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Productivity of Machine Translation

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Abstract

This article is about the field of technical translation which is called machine translation (MT), or machine-assisted translation. This method of translation uses various types of computer software to generate translations from a source language to a target language without the assistance of a human. There are different methods of machine translation. A plethora of machine translators in the form of free search engines are available online. However, within the field of technical communication, there are two basic types of machine translators, which are able to translate massive amounts of text at a time. There are transfer-based and data-driven machine translators. Transfer-based machine translation systems, which are quite costly to develop, are built by linguists who determine the grammar rules for the source and target languages. The machine works within the rules and guidelines developed by the linguist. Due to the nature of developing rules for the system, this can be very time-consuming and requires an extensive knowledge base about the structures of the languages on the part of the linguist; nonetheless, the majority of commercial machine translators are transfer-based machines. .

***Keywords*— translation system, transfer-based, data-driven machine, target language, time-consuming.**

INTRODUCTION

Data-driven machine translators, also known as statistical-based machine translators, work by aggregating massive amounts of previously translated bits of information, and uses statistical analysis to determine matches between the source language and target language with the previously aggregated corpora. This method is less expensive and requires less development time than transfer-based machine translation, but the generated translation is often not to the same quality as transfer-based translation. The translation services offered through Google use transfer-based translation technology. Technical translation could raise privacy concerns for some professional or corporate translators.

For technical translators without access to expensive machinery, the Internet hosts many online translation sites that are either free or require a small fee. Some research has been done in order to test the effectiveness of various online translation tools. In one article, researchers looked at the success of online machine translators in retrieving appropriate search results. Looking at Google translator, Babelfish (previous to the merge of Babelfish and Yahoo!), Yahoo!, and Prompt, test searches were based on translating key search words and comparing the search results with a monolingual search. Using computer-based statistical analysis, the results showed that translated search results were only 10% less effective than a monolingual search, making the translated search fairly successful in retrieving appropriate information. However, the success in this particular study was only possible when English was one of the target languages.

Other research points to the effectiveness of machine translation when paired with human interaction. In a mixed methods experiment, researchers first examined the effectiveness of machine translations using statistical analysis and then used subjects to test out a new type of machine translation (TransType2) that required human interaction as a part of the translation process. The results of the experiment showed that human interaction is a vital supplement for

overall accuracy in machine translations. This research demonstrates the importance of the role that technical translators can play in the process of translating technical documents.

Conclusion

While no machine translation device is able to replicate or replace the dynamics of a human translator, machine translation certainly poses important advantages. In fact, there are many practical uses for and implications of machine translation for the field of technical translation. Machine translation has major cost advantages as compared to human translation. In fields of technical communication where information is constantly changing, for example, the stock market or jobs related to the weather, the cost of paying a human translator to constantly update information would become quite expensive. [4] Additionally, situations that involve translating massive volumes of information over a short period of time, or situations that require speedy and frequent communication would benefit from machine translation. In such circumstances, a machine translator would be advantageous from a financial perspective. [5]

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