

expo IQA 24

MADRID
May 28th,
29th, 30th
2024



expoqa.com

Revolutionising QA with AI



**From Manual to
Intelligent Automation**

DIEGO D'ONOFRIO

Autonomous Agents (AA)

Example of usage

Automated Test Management

Automatically reacts to code changes, designs, codes, and integrates test cases into the CI/CD pipeline, in real time, without any human intervention.

Timeline of Relevant LLM Events for QA

The first Generative Pre-trained Transformer Large Language Model (LLM)

Attention Is All You Need



Jun 2017



Jun 2018



ISO/IEC/IEEE 24765:2017(en); ISTQB; etc.

***Systems and software engineering — Systems and software assurance —
Part 1: Concepts and vocabulary, 3.4.4]***

cf. failure, defect

3.1441

error

- 1. human action that produces an incorrect result**
- 2. difference between a computed, observed, or measured value or condition and the true, specified, or theoretically correct value or condition.**
- 3. erroneous state of the system**

Some of the Key QA Advancements Enabled by Large Language Models (LLMs)

Automated Reasoning: Machines can now analyse test cases and defects, identify patterns, and suggest improvements, enhancing the efficiency and effectiveness of the QA process

Test Data Generation: Can generate diverse and varied test data automatically, covering a wide range of scenarios and edge cases

Test Case Generation: Language models can automatically generate test cases, covering scenarios and edge cases that humans might overlook

Specialized Consultation Chats: Their extensive knowledge of QA core competencies, can power consultation chats that provide expert advice

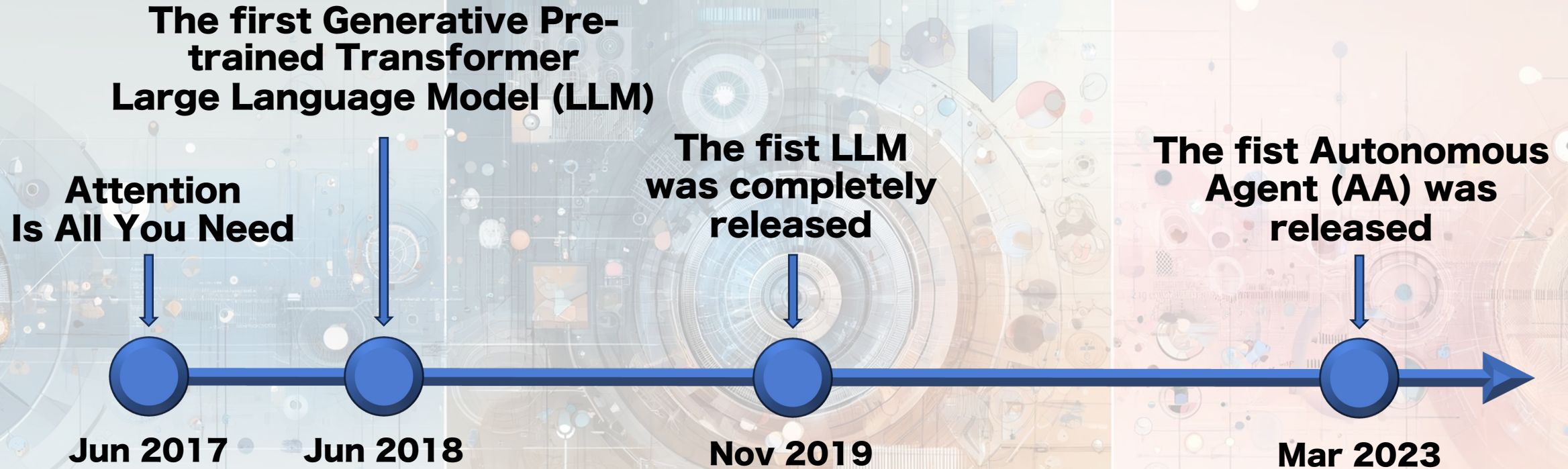
Challenges of Using AI Services for Test Case Generation

Models as a service limit our ability to fully leverage them for test case generation

Test specifications often requires sensitive data, such as details of unreleased products

Future versions of AI models will be trained on our data, prioritizing important information

Timeline of Relevant LLM Events for QA



Autonomous Agents



Self-organized systems that can execute high-level instructions and handle unexpected situations without human intervention. They make decisions and perform tasks based on initial high-level instructions and data inputs.

Autonomous Agents (AA)

are the next standard in test automation

- **Self-organized system**
- **Minimum instructions**
- **Perform large tasks**
- **Attempting multiple approaches**

Autonomous Agents (AA)

Example of usage

Automated Test Management

Automatically reacts to code changes, designs, codes, and integrates test cases into the CI/CD pipeline, in real time, without any human intervention.

Automated Test Management

Pros

Integrate with development team management systems and documentation practices

Can request assistance when they determine that the objective cannot be achieved

Adapt the testing approaches to every development pipeline or environment

Evaluate and adjust testing approaches, adding test cases based on learned results

Automated Test Management Challenges

Requires in-house development

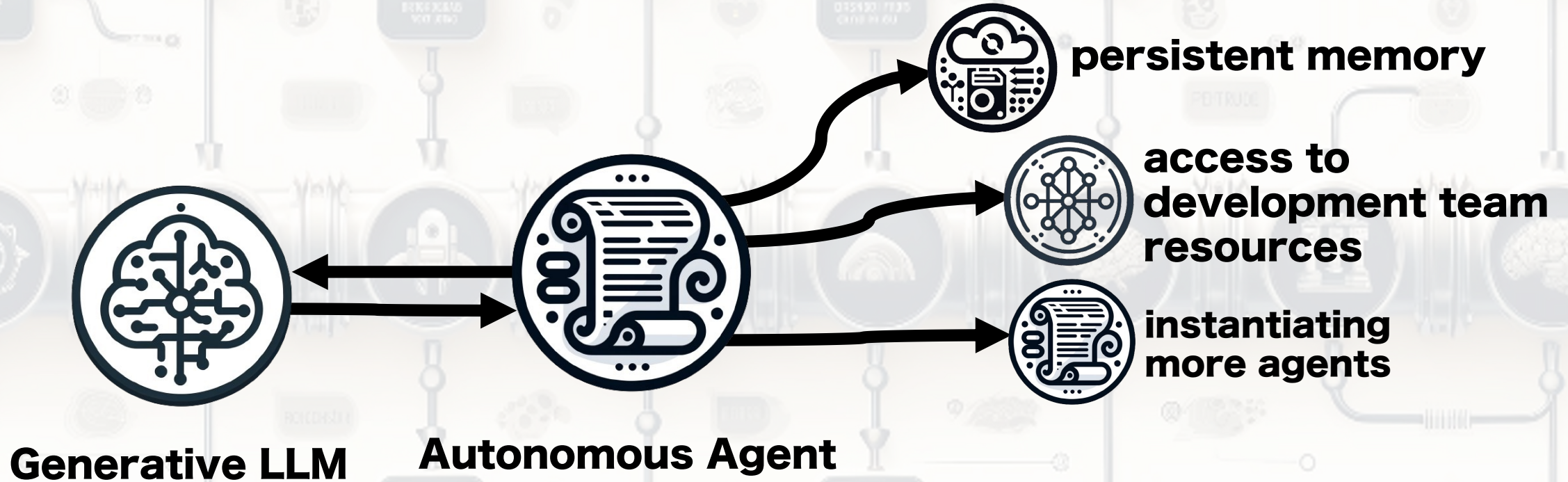
Requires onboarding within the development team

Requires configuring team processes and information sharing mechanisms

Requires understanding the project's functionality based on available documentation

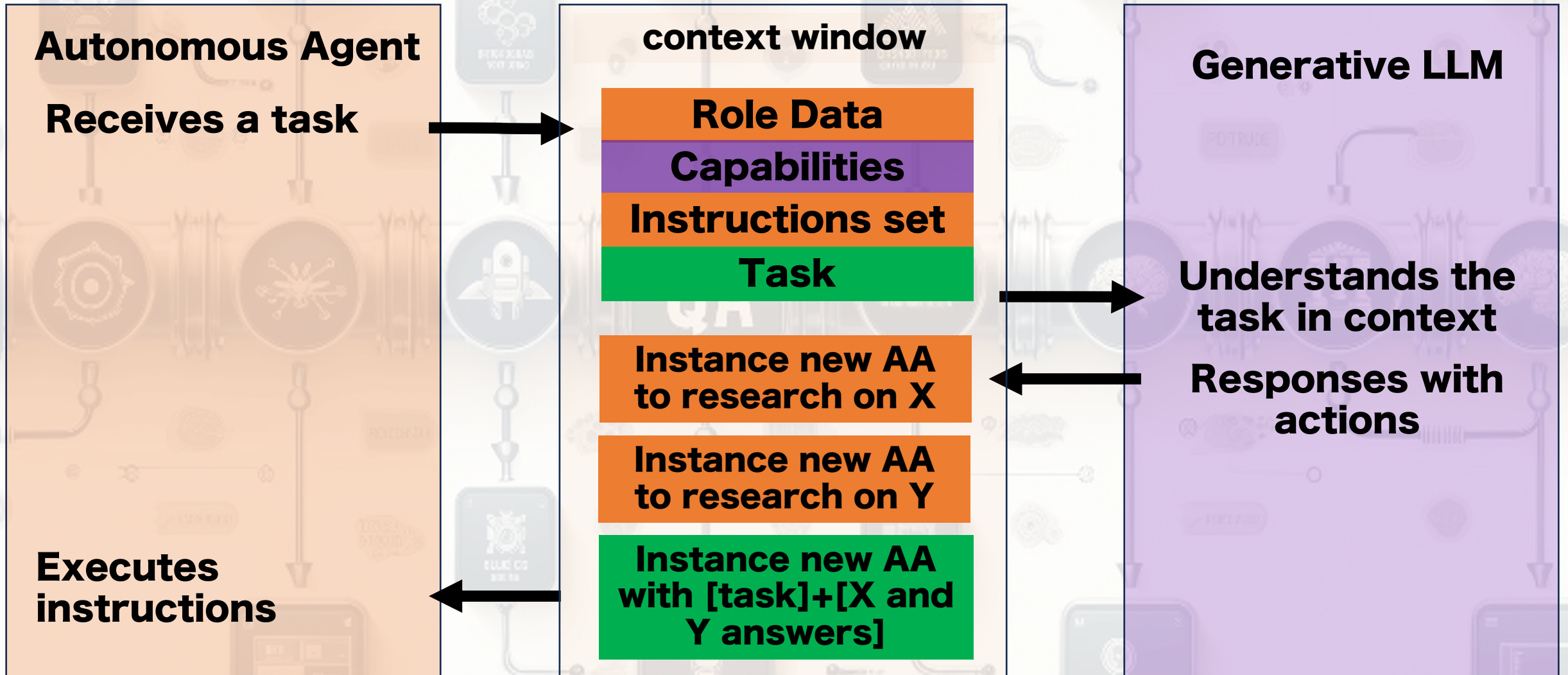
Automated Test Management

Under the hood

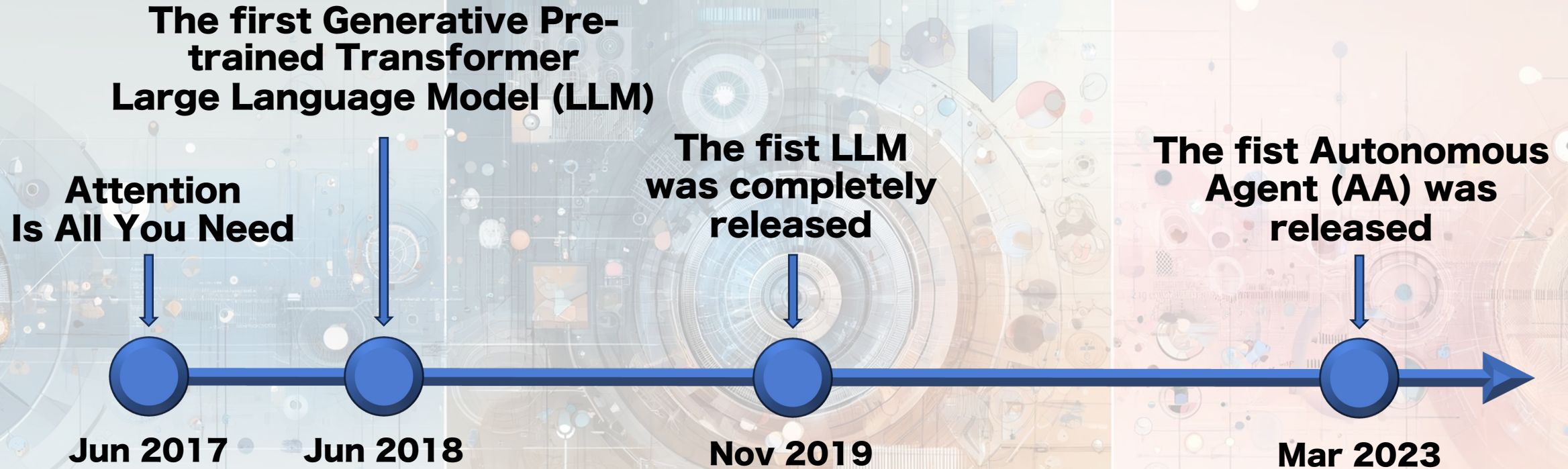


Automated Test Management

Under the hood



Timeline of Relevant LLM Events for QA



Predictions of Relevant AI Events for QA

Claude 3 released new industry benchmarks across a wide range of cognitive tasks



Mar 2024

Llama 3 released Best open LLM to date



Apr 2024

You are here (Expo QA)



May 2024

According to Elon Musk Prediction AI will Surpass Human Intelligence



2026



Automated Test Management

How to start?

Setting up a team to develop a Pilot

Don't invest too much developing with current LLMs architecture/technology

Stay tuned on LLMs news

¿Questions?



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Thank you for attending

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