

Kinetic AI.QA

Automated quality assurance testing with AI-powered cobots and next-gen foundation models

Overview

Humanlike automated QA capabilities — even where traditional automation fails

Kinetic AI.QA is an AI- and robotics-powered platform that transforms device testing by seamlessly fintegrating digital and physical actionsenabling faster, smarter and more reliable quality assurance.

The platform combines best-of-breed cobots, customized foundation models and simulation-first workflows to lenhance the benefits andexpand the possibilities of QA automation. It supports touch, motion, pressure and ergonomic testing across consumer electronics, XR/AR devices, office equipment and healthcare IoT.



Benefits

Improved time to market

Eliminate manual testing bottlenecks to accelerate product launches

Enhanced test coverage and quality

Ensure total consistency of steps in each test to gain more accurate test results

Optimized costs

Lower operational costs by minimizing errors and improving resource allocation while unlocking continuous operation for increased throughput

Scalability for diverse devices

Speed up validation for multiple SKUs with simulation workflows

Services

Comprehensive QA robotics services from platform design to autonomous test execution and analytics

• Platform selection

- Task-to-platform matching
- Custom hardware integration
- Simulation-first validation
- Control software tuning
- Rapid deployment scaling

• CAD and prototyping

- Custom end-effectors
- 3D printing / CNC
- Modular test rigs
- Electrical prototyping
- Rapid fixture design

• AI-based learning

- Imitation learning
- Exoskeleton demonstrations
- Reinforcement learning in simulation
- Sim-to-real transfer
- Domain randomization

• Cobots

- UI interaction testing
- Mobile QA cobots
- EOL hardware testing
- Multimodal validation
- Safe human collaboration

• Data analytics

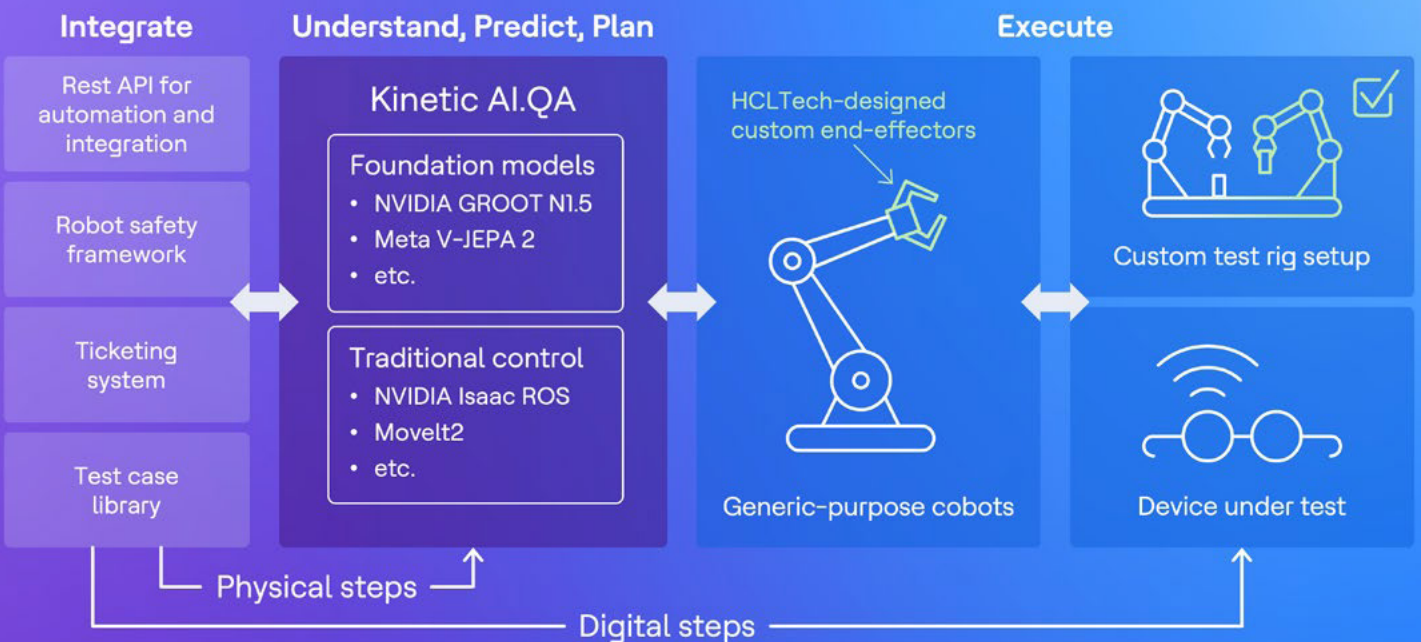
- Real-time data logging
- Test dashboards
- ML-based defect insights
- Feedback to control
- Audit-ready reports

Features

Kinetic AI.QA provides end-to-end quality assurance automation, integrating digital and physical steps, and relying on expert demonstrations, not rule-based coding, to ensure uncompromising optimization for every use case.

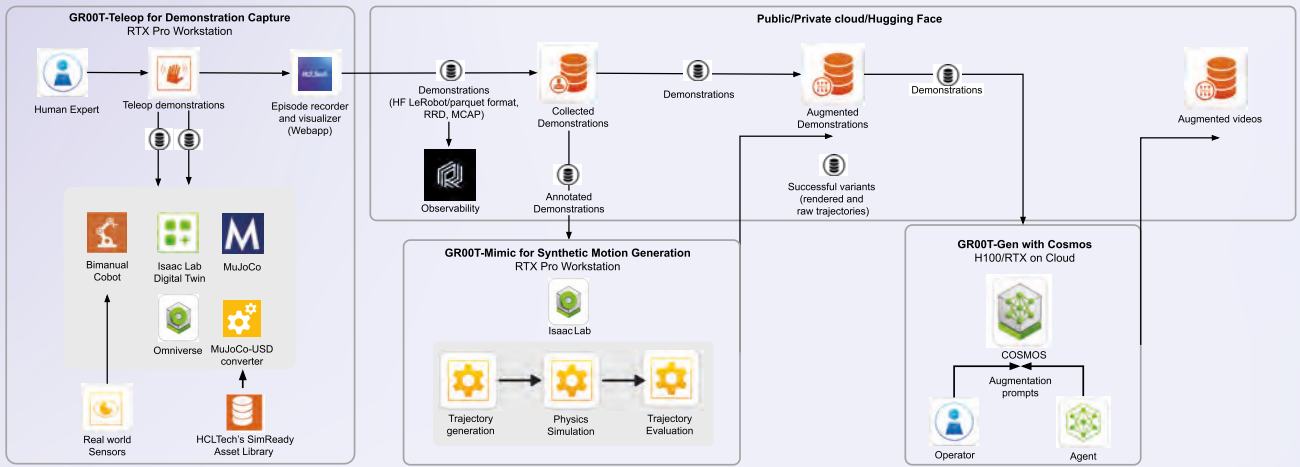
- **Foundation models as brain**
Powered by vision-language-action models and imitation learning from expert testers
- **Multimodal sensing**
Touch, force, motion and haptics for high-fidelity test coverage
- **Custom end-effectors**
HCLTech-designed tools for unique product ergonomics and interactions
- **Simulation-first**
NVIDIA Omniverse-based digital twins for stress, durability and usability testing
- **Integration-ready**
APIs with CI/CD, ticketing and test case libraries
- **Robot safety framework**
Built-in compliance and safe human-robot collaboration solutions

Process Flow



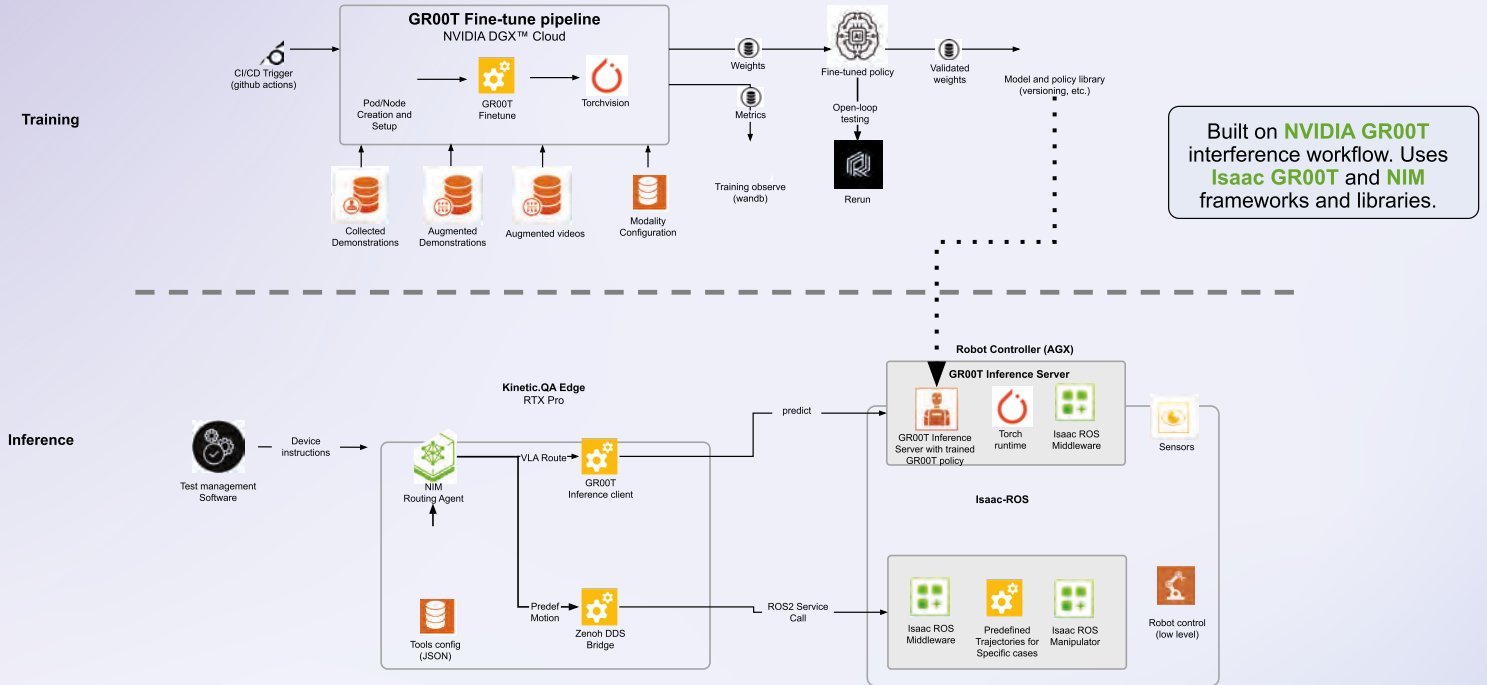
Architecture Diagram

Process Framework



Built on **NVIDIA GR00T Mimic** blueprint. Uses **Omniverse, Isaac Lab, Cosmos** and **GR00T** framework.

Training and Inference



Built on **NVIDIA GR00T** inference workflow. Uses **Isaac GR00T** and **NIM** frameworks and libraries.

HCLTech's Kinetic AI practice delivers industry-focused solutions leveraging the latest advancements in embodied, Agentic AI. Our solutions combine wide-ranging technology expertise, from data science and engineering to robotics, with deep knowledge of the most demanding domains to help you define the new era of automation-driven efficiency.

To know more, get in touch with NVIDIAEcosystem@hcltech.com

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