



LIONBRIDGE

COMMUNITY-SUPPORTED AI DATA SERVICES

TRAINING LLMs TO CONSUME STYLE GUIDES FOR ENHANCED OUTPUT

Accurate automated translation for superior global communication

100-PAGE
STYLE GUIDE

47
LANGUAGES

6
MONTHS

MAXIMIZING THE EFFECTIVENESS OF LLMS WITH STYLE GUIDE CONSUMPTION

Style guides ensure consistency and quality in a brand's communication. They provide detailed rules and guidelines on tone, voice, and style so that every piece of content aligns with the brand's identity. It is crucial for companies using Large Language Models (LLMs) for automated translations to integrate their style guide rules into the AI for the desired output.

When an LLM is trained to follow a style guide, it can produce content that is consistent, high-quality, and true to the brand's voice. This capability allows companies to engage more deeply with their target audiences across different languages and regions, creating new opportunities for personalized communication.

THE CHALLENGE

Our customer possessed a comprehensive 100-page style guide containing 500 specific rules addressing the style and voice of their brand. They sought to integrate this style guide into their in-house LLM to effectively transcreate their website and translate marketing email templates into multiple target languages.

The company initially trained its LLM in-house. Despite employing a solid methodology, it faced significant challenges because it needed extensive community support to execute the prompt and validation steps effectively. This limitation prevented them from fully integrating their style guide, posing challenges in achieving the desired outputs.

Committed to optimizing their LLM, they sought AI data services from Lionbridge to achieve successful LLM training. Lionbridge's expertise and vast community were crucial factors in successfully training the LLM to apply the style guide rules.

ABOUT THE CUSTOMER

Our customer is a global American hyperscale technology company with a robust portfolio of software solutions for a diverse range of users, from individuals to the world's largest enterprises. With a history spanning over 40 years, the company employs tens of thousands of employees and has dozens of offices worldwide.

THE SOLUTION

Lionbridge contributed to enhancing the customer's automated translations by extracting language rules from their style guide, turning them into LLM instructions through prompt engineering, and enforcing their applicability in AI translations. The solution encompassed three main phases.



PHASE 1

In the first phase, Lionbridge focused on extracting and preparing the style guide rules for LLM usage:

- ▶ Extracting rules from the customer's extensive PDF style guide.
- ▶ Categorizing these rules according to their priorities.
- ▶ Compiling a list of the 40 most relevant generic rules for each language.
- ▶ Converting the rules into concise prompts suitable for LLM ingestion.
- ▶ Testing the applicability of the compiled rules internally on an initial set of LLM translations.

This phase involved thoroughly reviewing the customer's existing style guide and collaborating with Subject Matter Experts (SMEs), linguists, engineers, and project managers to ensure that the extracted rules comprehensively and accurately represented the customer's brand voice.



PHASE 2

In the second phase, Lionbridge tested, validated, and refined the style guide rules by:

- ▶ Testing the applicability of the compiled rules on a new set of LLM translations in the staging environment.
- ▶ Using prompt engineering to rephrase rules that the LLM did not apply effectively to ensure better extraction and application by the LLM.
- ▶ Conducting multiple rounds of testing and rephrasing until the LLM translations met the desired quality standards.

During this phase, rigorous testing and validation were performed using GPT-4 to ensure the LLM adhered to the customer's style guidelines. The prompts were iteratively refined based on test outcomes, providing high accuracy and consistency in the translations.

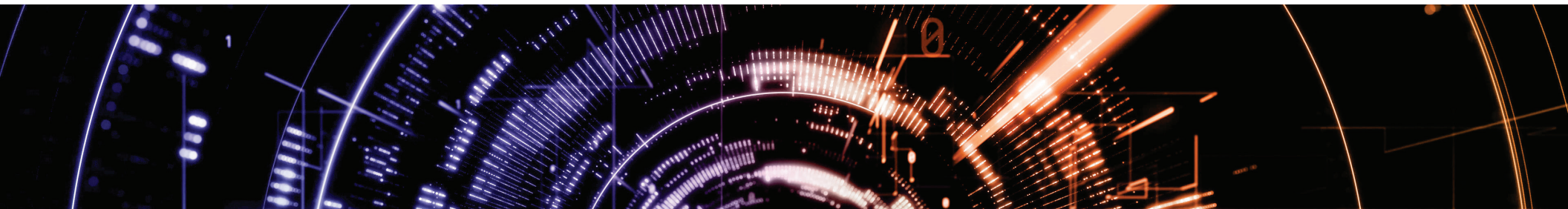


PHASE 3

The final phase involved human evaluation and ongoing refinement:

- ▶ Conducting human evaluations of the LLM translations on a new dataset against linguistic criteria using a 1-5 Likert Scale.
- ▶ Calculating evaluation scores and generating reports to assess the LLM's performance.
- ▶ Using prompt engineering to rephrase any rules that were still not applied effectively and launching additional rounds of testing as necessary.

The meticulous approach ensured that the LLM translations improved and aligned with the customer's style and guidelines.



THE RESULTS

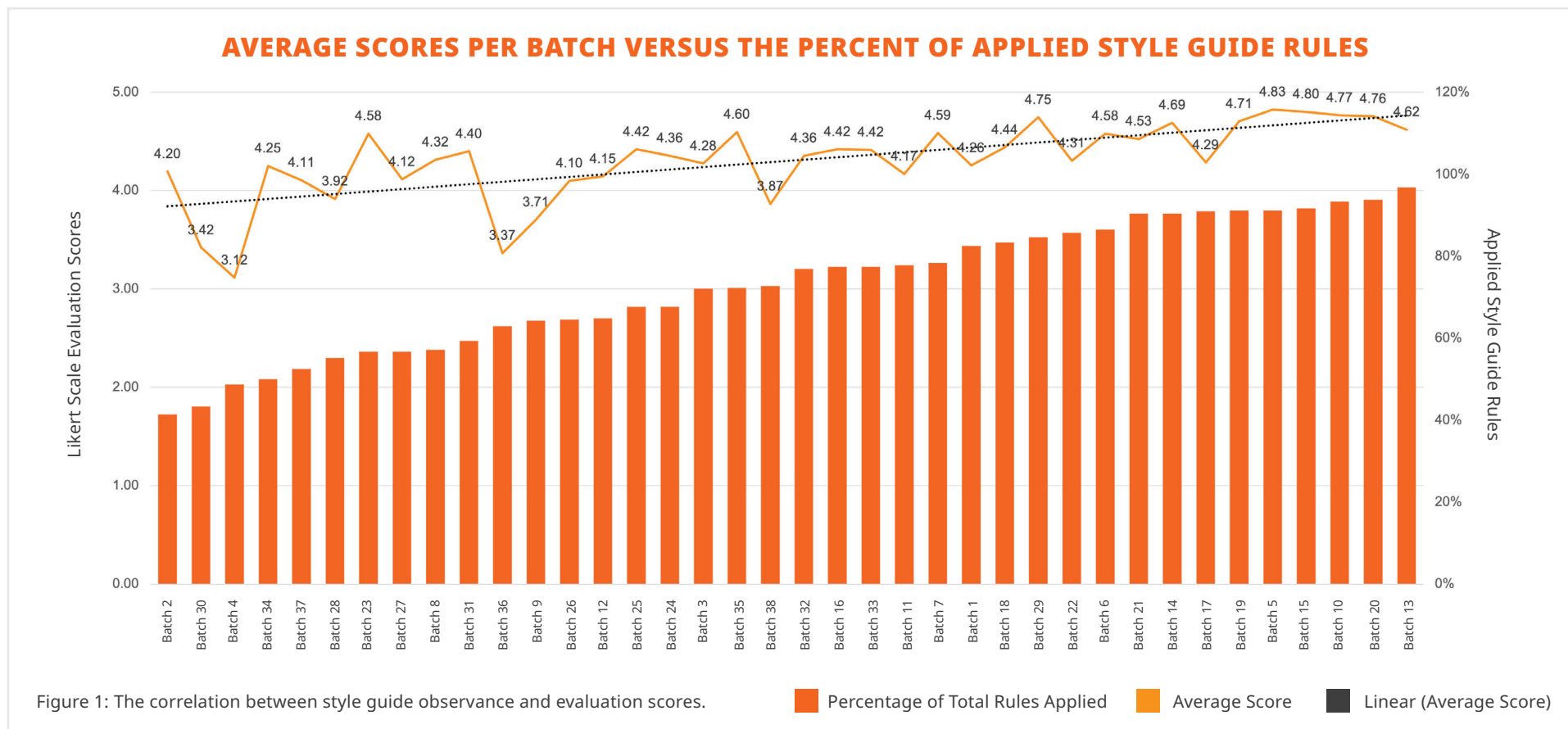
Lionbridge successfully integrated carefully curated and streamlined style guide rules into LLM translation prompts for 47 languages within an aggressive 6-month timeline for improved model performance.

As shown in Figure 1, the higher the number of style guide rules applied in the AI translation, the higher the evaluation score. The results underscore the importance style guide rule application in achieving higher-quality translations.

The LLM now generates content that consistently adheres to the customer's style and guidelines, achieving high-quality, accurate translations for the transcreation of their website and marketing email templates, thereby enhancing global communication.

Compared to human translators, the effective use of AI for translations enabled the company to achieve a 30 percent reduction in translation costs. Moreover, streamlining the translation workflow reduced the time and effort required to maintain translation guidelines. Lionbridge continues to provide maintenance work for the customer, fine-tuning languages and adding variants.

Lionbridge can help train a company's LLM, as we did for this customer. For most companies without an internal LLM, we can alternatively use the Lionbridge Aurora AI™ platform to train our LLM to ingest and apply a customer's complex style guide rules during the translation process. This capability is done through our advanced Automated Post-Editing (APE) offering.



KEY TAKEAWAYS



Style guide rules can be effectively integrated into LLM translation prompts, enhancing translation quality; however, not all rules can be turned into generic prompts.



It is essential to balance the number of rules in the prompt to optimize LLM translation outcomes, as overloading the prompts with too many rules can be counterproductive.



Traditional style guides are being replaced by generic style rule sets implemented in advanced Automated Post-Editing (APE) processes, as supported by the Lionbridge Aurora AI™ platform.



The targeted application of style guides and language instructions into LLMs is crucial to boosting translation quality from 80% to 99%. We collaborated with our customer to implement dynamic prompting based on context and content type in their own LLM system for hyper-personalization. This capability is also readily available in the Lionbridge Aurora AI platform, enabling any company to speak more intimately to their target audiences through various approaches, such as offering 20 different versions of Spanish or tailoring their tone for more demographic segments.

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