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#### The client

A multinational technology conglomerate at the forefront of generative AI open-source large language model (LLM) development.

#### Industry

Technology services

#### Headquarters

USA

#### Operating in

multiple global locations

#### Solution elements

TrainAI by RWS

## Big tech company fine-tunes generative AI with 235 domain experts

**How does a multinational technology conglomerate differentiate its GenAI open-source large language model (LLM) from others on the market? By fine-tuning it using feedback from data annotators who are qualified experts in their field.**

### Challenge

Many of today's generative AI (GenAI) open-source LLMs have been trained on similar AI training data or content. Our client wanted to improve the usability, robustness and safety of its LLM so that user groups could rely on it more confidently to support innovation and collaboration. In particular, the client wanted the LLM to achieve a standard that would make it a resource for professionals in their own fields.

The client's objectives were to:

- Maximize the model's accuracy by training it on specific topic areas
- Improve the model's safety and security by mitigating the risk of it generating hallucinations (nonsensical or false output) or potentially harmful content

The company knew it couldn't achieve those objectives using a conventional crowdsourcing approach that involves farming out data annotation tasks to freelancers or gig workers.

To deliver the differentiated results it was looking for, it needed access to qualified subject-matter experts to work as data annotators. Without the in-house resources to quickly recruit, train, manage and scale up such a team, it reached out to RWS – an existing approved vendor for localization and data services – for help.

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### Solution

RWS's dedicated AI practice, TrainAI®, created a comprehensive AI training data solution to meet the client's objectives. Seasoned data services professionals within the team took responsibility for leading and managing the project.

### Recruiting the right team of domain experts

The first step was to recruit experts with university degrees in the client's required fields – general knowledge, business, humanities and STEM (science, technology, engineering and mathematics) – to work as data annotators. Their role was to produce robust, domain-specific content to train and fine-tune the LLM.

To meet initial project needs, TrainAI proposed hiring 100 data annotators, based in locations specified by the client, to work 20 hours a week on the project. To maintain exclusivity and data confidentiality, RWS employed the annotators as regular part-time employees, not as contractors or freelancers.

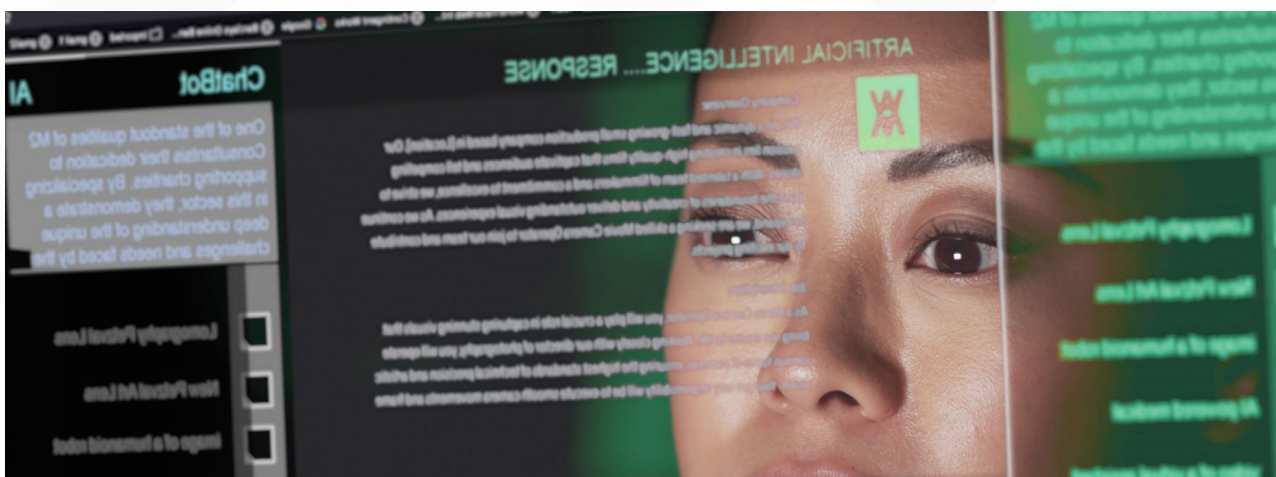
The TrainAI team worked with RWS's Vendor Resource Management and Talent Acquisition teams to develop a recruitment plan. To hire the right people in the right locations with the right expertise, they leveraged:

- RWS's SmartSource AI community (specializing in AI training data)
- RWS Article One Partners (AOP) Connect community (specializing in IP research)
- External recruitment marketing strategies

### Trained and ready to work in four weeks

TrainAI had 100 domain experts hired, tested, onboarded, trained and ready to start work in just four weeks. AI experience wasn't a pre-requisite, so TrainAI trained them on performing data annotation tasks to meet the client's needs by:

- Converting hundreds of pages of client-provided guidelines, instructions and examples into digestible training courses
- Running multiple live training sessions on project-specific technology tools and tasks



### Key business benefits

- 4-week project ramp-up
- 235 domain experts recruited
- 32,000 hours of work completed in the first three months
- Supported training and rollout of the client's latest LLM version

### Virtual desktops for data security

To safeguard the client's data, TrainAI implemented secure infrastructure to minimize the risk of data breach or loss caused by, for example, device damage or theft.

### Delivering GenAI data services

TrainAI provides the following GenAI services to fine-tune the client's LLM:

- **Domain expertise**

**Recruiting and managing domain experts**, and triaging tasks to the right experts with the appropriate topic knowledge and educational level required.

- **Content creation**

**Prompt engineering** (or prompt design), which involves the data annotators writing detailed, informative prompt-response pairs on topics in their specialist domains.

- **Model fine-tuning: reinforcement learning from human feedback (RLHF)**

**Prompt-response quality assessment (QA)** including response rating, evaluation, editing and enhancement.

**Fact extraction and verification** including reviewing existing prompt-response pairs, identifying purported facts in the responses, and verifying their authenticity.

- **Risk mitigation**

**Red teaming** (jailbreaking) by creating inputs designed to uncover vulnerabilities in the LLM, such as prompts that generate inaccurate, hallucinatory or potentially harmful responses.



### Scaling and optimizing the team

The calibre of the work being delivered led the client to expand the project scope. To meet the new requirements, TrainAI recruited another 135 data annotators to bring the team up to 235. It also continues to refine its annotator training as the project scope evolves.

### Monitoring and reporting

TrainAI monitors team performance and provides additional training as needed. Any potential issues are proactively identified and resolved. Key metrics, including staffing, completed tasks, average handling time and quality criteria, are tracked against project objectives; and the client receives regular detailed reporting.

### Responsible AI: how it's done

TrainAI's project approach follows the principles of responsible AI to ensure delivery of dependable LLM training and fine-tuning data with the following characteristics.

**Ethically sourced.** Instead of crowdsourcing for the project and hoping for the best, TrainAI SmartSourced a team of skilled, qualified and vetted experts to work as data annotators on the project and deliver the required quality output.

**Fair.** Annotators join RWS as regular part-time employees on W-2 contracts. They receive paid training and are compensated fairly for the time they spend working on the project.

**Accurate and reliable.** TrainAI matches domain-specific tasks to the right experts with the right qualifications and expertise to ensure delivery of trustworthy data the client can depend on.

**Transparent and explainable.** The client has visibility into project sourcing and compensation, as well as processes and workflows, for a full understanding of the data and its potential impact on LLM training.

**Private and secure.** TrainAI ensures the privacy and security of project data through a combination of HR, legal and IT best practices.





## Discover more about TrainAI by RWS

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### About RWS

RWS Holdings plc is a unique, world-leading provider of technology-enabled language, content and intellectual property services. Through content transformation and multilingual data analysis, our unique combination of technology and cultural expertise helps our clients to grow by ensuring they are understood anywhere, in any language.

Our purpose is unlocking global understanding. By combining cultural understanding, client understanding and technical understanding, our services and technology assist our clients to acquire and retain customers, deliver engaging user experiences, maintain compliance and gain actionable insights into their data and content.

We work with over 80% of the world's top 100 brands, more than three-quarters of Fortune's 20 'Most Admired Companies' and almost all of the top pharmaceutical companies, investment banks, law firms and patent filers. Our client base spans Europe, Asia Pacific and North and South America. Our 65+ global locations across five continents service clients in the automotive, chemical, financial, legal, medical, pharmaceutical, technology and telecommunications sectors.

Founded in 1958, RWS is headquartered in the UK and publicly listed on AIM, the London Stock Exchange regulated market (RWS.L).

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