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Research on the Development Strategy of Language Service Industry in Hubei Province in the Context of Artificial Intelligence

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ABSTRACT. *In recent years, with the rapid development of artificial intelligence in Hubei province, how to meet the demand of market for language services in the context of artificial intelligence represents a major issue. Starting with the development of the man-machine translation, this paper considers the change of talent training plan in colleges and universities and formulates the strategy research that can cultivate the "talents" in the man-machine translation as a way to meet the needs of regional economic development.*

KEYWORDS: *Man-machine Translation; Language Service; Strategy Research*

1. Introduction

Based on big data, artificial intelligence and mobile internet, the man-machine translation, a kind of artificial intelligence combines machine and labor, balances high efficiency of machine translation and sound quality of human translation. It forms an intelligent translation mode featuring the text-machine translation-man translation output.Recently, the rapidly developing Neural Machine Translation (NMT) has replaced the traditional Statistic Machine Translation (SMT) and its technology has greatly improved the speed and accuracy of translation.

At the end of 2016, Google found that the neural machine translation system reduced the error by 55%-85% in the translation of multiple samples. The research results based on neural network can be divided into two parts: basic research and application research. Unlimited by RNN,Basic research has made great progress in model structure.For example, the Convolutional Sequence to Sequence Learning of Facebook adopts CNN instead of RNN. In addition, MIT CSAIL uses Quasi-RNN to improve the training speed of RNN based on RNNs as Fast as CNNs. These methods have brought great improvement in training speed.

Research on data acquisition for neural machine translation also represents an important direction.For example, Deep has become one of the leading companies in

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machine translation technology in a short period of six months from a major company engaged in data. Four researchers named Denny Britz, Anna Goldie, Thang Luong, QuocLe from Google Brain have conducted a large-scale analysis of the hyperparameters of the NMT structure and have put forward some new ideas and practical suggestions for establishing and extending the NMT structure.

2. Man-machine Translation Based on Neural Network

The multi-lingual solution of man-machine translation based on neural network can promote the development of language service industry in the context of artificial intelligence. The establishment of man-machine interaction translation platform, the development of man-machine interaction training and the cultivation of "talents" in man-machine interaction can provide the strategy research of professional services for the language service industry.

Transn Internet of language Technology Co., Ltd. adopts the cyclic neural network, new algorithm of word embedding and GRUs &LSTM and develops man-machine interaction translation platform as a way to help translators to complete tasks efficiently with high-quality.

3. Development of the Language Service Industry in Hubei Province

The year of 2017 has witnessed the rapid development of China's artificial intelligence industry. The good development of artificial intelligence industry in Hubei Province has accelerated the breakthrough of man-machine interactive translation technology. The enterprises related to artificial intelligence located in the Optics Valley have already exceeded 100, forming a group of characteristic industries such as speech recognition, machine vision, driverless car, and intelligent robots.

As the development of artificial intelligence, the machine will complete most of the simple translation tasks in the future, but it cannot replace the delicate, diversified and professional translation services with human characteristics. Therefore, AI machine translation is not the terminator of the translation industry. Instead, they are the collaborative partners of the translator. In this collaboration, the simple "machine-assisted translation" (CAT) era has come to an end and it has been replaced by the man-machine intelligent translation model.

4. Development of Language Services in the Context of Artificial Intelligence

4.1 Research on Language Services

The research has included the translation industry chain, the key technology of man-machine translation, the upgrading of auxiliary translation tools, and the role orientation and professional ability of translators in machine translation management.

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The translation industry chain is one of the most extensive industrial chains across the world. The complete translation industry chain includes translation service outsourcing, professional translation training, translation of Chinese and foreign books and film and television works, hosting of translation industry exhibitions and academic conferences, supply of information services, development and sales of translation software, localization services and translation outsourcing. The translation industry is a sunrise industry with long industrial chain and large correlation effect. In a large industrial chain, completing tasks with high-quality and efficiency require the translation platform of artificial intelligence model and translators who is proficient in AI.

4.2 Structure of the Application System of Man-machine Translation Service (Interactive Platform of Man-machine Translation)

It includes the application of enterprise NMT system and micro-NMT system, the types of translators in the translation industry and the knowledge system they built as well as how to apply man-machine translation technology to the existing main customer terminals and products of the Internet of Language. Wuhan Huaxia University of Technology and the Trans introduced the deep learning theory and related technology in the artificial intelligence in 2016and completed the technical verification and prototype development of machine translation (NMT) products in early 2017. They are now testing and optimizing the various soft wares through translation project management.

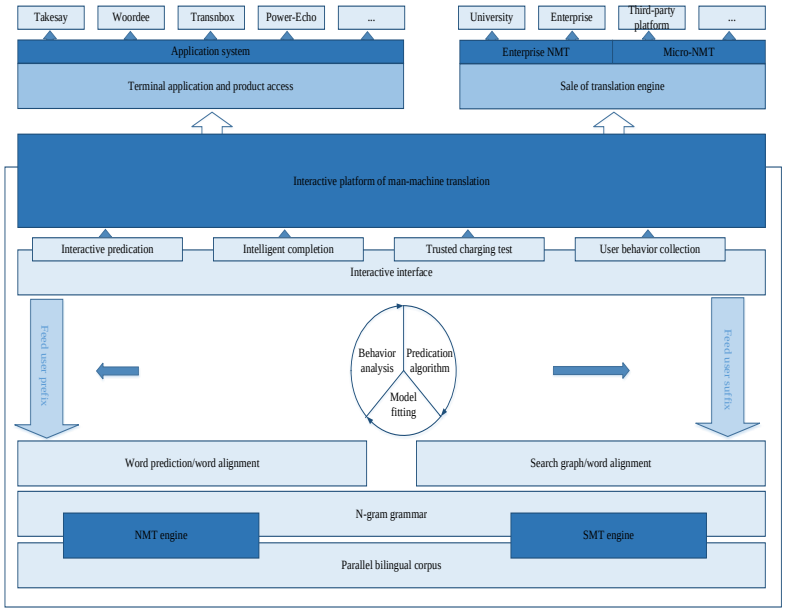

Figure 1 Man-machine translation interactive platform

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4.3 Solving the Problem of "Talents" in the Man-machine Translation

Translation talents with AI concept should be cultivated and the knowledge and skill structure of talents should be emphasized as a way to meet the requirements of translation talents in the language service industry under the man-machine translation mode.

At present, there exists the gap between the foreign language graduates and the demand for talents in man-machine translation. Colleges and universities lack MT technical talents. Foreign language talents cultivated in colleges and universities are not familiar with the IT environment of the translation industry and they do not have in-depth knowledge of project management and technical translation. Graduates are basically in a monolingual state. In other words, foreign language graduates have mastered basic language knowledge and basic language logic but they lack translation experience and only have basic knowledge of word processing. Translation don't embody the professional knowledge and foreign language graduates lack professional knowledge, such as professional terms and professional expression habits. They also lack the feedback training model and high-quality corpus in college vertical industry. These difficulties hinder the development of talents in the language service industry in the context of artificial intelligence, which affects the development of the industry.

5. Research on the Strategy of Language Service in the Context of Artificial Intelligence

5.1 Talent Assurance Strategy

The man-machine translation puts forward higher professional requirements for foreign language talents. The human translation will be mainly aimed at the high-end market with strict requirements on translation accuracy. Machine translation and human translation will occupy different shares in the market and realize dislocation competition.

Wuhan Huaxia University of Technology cooperates with the Transn to solve the problem of talents training in the language service industry in the man-machine translation. A talent training system that combines the translation language skills and machine translation should be established. It should pay attention to the application of artificial intelligence, strengthen the connection with various industries, and establish an artificial intelligence curriculum system. Universities should cooperated with enterprises to train translators under the man-machine translation mode

a. Building of Personalized Translation Engine for Colleges and Universities by University and Enterprise

b. Modifying the Talent Training Plan of Colleges and Universities, Strengthening the Training of Machine Translation Tools and Allowing Students to Directly Participate in Translation Projects

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c. Arrangement and Finding of Corpus Data from Key Industry

d. Simulation of Vocational Scenes and Gathering of Massive Corpus Data to Support Teaching Needs

The School of Foreign Languages from Wuhan Huaxia University of Technology has accumulated many years of translation theory and practical ability. These combine with the research and development capabilities of the Transn, which forms a multi-language service based on neural network. The interactive platform of man-machine translation should be improved. The result of machine translation is closer to the true expression intention of human beings through man-machine interaction training.

In the process of substantive cooperation between the two sides, the talent training required for man-machine translation is incorporated into the talent training program of colleges and universities, so that machine translation and language learning are closely connected. This enables that graduates can directly serve as senior translators and reach the standard of man-machine translation after graduation.

5.2 Language Service Strategy

The language service strategy is mainly to build language networking model based on the AI, which solves the two problems including capacity scale and application of language services. AI plays a role in the entire process including translator selection, quality control, and professional machine capacity, which provides the best translation results and professional solutions for customer needs rather than address primary translation needs.

a. Upgrading of Technology in the Language Service Industry by Man-machine Translation

The development of this project will greatly promote the application of man-machine translation in various industries, solve the practical needs of users, promote the deep penetration of AI in the language service industry and help the transformation and upgrading of domestic language service industry.

b. Helping Hubei Province to Seize the Opportunity of the Development of Artificial Intelligence and Language Service

In the past three years, the scale of language and information industry in Hubei has doubled every year. Wuhan Huaxia University of Technology and the Transn will promote the formation of a language innovation industry cluster of 100 million-level output value in the East Lake Demonstration Zone through the research and development of this project as a way to help Hubei to seize the opportunities to develop multi-lingual industry.

c. Terminal Application and Product Access

It should transform and optimize the existing CAT tools and connect with the

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NMT translation API to realize and integrate NMT interactive translation, translation memory, term base assistance, knowledge mapping, translator matching and other technologies. In addition, it should use man-machine translation technology to greatly reduce the cost of human translation for related applications of the language networking platform, while improving translation efficiency, making it a key capacity provider in the language networking service system.

6. Conclusion

This paper makes analysis from the development of artificial intelligence in Hubei province to the demand of talents in the language service industry for man-machine translation in the context of artificial intelligence. This paper proposes that the university and the expressive language networking enterprise should jointly develop a man-machine translation platform and cultivate talents, which can save time and cost in the language service, change the ability model of translators and satisfy the need of the strategy research of regional language services.

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