



# **Waterfall to Agile Onward to AI Driven Test Automation**

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- **Domains: Banking, FinTech, Retail**
- **Specialization: Test Automation Framework Design**

# Outline



01

**History of  
Test  
Automation**



02

**Challenges in  
Test  
Automation**



03

**AI Powered  
Test  
Automation**

# History of Test Automation

1970-1980

1980-1990

1990-2000

2000-2010

2010-2020

2020 onwards

Manual  
Testing

Bulky  
Automation  
Tools

Record & Play  
back tools

Robust  
Automation  
Tools

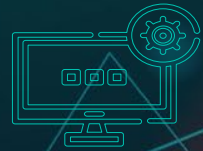
DevOps,  
CI/CD

AI,  
Autonomous  
Testing

Waterfall

Early Agile

Agile



# Challenges in Test Automation

- **Changing Requirements**
- **Insufficient Time to Ensure Quality**
- **Maintenance Overhead**
- **Prediction of User Behaviour**
- **Test Data Management**
- **Result Analysis and Defect Prediction**



# AI in Test Automation

- Use-Cases
- AI Powered Tools
- Case study : GitHub Copilot
- AI Adoption : Expectation vs Reality
- Strategies for AI Implementation

AI models designed to generate new content such as text, images, music and code based on patterns and data they have been trained on.

Gen AI

GenAI models trained on vast amount of text data to understand and generate natural language.  
Popular LLMs: GPT, Gemini, Llama 3

LLMs (Large Language Models)

Supplying specific cues to guide the AI system in generating novel output

Prompting

# GenAI Use-Cases

## TEST GENERATION & MANAGEMENT

Test Case Creation

Coding Assistance

Test Data Generation



## RESULT ANALYSIS & DEFECT PREDICTION

Bug Management

Report Analysis

## TEST EXECUTION & MAINTENANCE

Dynamic Test Execution

Self-Healing Tests

Visual Testing

# AI Powered Tools





# GitHub Copilot – AI Pair Programmer

## USE-CASES



### Code Completion

Context-aware suggestions to complete lines or blocks of code



### Answering coding questions

Integrated with popular IDEs, have chat prompt box

### Fix Issues

Propose a fix for problems in the selected code

### Documentation and Comments

Generate meaningful doc strings and comments for functions and classes

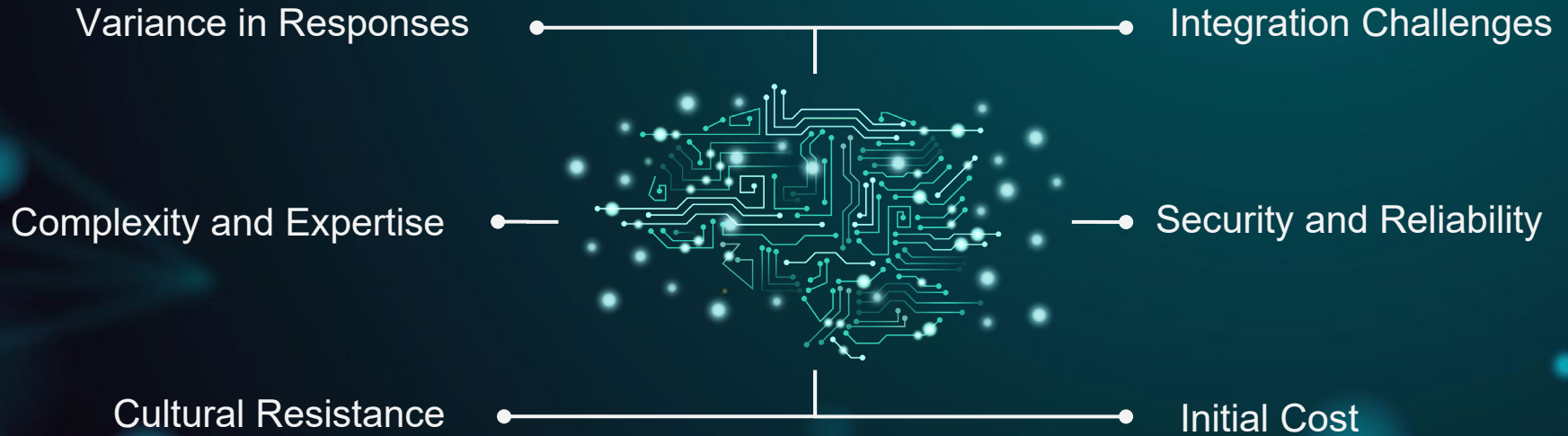


Describe the Goal

Be Flexible

Provide Examples

# AI Adoption - Expectation vs. Reality



# Strategies for AI Implementation



# Embracing the Change



**AI is your co-pilot. Not auto-pilot.**

Do you have any questions?

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# THANK YOU



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