

# AI4T – Advanced Intelligence for Testing

Research becomes reality

# A big step towards a fully automated test life cycle

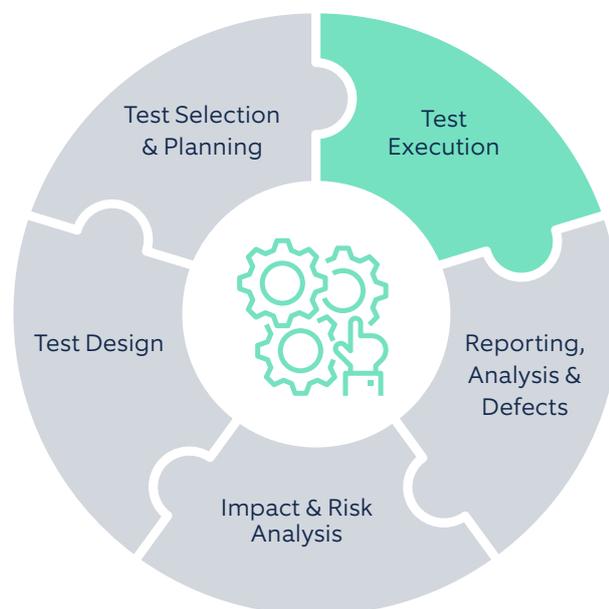
To keep up with today's fast-paced software development world, automation is essential to provide rapid feedback on software quality. One of the key drivers for businesses to succeed is the need for faster time to market and lean quality assurance. Also, processes throughout the entire test life cycle must be accelerated through advanced intelligent automation.

We move beyond automated test execution by making QA-related processes more comprehensive, scalable, and faster. With AI4T, we have developed groundbreaking approaches that will transcend your testing ecosystem to new heights.

Although 72% of the companies are now automating their test execution, all the other steps of the test life cycle still remain manual.

With AI4T, your company will move a big step towards a fully automated test life cycle!

-  Automated
-  Not yet automated



## AI4T and its benefits

Funded by the Austria Research Promotion Agency (FFG), our team of automation and AI experts did extensive research and work. The result? Intelligent approaches and tangible, ready-to-start components, proven across large-scale customer data and open source projects with these benefits:

- Maximize automation in all testing activities to reduce boring and repetitive tasks far beyond test execution only
- Dramatically reduced manual effort in the areas of test automation maintenance, refactoring, result analysis, and others
- Shorter test cycles without impacting quality

# Our Service Offering

We offer a 5-step approach that lays the foundation for a fully automated test life cycle.

01



## Tease

*(1 hour: Presentation & Demo)*

- We explain about our vision of intelligent test automation.
- We provide insights into our research work and outcomes.
- We discuss and share how your organization can benefit.

02



## Inspire

*(1 day: Workshop)*

- We do a deep dive into your technology, processes, and challenges.
- We brainstorm ideas to leverage our experience and customize it to suit your requirements.
- We prioritize the ideas to maximize your business value.
- We map the ideas to our components and research work
- We create a plan and roadmap on how to kickstart the project.

03



## Prove

*(1-2 weeks: Proof of concept)*

- Based on your use case and data, we implement a proof of concept (POC) for you, and with you.
- Analysis of the POC provides insights and learnings, and planning of next steps.
- The shared data is protected with stringent security.

04



## Build

*(1-2 months: Production-ready implementation)*

- We extend the POC to work with the full range of your use cases and data.
- We build a robust machine-learning model, created specifically for your data.
- We support to integrate the component(s) into your tooling, pipelines, & automation frameworks.
- The intellectual property and the code will belong completely to you.

05



## Shape

*(>1 month: Tuned models and extended application)*

- We improve the performance of the machine learning algorithms.
- We ensure that new insights and new data are dynamically integrated.
- We provide consultancy for your projects on how to start using it.
- The model will be improve continuously.

## Why Nagarro?

16+

years of experience in  
test automation

20+

years of services in  
testing

1200+

QA Engineers

700+

projects

150+

applications using  
test automation  
framework

## Case Study 1: Smart Test Selection



Has your number of automated test cases grown so much, that it takes way too long till all the tests are completed?

- Our approach selects a subset of test cases so that if a specific subset succeeds, there is most likely no error in the remaining test cases.
- The main benefit is a significant reduction in test execution time (e.g. from 8 hours to 1 hour).

## Case Study 3: Automatic Fail Analysis



Do you have to check hundreds of failed test cases every day before you know what the real problems are?

- Our system supports your engineers by identifying the source of the error, such as, by clustering the log files into error categories.
- The main benefit is the significant time reduction in finding the root cause of an error (e.g. from 5 min to 1 min per problem).

## Case Study 2: Self-healing Test Automation



Do you face huge maintenance efforts to keep your tests up to date and functional after code changes?

- Our approach perceives that it is not operating correctly and without human intervention, makes the necessary adjustments to restore itself to normal operation.
- The main benefit is the significant reduction in service time (e.g. from 15 min to 1 sec per maintained test case).

## Case Study 4: Smart Refactoring



Do you have a weak spot, an old system and legacy code that nobody dares to touch?

- Our approach performs refactoring of source code in a human-centric, semi-automatic way with the guidance of a machine learning algorithm based on the knowledge of thousands of software engineers.
- The main benefit is cleaner source code which is significantly easier to maintain.

**Want to make your test automation more intelligent with AI4T?**

Reach out to us: [aqt@nagarro.com](mailto:aqt@nagarro.com)

### About Nagarro

In a changing and evolving world, challenges are ever more unique and complex. Nagarro helps to transform, adapt, and build new ways into the future through a forward thinking, agile and caring mindset. We excel at digital product engineering and deliver on our promise of thinking breakthroughs. Today, we are 8,400 experts across 25 countries, forming a Nation of Nagarrians, ready to help our customers succeed. [www.nagarro.com](http://www.nagarro.com)