A4Q TESTING SUMMIT

Two Minds, One Mission
Pairing Exploratory Testing with a GenAI Agent

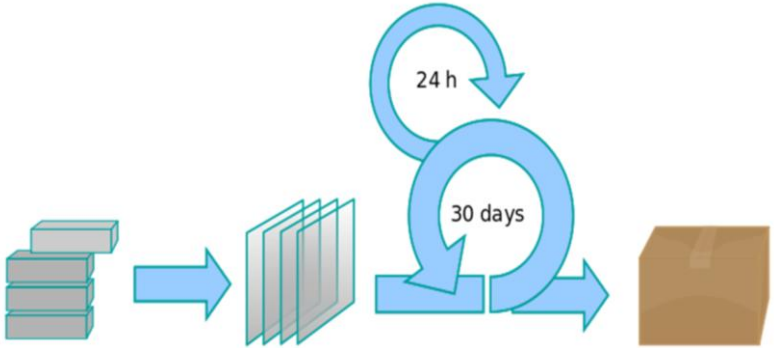
Tal Pe'er

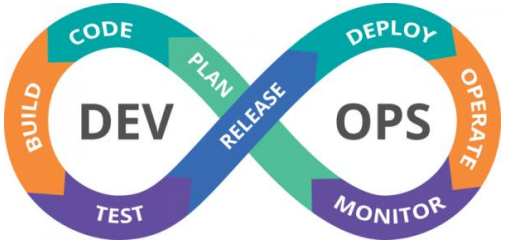
Who I Am

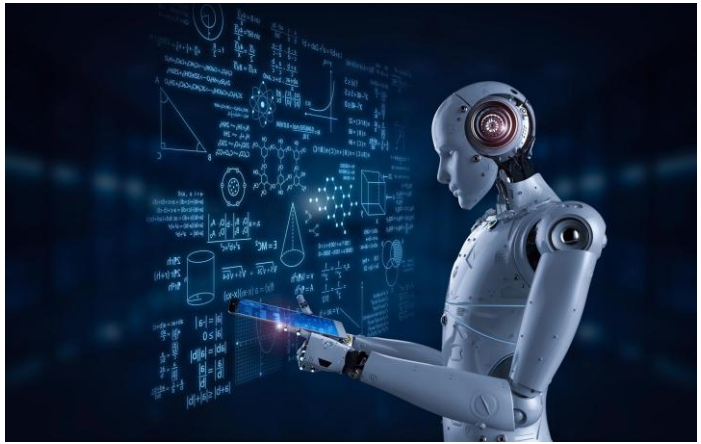
Tal Pe'er

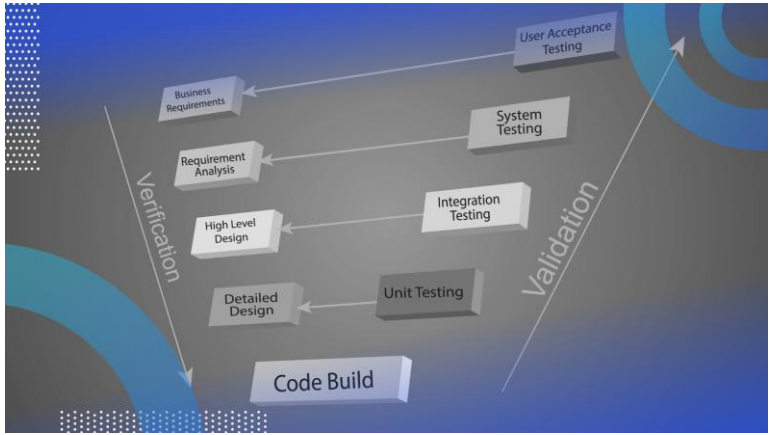
- 30 years in software testing
  - tester, test manager
- consultant and trainer in Grove Software Testing
- various roles in ISTQB®

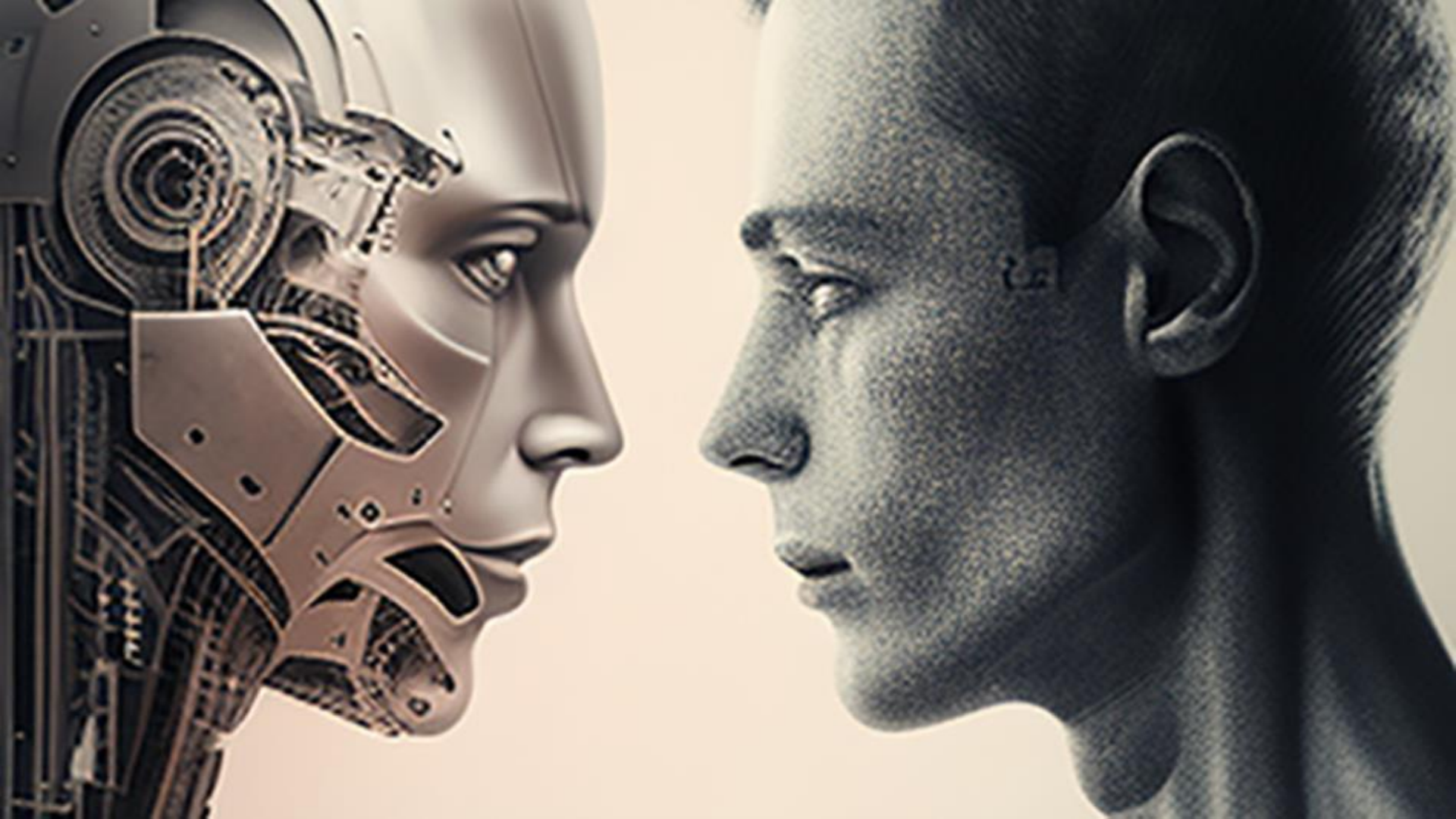
Modern Testing Landscape











Automation does not find bugs

TESTS DO

Automation Doesn't Find Bugs

Tests find bugs

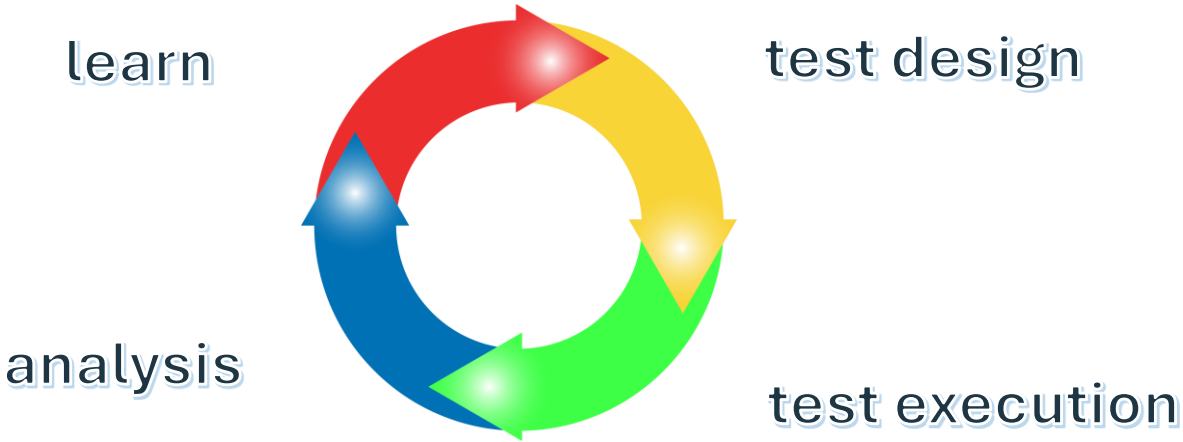
Automated tests	Manual Scripted	Exploratory	Fix Verification
9.3%	24.0%	58.2%	8.4%

Experiences of Test Automation, Ch 27, p 503, Ed Allen & Brian Newman

Exploratory Testing 101

James Bach: simultaneous learning, test design, and test execution

- no pre-designed test cases / scripts
- producing test ideas as a response to system's behaviour
- actively trying to find the 'cracks' in the software



Explore the system
(under test)
STAR TREK

Which AI agent to use?

Gemini

Claude

How do we split the work?

what a GenAI agent does?

- breadth of ideas
- rapid data generation
- structured notetaking
- assumption challenges

what a tester does?

- sets the charter and risk focus
- applies domain knowledge
- applies ethical judgement
- validate finding against oracles

Clear roles definitions

human driver; AI navigator

AI driver; human navigator

ping-pong pairing

shadow scribe

Designing effective sessions

- use charters to keep a structured but flexible session
  - a charter defines your mission statement
  - keeps human and AI aligned
- establish ethical guidelines
- set practical constraints and stop conditions
- keep the conversation professional
- use the AI agent in 3 phases
  - brainstorm before the session
  - navigator and scribe during the session
  - write reports after the session

Test charter example

Mission: Explore [feature/workflow] to discover risks related to [quality attributes].

Scope: [in-scope systems, integrations, data boundaries]

Out of Scope: [explicit exclusions]

Risks of Interest: [e.g., data loss, authorisation bypass, pricing errors]

Heuristics: [CRUD, RCRCRC, Goldilocks]

Oracles: [spec consistency, logs, contracts]

Timebox: [e.g., 45 minutes + 15 minutes debrief]

Evidence: [screens, HAR files, AI notes export]

Stop Condition: [N findings or timebox end]

Prompts

communicate clearly and with purpose
vague prompts will result in generic ideas and waste of time
prepare the AI agent for the session
start-of-the session prompt
mid-session refocus
challenge assumptions
AI agent functions as a scribe

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Prompts

- You are pairing with me as an exploratory testing navigator.
- Priorities: security, data integrity, workflow resilience.
- Product context: B2C e-commerce checkout with multiple coupon combinations and split payments.
- Boundaries: no production data; propose synthetic datasets only.
- Deliverables: provide 2–3 test ideas. For each, include input data, an oracle to check, and the risk the test targets.
- Keep responses concise (<=120 words) unless I say "expand".

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Prompts

Charter: Explore checkout with split payments to uncover risks in tax calculation and coupon combinations.

Known weak spots: tax region changes, payment authentication steps, and currency rounding issues.

Please propose:

1) 3 focused tests with concrete input data;

2) The likely oracles I can check quickly;

3) One alternative path I might be overlooking.

Format: Test / Data / Oracle / Risk.

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prepare the AI agent for the session

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start-of-the session prompt

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mid-session refocus

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challenge assumptions

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Prompts

We found: (a) rounding mismatch at currency conversion; (b) coupon applies twice after retrying.

Suggest the next 3 tests that maximize learning about these two defects.

Include a hypothesis (why it might fail) and what evidence to capture.

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Prompts

List hidden assumptions in your last suggestions and propose a variant that would invalidate each assumption

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Session snapshot

Tester: Context first. We're testing an e-commerce checkout with split payments and multiple coupon combinations. The latest release changed tax-rounding rules and added retry logic after payment authentication failures.

AI Agent: Understood. Likely risks: coupon state, rounding behaviour, and retry boundaries. I'll track findings and hypotheses as we proceed.

Tester: Yes. Charter is to explore interactions among coupons, currency conversion, and retries, specifically discount correctness and tax accuracy.

Tester: Test one. Two coupons, EUR→USD conversion, then force a payment retry.

AI Agent: Oracle suggestion: coupons should apply only once per checkout session.

Tester: Agreed. After the retry, the second coupon is reapplied. Discount exceeds the allowed limit.

AI Agent: Logging finding. Hypothesis: coupon state is not preserved across the retry boundary.

Tester: Possible, but I want evidence before we lock that in. Capture request IDs and before-and-after totals.

Pitfalls and how to avoid them

- AI hallucinations
- scope drift
- over-automation impulse
- bias anchoring
- documentation overload

I’m convinced. How to start?

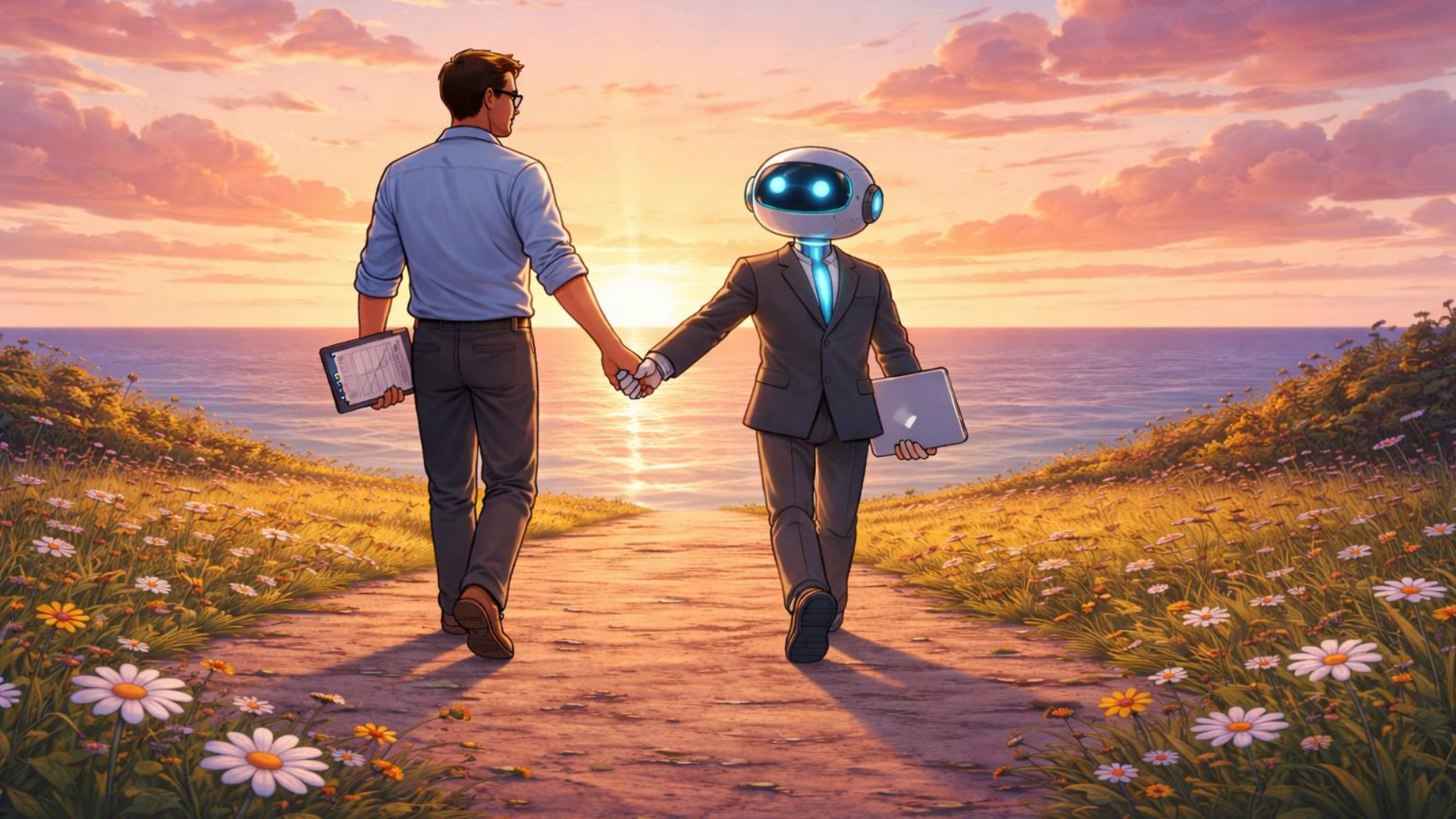
- Make some tests!
- Start small and learn from the GenAI responses
- Note the prompts that work

  … and those that don’t work
- For professionals:

  define agents in markdown files

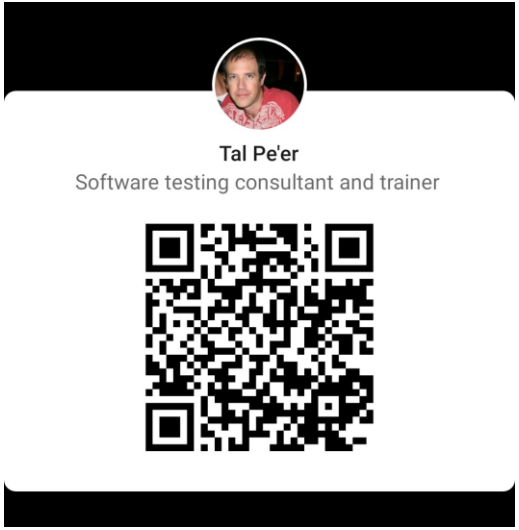
Conclusion

- human ingenuity is the main ingredient for exploratory testing
- exploratory testing thrives on human qualities
  - curiosity
  - adaptability
  - risk-based thinking
- GenAI agents amplify the human tester
  - accelerates ideas generation
  - broadens coverage
  - improves documentation quality



Contact me

Want to know more?
Please contact me at:
tal@grove.co.uk



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