

Research on the Development of i-Translation Technology in E-era

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Abstract

This article offers a general overview of the current translation technology and the trend of its further development. Based on the leading types of translation technologies, the introduction tries to draw a wide picture of the current research on the state-of-the-art translation technologies with the assistance of AI and/or big data. The need for language service is on rise, while the efficiency and accuracy are in a bad need to be improved. Therefore, the hope lies in the innovation of i-Translation technology. Plus, it has a glance at the interaction between translators and i-Translation, offering some insights as well as leaving some space for deeper exploration and thoughts.

Keywords

i-Translation; Translators; Translation technologies; AI (Artificial Intelligence).

1. Introduction

It is an unprecedented and uncommon era, which has been witnessing a growing number of improvement and/or inventions for life and work on this planet. Historically, translation keeps bringing us closer to a world where people can communicate freely across language barriers. Globally speaking, as for the rising demand of international communication, lingual scientists have never stopped their efforts on exploring an easier and smarter way to solve this challenge for ages. So far, of particular interest in reforming the traditional human-translated way, this study aims to provide a glance at how the state-of-the-art computer science gives a rise for interpretation and translation.

It is a clear and hard fact that translation, along with the rapid development of computer science, has undertaken a flood of breakthroughs, especially since the advent of internet. For a whole, the approaches to explore deeper and farther in this field vary with the assistance of advanced internet technology. As one of the longest interactivities in human history, translation has always played a critical role in social, economic, scientific areas. As a matter of fact, translation has been, to a large degree, promoting the thoughts of scientific development, particularly in communication, information and internet areas.

Translation technologies have evolved into one of the most state-of-the-art innovations which can largely promote and prompt the social progress of international communications. In particular, Ai-driven translation technology has led to dynamic changes in translation practice, translation industry and translation education, bringing new opportunities and innovative challenges to translators and scientists.

2. Smart Translation Technology

With the rapid advancement of globalization and informatization, translation activities are facing with a thorough evolution, including working tools, patterns, areas, and so on. Taking it by and large, smart translation technology is reforming this traditional industry by leaps and bounds.

2.1. Computer-Aided Translation (CAT)

Academically, the term of Computer-Aided Translation is not a brand-new one to translators. Since the 1940s, machine translation has been the major researching target in Artificial Intelligence (AI). Undoubtedly, language is the ultimate strength for human beings comparing with animals, and hence it is a haunting aim for linguistic scientists to find out how computers can process the complicated language translation through human-invented technology, which has drawn significant efforts and passion as days go by.

CAT has eased the arduous and boring labor of human-made translation to a large degree through this automatic procedure with a better result from quality and efficiency. As the research on CAT expanding forward, the tools of translation memory (like Trados, MemoQ), term management (like Multi-term, Cross Term, Term Star) and automatic QA (Quality Assurance) tools (like Error Spy, Distiller), which primarily lead the trend of i-Translation.

2.2. Corpus-Based Technology for Translation

The increasing development of computer science and network widely promotes the growth of corpus, stimulating the rising role of corpus in translation practice. What is more, the popularity of internet culture has made the sharing of the resource available. At the same time, a host of commercial companies target at the potential and promising market to establish their bilingual products, such as Google Translator, Youdao, CNKI, Baidu and so on, which considerably provide a rich and handy source for translators in timely need.

2.3. Translation in Collaboration

In this information age, a mountain of newsletters or reports is in a bad need to be translated into various languages within a given time, which extremely speeds up the cooperation of translators from parts of the world. In order to meet the market of language service, some of the distinguished tech-companies commit a variety of resources to launching more user-friendly products, for example, XTM Cloud, LingoTek, SDL GroupShare, etc. which can offer a smart opportunity to share and work together for the same project. As a result, translation in collaboration has turned the former individual translation into a major group work serving for large-scaled companies of language service.

2.4. Artificial Intelligence-Oriented Machine Translation (MT)

The focus on timely and accurate translation has been driving the research forward. MT has progressed deeply and used widely in different areas, such as news, tourism, medicine and so on. In 2012, Google introduced automatic translation to its e-mail service. It follows the rule by detecting patterns in documents that have already been translated by human translators, so Google Translate can make intelligent guesses as to what an appropriate translation should be. Indeed, this is a huge step for i-Translation. As a result, the more human-translated documents that Google Translate can analyze in a specific language, the better the translation quality will be. This is why translation accuracy will sometimes vary across languages. It might be a coincidence that in the exact same year, another scientific giant, Microsoft lunched its glorious breakthrough, namely, Deep Neural Networks (DNNs), applying for the simultaneous interpreting, rendering a better picture for interpretation. Artificial neural networks (ANNS) have been a familiar application to enhance speech-recognition performance since 1980s. In these days, the Face-book Artificial Intelligence Research (FAIR) team published research results by using a novel convolutional neural network (CNN) approach for language translation that achieves state-of-the-art accuracy at nine times the speed of recurrent neural systems. These significant achievements have predicted a promising success in real practice that is sure to relieve the burden of interpreters.

2.5. Big Data: A New Trend of Translation

The Big data has a far-reaching impact on global industries, translation technology being one of them. Without any doubt, big data is playing a rising role in the translation industry as well as technology. Meanwhile, the cloud platform offers access to millions of professional translators who can establish translation memory to do machine translation as much as possible. With Cloud-based Big Data, applications companies can compile data from all over the Internet to assist people to bring about new insights. In fact, a large number of research companies are investing much on evolving the sophisticated smart technology for translation further development. Big data provides abundant opportunities for both the individuals and organizations to make a world-wide analysis in order to identify and predict the leading trends in the coming years. Moreover, the popularity of cloud services will work hand in hand with Big data to foster the flourishing of i-Translation. Therefore, armed with Big data, expert translators and interpreters can accurately and timely check the discrepancy and disparity between machine translation and human translation.

3. I-Translation in Digital Age

As the advancement and application of i-Translation, human translation will be replaced sooner or later and AI will be better at translation by 2024, according to some experts. It is notably that AI has the potential to reshape the traditional translation industry, closely reaching the ultimate target of language communication in a free and sensible way. Besides, it is obviously that i-Translation is bound to reap more benefits, taking away those tedious, repetitive, time-consuming work that few translators enjoy doing. With the explosion of information, i-Translation has entered a new stage in terms of customized experience. Digital products, like smart-phones, i-pads, laptop, etc. are easy platforms to carry the innovative APPs. With the help of Internet, novel i-translating gadgets have mushroomed in this competitive market, for example, Tour-talk APP, largely saving cost to some degree.

3.1. Resources Integration

In an apparent tendency, Language service is more likely to be driven by digital and intelligent power of technology, which gives rise to a sharing, convenient and open database of translation, like cloud computing platform, big data, AI, the Internet of Things, blockchain and so on. During the process of i-Translation, the new technology has surely paved a wide and promising road to the emerging market for language service. The technology suppliers make the best use of the integration and procession of trillions of language materials, analyzing the data results to optimize the i-Translation working model. Then through the released data, i-Translation can have access to the fresh floating data to go on a deeper learning. Under this circumstance, the suppliers of i-Translation are building an eco-system for translation professional development.

3.2. The Shift from Computer-Aided Translation to Cloud Translation

Along with the complexification of language service project today, a series of challenges have mushroomed in an explosive way, for example, the huge data, the management of software and hardware, the need of maintenance for the language service market, which result to a significant problem for desk-based Computer-Aided Translation Project. The mainstream solution to the high cost hinder is a sweeping approach—Cloud Integration. As Cloud Office Automation, Cloud Computer Relation Management, Cloud Enterprise Planning, Cloud Supply Chain Management and other cloud related technologies are world-widely used in all walks of life, it is quite predictable that the trend of cloud-based translation technology is becoming more popular. From computer-aided tools to various types of Apps, the cloud translation model is showing its powerful strength in the field of language service market.

3.3. Functional Extension

As the further globalization, it is a rising requirement for language service market. What is more, it is bound to see the invention and application of smart translation tools in order to serve for different functions in various events. Owing to the limitations inherent in human perception and/or the diverse language resources, challenges will be always more striking than human findings and thinking about them.

Hence, the upgrading of translation tools never stop the forward steps to meet the diverse and multi-level requirements of translations. Translation technology providers can cater for one package service such as data processing, memory matching, information searching, content recommending, post-translation editing, real-time breaking news and so on. In fact, it is the success of human service and technology cooperation in a far more complex field. It is no denying that translation has an intense participation with AI, enhancing translation effect as well as efficiency. The prominent model is paradigm “CAT+TMS+CMS” (Computer Assisted Translation; Translation Management System; Content Management system)

3.4. Competition and Cooperation between Translators and I-Translation Technologies

History presents that AI—a heated technology more intelligent than any human being—is soon approaching to our life and work. To power human work, it is a historical mission for technology. Artificial intelligence is getting smarter by leaps and bounds. In this digital and information age, thousand of research suggests a computer AI could be as “smart” as a human being in our near future. Nick Bostrom, a professor, philosopher and technologist with Oxford University, classified three levels of AI technology: Artificial Narrow Intelligence, Artificial General Intelligence and Artificial Superintelligence. Nick Bostrom has laid the foundation for understanding the future of human being and intelligent life. Artificial Narrow Intelligence focuses on completing a specific task but fails to multi-tasks and thinking ability. Artificial General Intelligence is similar to human-level intelligence, which can think independently and abstractly. Also, it can understand complex ideas in a company with human-like values and views of the world. If machine brains surpassed human brains in general intelligence, then this new superintelligence could become extremely powerful - possibly beyond our imagination. Therefore, a bold and further point can be proposed that someday, the great literature works stand a huge possibility to be translated in various languages through Artificial Superintelligence, i.e. i-Translation has about the same abilities as a human brain but is much faster.

4. Conclusion

The translation industry is in an unprecedented way developing and innovating as time goes by. From the perspective of technology, i-Translation, hopefully, is able to strike out a new path to connect people in different parts of the world. However, it may not yet capable of interpret inter-cultures, creativity, customs, and personality that makes for truly effective communication across languages in a short time. The weakness of i-Translation is in a field as emotional and personal as language is simply that is not human. Hence, in a long term, i-Translation is expected to be much more personalized besides its high productivity. From my humble viewpoint, i-Translation at its nature is a well-designed marriage between technology and humanity. Technically speaking, translation technology serves as the active contributor to translating community. Indeed and instead, it is reasonable and wise for professional translators and interpreters to embrace those up-to-date technologies to better adapt ourselves to this era of i-technologies. With the knowledge of current challenges, and therefore, with the

critical analysis and assessment, how translation technology and humanity work hand in hand will underpin the further research.

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