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PROS AND CONS OF MACHINE TRANSLATION
Abstract

The article touches upon the advantages and disadvantages of machine translation, compares it with translation by a human translator, specifies all possible errors and distortions that machine translation makes. This work also provides the history of the emergence of the first machine translation, its application and further development, modern possibilities, prospects, the use of machine translation in professional practice, and provides the names of the most common platforms and systems of machine translation. Machine translation (MT) is the application of computers to the task of translating texts from one natural language to another. The article also provides a comparison of different versions of machine translation performed by the Yandex and Google platforms. The first example provides an excerpt from the work of Jerome K. Jerome "Three Men in a Boat (to say nothing of the dog)", and in the second example we see the difference in translation based on an excerpt from "Crime and Punishment" by Fyodor Dostoevsky. The article concludes by noting the shortcomings of machine translation and the reasons why machine translation cannot be used without subsequent editing of the translated material.

Keywords: *machine translation, advantages, disadvantages, translation capabilities, natural language, translation platforms*

MAŞIN TƏRCÜMƏSİNİN ÜSTÜNLÜKLƏRI VƏ MƏNFİ TƏRƏFLƏRI
Aynurə Qurbanova

Xülasə

Məqalədə mətnin maşın tərəfindən edilən tərcüməsinin üstünlükləri və çatışmazlıqları haqqında bəhs edilir, insan tərcüməçi tərəfindən edilən tərcümə ilə müqayisə edilir və maşın tərcüməsində edilən bütün mümkün səhvlər və mətn təhrifləri aydınlaşdırılır. Bu məqalədə həmçinin ilk maşın tərcüməsinin yaranma tarixi, onun tətbiqi və sonrakı inkişafı, müasir tərcümə imkanları, perspektivləri, peşəkar təcrübədə maşın tərcüməsinin istifadəsi, ən çox yayılmış tərcümə platformalarının və maşın tərcüməsi sistemlərinin adları verilmişdir. Maşın tərcüməsi (MT) müxtəlif mətnləri bir təbii dildən digərinə tərcümə etmək üçün kompüterlərin tətbiqidir. Məqalə həmçinin Yandex və Google tərcümə platformaları tərəfindən həyata keçirilən maşın tərcüməsinin müxtəlif versiyalarının müqayisəsini təqdim edir. Birinci misalda Cerom K. Ceromun "Qayıqda üç kişi (iti saymasaq)" əsərindən bir parça verilir, ikinci misalda isə Fyodor Dostoyevskinin "Cinayət və Cəza" əsərindən bir parça əsasında iki platforma tərəfindən edilən tərcümələrin fərqini görə bilirik. Məqalənin yekun hissəsində maşın tə-

rəfindən edilən tərcümənin çatışmazlıqları qeyd edilir və alınan tərcümədən redaktə edilmədən istifadə edilməsinin tövsiyə edilməməsinin səbəbləri göstərilir.

Açar sözlər: *maşın tərcüməsi, üstünlüklər, çatışmazlıqlar, tərcümə imkanları, təbii dil, tərcümə platformaları*

ПРЕИМУЩЕСТВА И НЕДОСТАТКИ МАШИННОГО ПЕРЕВОДА
Айнура Гурбанова

Аннотация

В статье рассматриваются преимущества и недостатки машинного перевода, проводится сравнение с переводом, выполняемым человеком, а также указываются возможные ошибки и искажения, допускаемые машинным переводом. Работа включает историю возникновения первого машинного перевода, его применение и дальнейшее развитие, современные возможности, перспективы, использование машинного перевода в профессиональной практике, а также перечисляет наиболее распространенные платформы и системы машинного перевода. Машинный перевод (МП) представляет собой применение компьютеров для выполнения задачи перевода текстов с одного естественного языка на другой. В статье также проводится сравнение различных версий машинного перевода, выполненных с использованием платформ Яндекс и Google. Первый пример включает отрывок из произведения Джерома К. Джерома «Трое в лодке, не считая собаки», а во втором примере показаны различия в переводе на основе отрывка из романа Федора Достоевского «Преступление и наказание». В заключении статьи отмечаются недостатки машинного перевода и причины, по которым машинный перевод не может использоваться без последующего редактирования переведенного материала.

Ключевые слова: машинный перевод, преимущества, недостатки, возможности перевода, естественный язык, платформы перевода.

Introduction

Linguistics analyzes and studies a number of various issues. The study of linguistic aspects of translation, which is the interlingual speech activity, is also of great importance.. Translation has always been considered and is still considered one of the most challenging types of human activity. Translation often means translating a text "from one language to another," but in reality, things don't happen quite like that. In the process of translation, different eras, as well as different cultures and traditions, collide. [5]. The process of translating any material is carried out by different translators in different conditions: the translated material may differ in the subject of the translation, in the language and the method of translation. Thus, different types of translation are created, and each of them has its own distinctive features. Machine translation has attracted more and more attention over the past decade, especially from scientists. Computer technology has been making our lives easier in many areas of activity for over a decade. It optimizes our work, helping to reduce both physical and intellectual costs. In addition, survey results show that most users use computer technology mostly for work [3], [4]. The process of text translation is no exception as well.

Research

Machine translation (MT) is the application of computers to the task of translating texts from one natural language to another." [2]. Machine translation (MT) as a term is understood in at least two senses. In a narrow sense, it means the process of translating any text from one natural language to another, implemented by a computer program completely or almost completely. The process consists of the fact that the machine is given a text, the textual part of which is not accompanied by any additional instructions, and the result is a text in another language, which is a translation of the input text, and the transformation of the input text into the output occurs without human intervention. Machine translation is a long-standing dream of the whole mankind that has become a reality in modern times. In this article we will cover the history of its development, modern possibilities, prospects and, of course, the use of machine translation in professional practice.

History of Machine Translation

On January 7, 1954, the Georgetown Experiment took place in New York, at the IBM headquarters. During this experiment, more than 60 sentences were translated from Russian into English [8]. This marked the beginning of the use of MT and gave impetus to its development. Systran, one of the oldest machine translation companies (1996), offered free translation of small texts. It was with it that the use of MT on the Internet began. In 2007, the machine translation program called Moses was created, which was a statistical machine translation engine from a source language to a target language, developed by the University of Edinburgh [7]. In 2008 in Japan a text translation service (or SMS for mobile phones) appeared, and the next year, a mobile phone with a built-in function for converting speech from one language to English, Japanese and Chinese was produced. In recent years thanks to Google's research into neural machine translation, which predicts an optimistic future for the industry machine translation technologies have undergone significant positive changes. According to the current classification of machine translation systems, there following types are distinguished:

- fully automated translation;
- machine translation carried out with human participation;
- translation performed by a human using a computer [6].

Programs

Nowadays there are many software programs for text translation. In some of them neural networks or pre-set language rules (algorithms) for better translation are used. The most common of them are: Google Translate, Yandex Translate, PROMT, Trados, Bing, SYSTRAN Translate As translation is the transfer of information from one language to another, various types of machine translation cope with this task in their own way. The most common types of machine translation are only suitable for translating individual words and phrases. Google Translate translation system is the most widely used all over the world. The machine translation system intuitively tries to guess how to translate a sentence in order to properly transfer the information included in it, but the information itself and meaning of the text is usually lost in the process. Therefore, after such a translation a person must check the correctness of the translation performed. This system especially badly copes with translation of fiction texts, and so this is a real translation problem. It is for this reason that there are still

platforms and translation centers that offer their services for translating material into various languages, and also provide oral translation during events. Compared to them, machine translation is incompetent. At the moment, some software and systems use a neural network and independently "learn" translation based on corrections. But such translation also makes significant errors. Machine translation also has difficulty translating speech, especially slang. However, people can help it here, like in Google Translate, where the translators` community can help by translating slang words and explaining the value of words and their history. Some machine translation systems learn using neural networks and are capable of translating complex fiction texts. However, they still need human control so that the meaning is not lost or direct speech sounds vivid, if we are talking about works of fiction. Their development is still underway. Metaphors, author neologisms, wordplay, irony, syntactic specificity, dialectal words and other stylistic means are not properly translated during machine translation or they are transmitted with significant distortions. Difficulties also arise in reflecting author`s individual style of writing. That is, when translating a literary text, it is necessary to take into account a fairly wide range of features of the original text, the transmission of which requires extensive additional knowledge, skills and experience. Machine translation does not convey the specific polysemy of the original literary text. Spelling and grammatical errors in this translation are rare, the main problems are related to the violation of word order and stylistic inaccuracies. And although machine translation creates the illusion of saving time, processing this text sometimes takes no less time than "manual" translation: before "conducting" machine translation, additional text formatting is necessary, after the translation is completed, it is necessary to check the original and translated text for semantic inaccuracies and factual errors, clarify terminology, spelling of proper names, toponyms, stylistic editing.

Examples of MT

To better understand the principle of operation of machine translation systems, how the analysis of grammatical and lexical features of the language, various structures in the target language is carried out, we decided to translate an excerpt from the story by Jerome K. Jerome "Three Men in a Boat (to say nothing of the dog)" into Russian, using Google and Yandex Translate machine translation systems:

"And I am careful of my work, too. Why, some of the work that I have by me now has been in my possession for years and years, and there isn't a finger-mark on it. I take a great pride in my work; I take it down now and then and dust it. No man keeps his work in a better state of preservation than I do".

Google:

«И я тоже бережно отношусь к своей работе. Да ведь некоторые работы, которые у меня сейчас есть, находятся в моем распоряжении уже много лет, и на них нет ни отпечатка пальца. Я очень горжусь своей работой; Я время от времени снимаю его и протираю. Ни один человек не сохраняет свою работу в лучшем состоянии, чем я».

Yandex Translate:

- И я тоже тщательно отношусь к своей работе. Некоторые работы, которые у меня сейчас есть, хранятся у меня много лет, и на них нет ни единого отпечатка пальцев. Я очень горжусь своей работой; время от времени я снимаю ее и стираю пыль. Ни один человек не хранит свою работу в лучшем состоянии, чем я".

In both examples the translation is done word for word, the artistic approach is missed, which is why the translation sounds less professional. Besides that, both programs were unable to correctly determine whether the noun "work" (работа) in the second sentence is plural or singular. Now let's take a look at the translation done by Salie M. A.:

«Я очень бережно отношусь к моей работе. Часть работы, которая лежит у меня теперь, находится в моём кабинете уже многие годы, и на ней нет ни пятнышка. Я очень горжусь моей работой. Иногда я снимаю её с полки и сметаю с неё пыль. Я, как никто, забочусь о её сохранности».

This translation clearly reflects cases and forms of nouns, has an artistic approach, and conveys English humor very subtly.Let's look at another example of translation using Google and Yandex translation systems. As an example, an excerpt from the work "Crime and Punishment" by Fyodor Dostoevsky is used.«Раскольников не привык к толпе и, как уже сказано, бежал всякого общества, особенно в последнее время. Но теперь его вдруг что-то потянуло к людям. Что-то совершалось в нем как бы новое, и вместе с тем ощутилась какая-то жажда людей. Он так устал от целого месяца этой сосредоточенной тоски своей и мрачного возбуждения, что хотя одну минуту хотелось ему вздохнуть в другом мире, хоть бы в каком бы то ни было, и, несмотря на всю грязь обстановки, он с удовольствием оставался теперь в распивочной.»

Translation into English done by Google:

"Raskolnikov was not used to crowds and, as already said, ran away from any company, especially lately. But now he was suddenly drawn to people. Something seemed to be new in him, and at the same time he felt some kind of thirst for people. He was so tired from a whole month of this concentrated melancholy and gloomy excitement that although for one minute he wanted to breathe in another world, at least in any world, and, despite all the dirt of the situation, he now happily remained in the tavern. »

Translation by Yandex:

"Raskolnikov was not used to crowds and, as already mentioned, he fled all society, especially lately. But now he was suddenly attracted to people. Something new was happening in him, as it were, and at the same time some kind of thirst for people was felt. He was so tired of a whole month of this concentrated melancholy and gloomy excitement that for at least one minute he wanted to breathe in another world, at least in any kind, and, despite all the dirt of the situation, he was happy to stay in the tavern now."

The samples translated by the programs have differences in word order, but the meaning is not particularly distorted. However, the artistic approach is weak, both versions sound too literal, especially in the translation of certain phrases, such as, for example, "как уже сказано - as already mentioned / as already said ".

Now let`s take a look at the translation done by Constance Garnett:

"Raskolnikov was not used to crowds, and, as we said before, he avoided society of every sort, more especially of late. But now all at once he felt a desire to be with other people. Something new seemed to be taking place within him, and with it he felt a sort of thirst for company. He was so weary after a whole month of concentrated wretchedness and gloomy excitement that he longed to rest, if only for a moment, in some other world, whatever it

might be; and, in spite of the filthiness of the surroundings, he was glad now to stay in the tavern." The translation by translator Constance Garnett has a clear artistic approach, the style of the work of art is preserved, certain words are replaced with proper alternatives. Now let's look at examples of translation of technical documentation from Russian into English:

«ПРОЦЕДУРА ПРОВЕРКИ И ИСПЫТАНИЙ СТАЦИОНАРНЫХ УКВ-РАДИОТЕЛЕФОННЫХ СТАНЦИЙ. Проверить работоспособность кодирующего устройства ЦИВ и приемника для наблюдения за ЦИВ по петле обратной связи «Контроллер ЦИВ→ приемо-передатчик → приемник ЦИВ → контроллер ЦИВ» в режиме самоконтроля, используя инструкцию по эксплуатации; »

Google translation:

"PROCEDURE FOR INSPECTION AND TESTING OF FIXED VHF RADIOTELEPHONE STATIONS. Check the functionality of the DSC encoder and the receiver for DSC surveillance using the feedback loop "DSC controller → transceiver → DSC receiver → DSC controller" in self-test mode, using the operating instructions; »

Yandex translation:

"THE PROCEDURE FOR CHECKING AND TESTING STATIONARY VHF RADIOTELEPHONE STATIONS. To check the operability of the CIB encoding device and the receiver for monitoring the CIB via the feedback loop "CIB controller→ receiver-transmitter →CIB receiver → CIB controller" in self-monitoring mode using the operating instructions; "

Translation done by us:

«CHECKING AND TESTING PROCEDURE OF FIXED VHF RADIOTELEPHONE STATIONS. Check the working efficiency of the DSC encoder and the receiver for monitoring the DSC through the feedback loop "DSC controller→ transceiver →DSC receiver → DSC controller" in the self-control mode, using the instruction manual;

Pros and cons of MT

Machine translation has both obvious advantages and disadvantages. The first advantage is the high speed of translation. Just a few seconds, and the machine translation of the text is ready. You will not have to spend hours flipping through dictionaries to translate each word or waste time waiting for a translation from a professional translator. Relatively cheap cost is another advantage of machine translation. There are many free translation platforms. The services of a professional translator cost money. Another advantage of machine translation, which makes life much easier for many (especially students), is its availability. Anyone with access to the Internet or the ability to install an offline version of a machine translator can upload text for translation at any time from anywhere and get the result. Versatility is also one of the advantages of MT. Online machine translation services and platforms can usually translate text from and to almost any language. While professional translators most often specialize in one or several (from 1 to 4) languages. The main and biggest disadvantage of machine translation is its low quality. Platforms and services of automatic machine translation mostly translate text literally, without analyzing information and taking into account the context itself. They convey the general essence of the text, however, they make many se-

mantic errors. In some cases, the meaning of a separate sentence or even the entire text may be completely distorted after translation. Machine translation cannot analyze account the context and decide how to translate in uncertain situations. While professional translators can analyze the context and use their experience. The advantages of using machine translation include its speed, cost, accessibility, and confidentiality. The disadvantages of this type of translation include the fact that it does not take into account grammar rules and language techniques; the number of errors and translation versions are often incorrect; the chosen meaning of a word may not fit the context; if a word is missing from the dictionary database, it is simply not translated and its equivalent is not found [1]. It can be said that machine translation is a complex task that has yet to be solved. A human translator thinks of how an idea should to be conveyed to the reader, but the translation program has to learn this, and this is very problematic. However, progress is rapid, new translation programs are being created that simplify the translation process, and it is necessary to know their disadvantages and advantages. Besides that, MT often misses formatting, fails to detect hidden meanings, wordplay, jokes, etc., and simplifies the text, making it look more awkward.

Result

In conclusion, based on the above, we can say that at this stage of its development, machine translation is not a replacement for a professional human translator, but is only an auxiliary tool for faster translation of material. Any machine translation needs careful checking, error detection, editing, and improvement. Only after that will it be accurate enough. You can't trust machine translation 100%, especially you can't blindly translate important documents with it. Machine translation can be an excellent platform for subsequent work with the text and its editing. However, if the material is translated by a professional translator, the result will be much more reliable.

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