicts test load needs

Scales down when not needed

Smart Scheduling

Runs tests during renewable energy peaks

Avoids high carbon intensity times

Resource Optimization

Right-sizes test environments

Eliminates idle resources



Strategy 4 – Predictive Flakiness Detection



Analysis

Reviews test history patterns



Detection

Flags potential flakiness before failure



Resolution

Suggests specific fixes



Verification

Confirms stability improvement



Strategy 5 – AI-Powered Static Analysis



Smart Code Reviews

AI tools like DeepCode scan your codebase to detect inefficiencies before testing begins.



Early Bug Detection

Catch potential issues during development rather than in resource-intensive test cycles.



Energy Optimization

AI suggests performance improvements that reduce computational load and energy consumption.



Carbon Reduction

Cleaner code means fewer tests needed, directly lowering your testing carbon footprint.

Tools You Can Explore



Launchable

Predictive test selection platform that learns which tests matter most for your code changes.



Testim

AI-powered test automation that reduces test flakiness and maintenance overhead.



AppliTools

Visual AI testing that eliminates redundant test scenarios and optimizes coverage.



Green Software Foundation

Resources and standards for measuring and improving software sustainability footprint.

Dave's Glow-Up

From Chaos to Calm

Dave's testing pipeline has transformed completely. It's now leaner, smarter, and significantly greener.

He's experiencing measurable benefits:

- 30% reduction in testing time
- 40% decrease in carbon emissions
- Greater confidence in test results
- More time for innovation, less for troubleshooting





Your Turn – Get Inspired

Talk to Your Team

Share these concepts with colleagues. Brainstorm where to begin.

Try One Idea

Start small. Even incremental changes create meaningful impact.

Lead by Example

Document your results. Inspire others with your success stories.

Be the sustainability champion your organization needs. The future of green testing starts with you.



Thank You! + Q&A

Let's Connect



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Thank you for attending

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