CANUM.AI

Case Study

RPA & IT Operations Automation Platform Development

The Client

The Client is a pioneer in intelligent automation, providing AI-as-a-Service to global enterprises. Their mission is to bridge the gap in RPA lifecycles—specifically the "weakest link": post-implementation production support.

The Challenge

As organizations scale their robotic workforces (UiPath, Automation Anywhere, BluePrism), the overhead of monitoring, maintenance, and manual remediation grows exponentially. Our client required a robust, scalable backend capable of:

- **Intelligent Reasoning:** Moving beyond simple scripts to AI-driven problem resolution.
- **Data Visibility:** Collecting and processing massive streams of telemetry from disparate bots and endpoints.
- **Seamless Remediation:** Executing complex fix-actions across diverse IT environments without human intervention.

Our Approach: Architecting the Brain Behind the Automation

We partnered with the client product management team to lead the product development and backend engineering of the platform. Our work focused on integrating high-level AI reasoning with a rock-solid infrastructure. This was a multi-year engagement with a team of 12-15 engineers

Our Contribution: Full-Stack Backend Engineering & Architecture

1. AI Knowledge Modelling (The Reasoning Engine)

We spearheaded the backend **Knowledge Graph modelling**. Utilizing **Arago HIRO AI platform**, we mapped complex IT and RPA workflows into a semantic data structure, enabling the platform to perform "Machine Reasoning" and automate root-cause analysis for up to 99% of tasks.

2. Full-Stack Data & Endpoint Engineering

To feed the AI engine, we built a comprehensive data pipeline:

- **ELK Stack Integration:** Designed the complete data collection and processing architecture using Elasticsearch, Logstash, and Kibana.
- **Custom Endpoint Agents:** Developed lightweight data collectors to gather real-time telemetry from bot environments and IT service desks.

3. Automated Remediation & Playbooks

We developed a library of **action-response playbooks** for automated remediation, ensuring that when a bot fails or an IT issue arises, the system resolves it instantly using Python, PowerShell, and Ansible scripts.

4. Managed DevSecOps & Cloud Operations

We ensured the platform was enterprise-ready and provided the following solutions:

- Integrated security testing automation processes into the development lifecycle.
- Provided complete backend hosting support, cloud maintenance, and functional testing to ensure 24/7 reliability for SaaS delivery.

The Impact

The collaboration resulted in a market-leading platform that has redefined the RPA support models:

- **Reduced Labor Costs:**
  Drastically lowered the need for human intervention in RPA production support.
- **Increased Bot ROI:**
  Improved bot utilization and uptime through instant failure notifications and self-healing capabilities.
- **Shift to Proactive Support:**
  Transformed the traditional IT Service Desk from a reactive ticket-taker to a proactive, automated resolution engine.

Technical Summary

Category	Technologies used
AI & Reasoning	Arago HIRO, Knowledge Graph Modelling
Data & Analytics	ELK Stack (Elasticsearch, Logstash, Kibana)
Automation	Ansible, Python, PowerShell
Cloud & DevOps	DevSecOps, Cloud Support & Maintenance, Automated Security Testing
RPA Ecosystem	UiPath, Automation Anywhere, BluePrism

Why Choose Our Engineering Team?

We don't just write code; we build **business systems delivering value to our customers**. Our work with this client demonstrates our ability to take cutting-edge AI concepts and ground them in a secure, scalable, and enterprise-ready backend. Whether it's complex data modelling or high-stakes cloud operations, we provide the full-stack engineering muscle needed to bring your most ambitious products to market.