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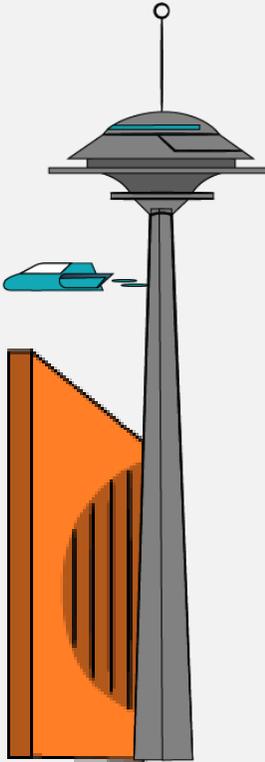
Integrating Generative AI
for Quality Engineering into
the Software Lifecycle



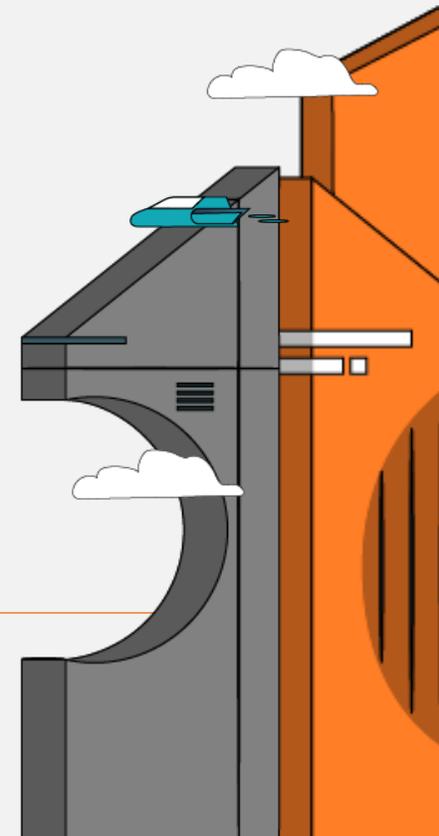
THE FUTURE IS NOW
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Agenda

- Introduction
- Productivity vs Quality
- Generative AI for Quality Engineering
- Proposed approach
- Case Studies
- Demo



Introduction



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Integrating Generative AI for Quality Engineering into the Software Lifecycle

Productivity Vs Quality

- Defining productivity
- Quantifying Productivity in the Software Lifecycle:
 - Engineering culture
 - Work-life balance
 - Team dynamics
 - Quality and User satisfaction
 - Automation and tooling



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Metrics to Measure Productivity

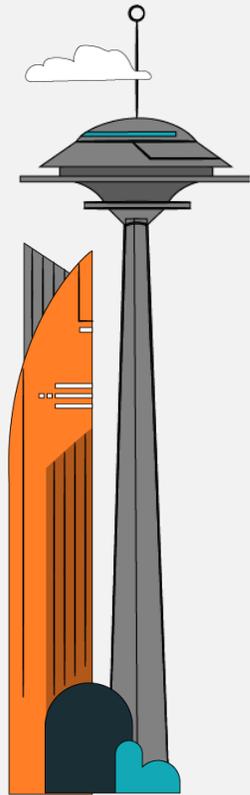
It is important to take a multi-tiered view of measuring productivity that includes measuring at the individual, team, and value stream levels:

Individual metrics:

- Test Development Velocity
- Test Result Analysis Effort

Team metrics:

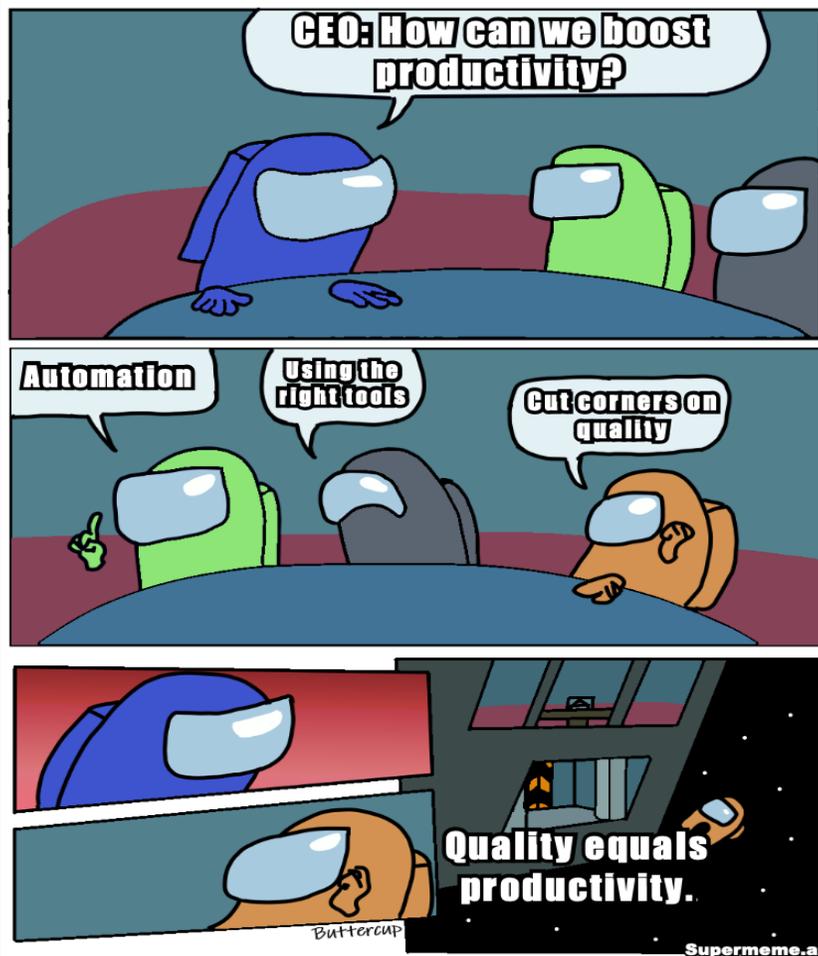
- Test Coverage
- Test Effectiveness
- Test Result Analysis Effort
- Test Automation Effort
- Defect Leakage



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Quality equals productivity



- Cutting corners on quality can cause unpredictable issues and as result rework
- Mitigating risks by assuming a direct relationship between quality and productivity

Q = P as a mantra

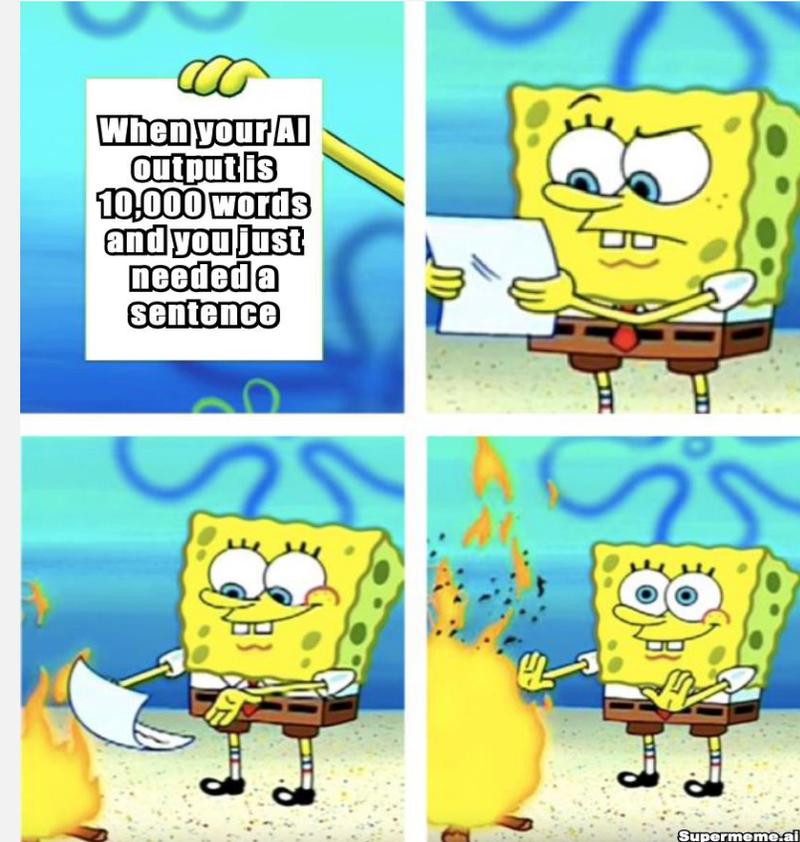
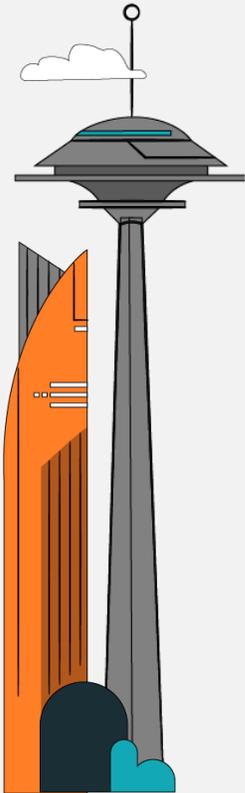
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Generative AI for Quality Engineering

- Challenges:

- Security and Intellectual Property Ownership
- Workforce Upskilling
- Content Management – streamlined review practices in place
- Validation and Verification – robust testing practices
- Productivity Measurement



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Use Cases

300 practitioners, 1200 use cases

- **Test Case Design and Development**

- ✓ Analyzing requirements and generating tests
- ✓ Generating user acceptance tests, steps, feature files
- ✓ Generating tests based on the source code and API's

- **Test Code Generation and Maintenance**

- ✓ Generating unit, integration and system level test scripts for functional and non-functional testing
- ✓ Migrating existing test scripts from one language, platform to another
- ✓ Updating and maintaining the test scripts

- **Test Case Maintenance and Management**

- ✓ Identify duplicates
- ✓ Converting test cases into different TMS formats
- ✓ Simplify tests to reduce the number of steps

- **Test Planning, Execution and Coverage Analysis**

- ✓ Generating test strategies and plans
- ✓ Prioritizing, scheduling, or optimizing tests for execution
- ✓ Identifying gaps in test coverage

- **Test Result Analysis and Defect Management**

- ✓ Summarizing result of bug reports
- ✓ Identifying possible root cause for failures
- ✓ Triage including severity assignment



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Proposed Approach

To ensure sustainable integration it is essential to follow a structured approach that incorporates secure access to AI models, solid engineering practices, seamless user experience, content management, and collaborative tooling:

- **Secure Access** to Enterprise-Ready Generative AI Models
 - Proxy implementation
 - [AI DIAL](#) - Deterministic Integrator of Applications and LLMs
- Building on a Foundation of **Engineering Excellence**

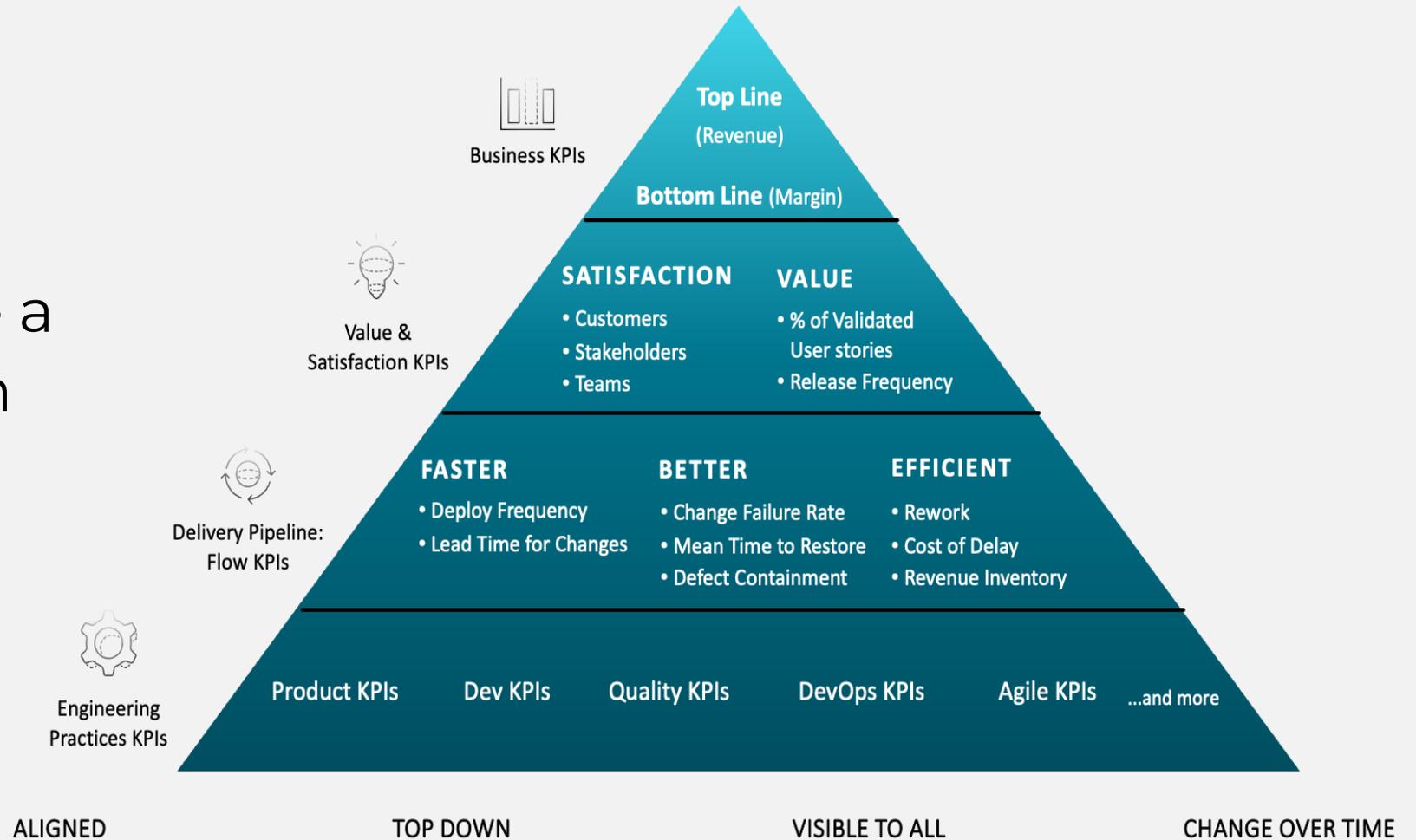


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Engineering Excellence (KPI) Pyramid

To promote a KPI-driven culture

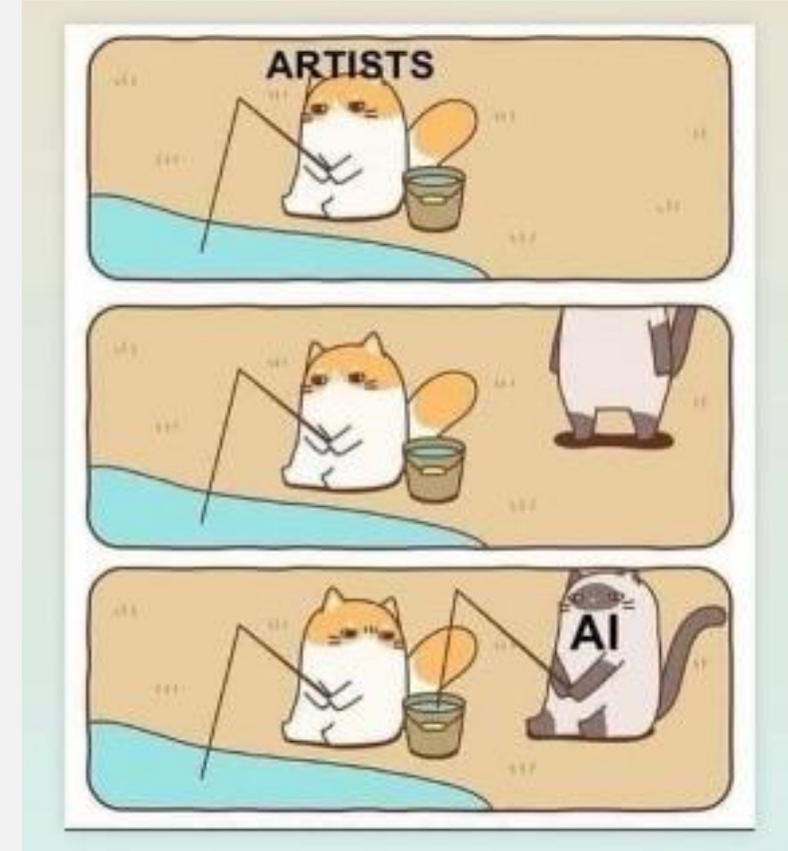
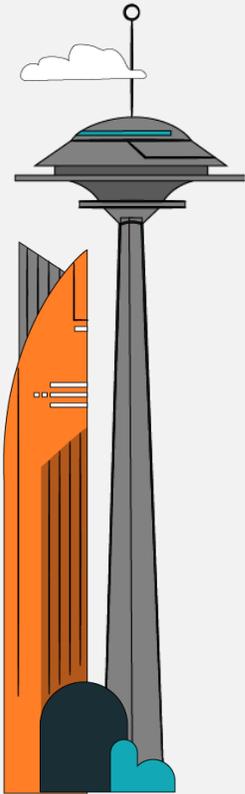


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Proposed Approach

- **Seamless Integration** into Existing Tools and Workflows
 - AI Jeannie ([JIRA Plugin](#))
 - Alita Code ([IDE Plugin](#))
- Supporting **Content Management** and Validation
 - Review pipelines
 - Building connectors
 - Integrate content management and validation
- Facilitating **Collaboration** and **Experimentation**
 - Tools to support real-time collaboration
 - Private spaces for experiments to foster innovation



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Bringing it All Together

Figure above contains a visual of the approach and illustrates the kind of bridge ELITEA provides to teams as an AI collaboration platform



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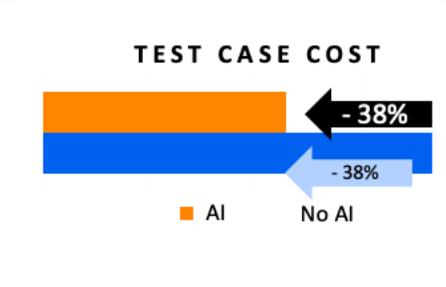
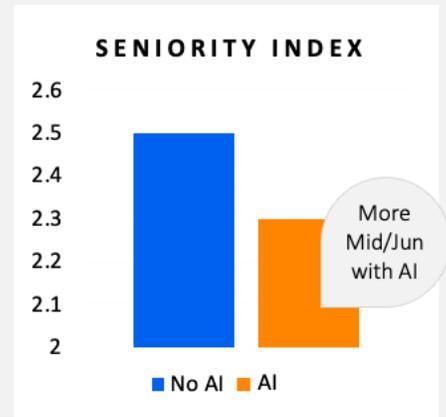
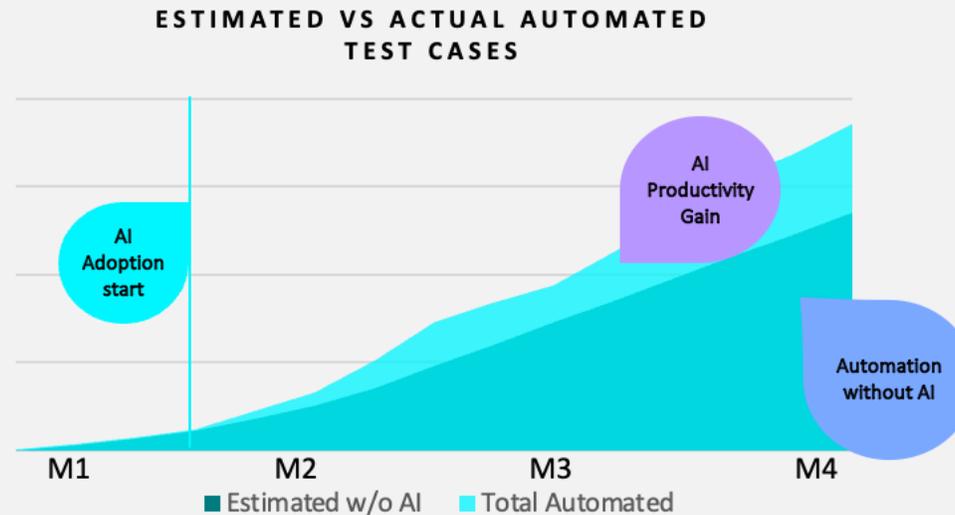
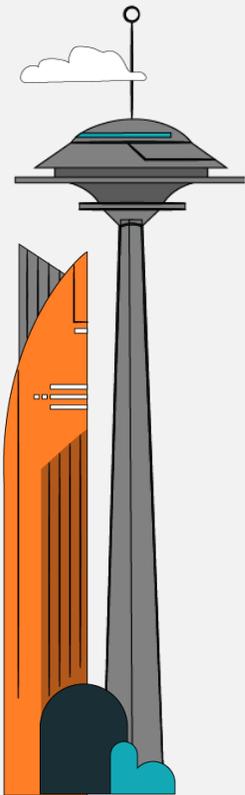
Case Studies

Reducing Testing Debt in Library Services with Gen AI

The Project Goal to automate a large number of end-to-end, manual UI tests within a 4-month period

Results:

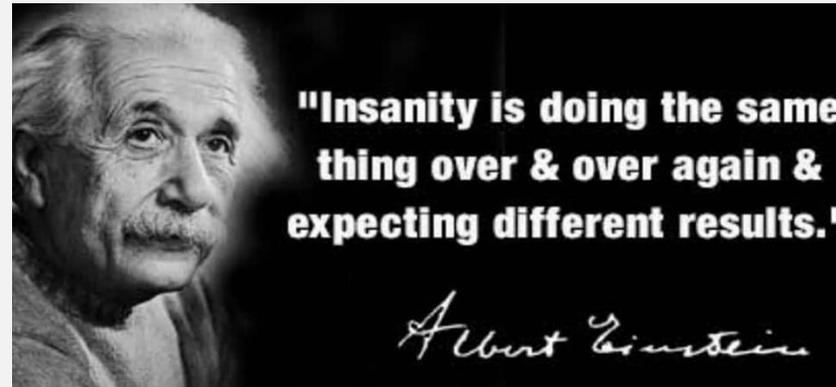
- 1000+ end-to-end UI tests were automated
- + 15% in the test development velocity
- 20% time savings
- ~ 40% reduction in implementation costs



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Demo

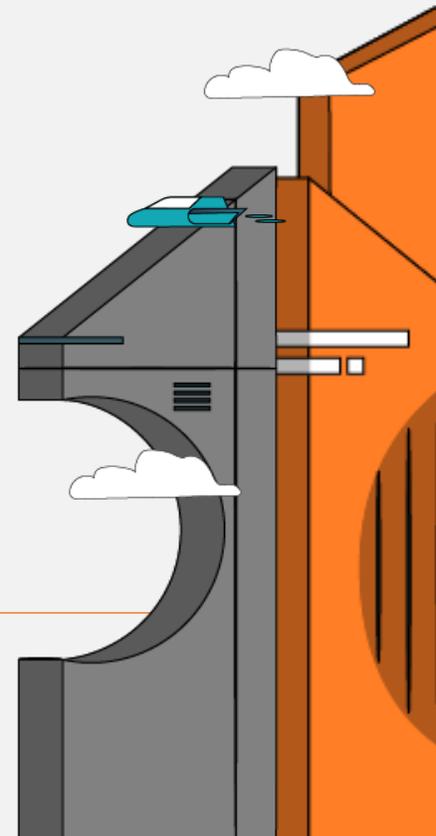


***MACHINE LEARNING:**



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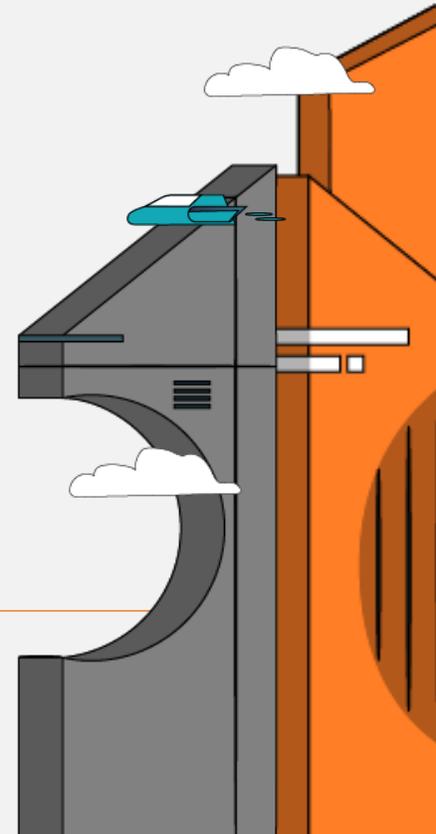
Conclusion

When the paper you wrote by yourself comes back as 89% AI generated by an AI detector



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**THANK
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