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КУРСОВА РОБОТА

З ПЕРЕКЛАДУ

Поліпшення якості автоматизованого перекладу з англійської мови на

українську

студентка групи МЛа 05-21

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LIST OF ABBREVIATIONS

CAT – automated translation, computer-assisted translation

ALPAC – Automatic Language Processing Advisory Committee

MT – Machine translation

DTP – Desktop publishing

RBMT – Rule-based machine translation

SMT – Statistical machine translation

NMT – Neural machine translation

INTRODUCTION

Relevance of the research. Along with the high-speed development of digital communication and international interaction and alliances, the need for accurate and fast translation services has exponentially spiked. This demand is especially apparent in places where English is not the dominant language, such as Ukraine where the need for translations of high quality into the Ukrainian language is extremely important for the realization of various communicative tasks e.g. commerce, diplomacy, cultural exchange etc. Upgrading the quality of the automated English-to-Ukrainian translation can be a key factor in making communication faster and seamless between English and Ukrainian speakers. This will not only help them to better understand each other but will also pave the way for cooperation.

The languages used in Ukraine and those of business organizations which want to sell their products to customers in Ukrainian-speaking markets often require the services of a translator to adapt their goods, services and marketing campaigns. It is impossible to do justice to the brand message and make it legally compliant without precise and gracious translations.

The primary objective of the perfect rendering is to boost market commercialization effectiveness. In this respect, the lately developed outcomes of automated translation may contribute greatly to a reduction of the procedures time and this generally will lower time and resource consumption and promotion causes. Governmental organizations and embassies need translation services for interaction with representatives from foreign nations as well as negotiation of agreements, implementation of policies and reporting information to people from different cultural settings.

Therefore, the proposed research work focuses on the issue of improving translation for Ukrainians in various fields. Also, the issue of integrity in the use of all kinds of automated assistants is relevant, especially at a time when computer technology is developing at an incredible rate. Many people are concerned about

the appropriateness of constantly using such translation resources that do all the work for the student. The question arises of their ability and skills to provide high-quality human translation against the backdrop of such progress in the development of automated resources. This determines the relevance of this term paper.

The **aim** of the study is to find ways to improve the quality of automated translation from English into Ukrainian.

The research involves the following **tasks**:

● to clarify theoretical knowledge about automated translation, its development and its types;

● to highlight the advantages and disadvantages of automatic translation;

● to discuss issues regarding the process of automatic translation and some of its peculiarities.

The **object** of the research is automated translation as translation using computer technologies.

The **subject** of the research is the peculiarities and possible difficulties in the field of automated translation.

The research **material** is based on various scientific papers, corporas, user reviews and human evaluations.

The **contribution** of the research work for the development of automated translation from English into Ukrainian languages deals mainly with the nuances of the English and Ukrainian languages such as linguistic patterns, syntactic structures and semantic distinction. Through error pattern analysis as well as highlighting problems unique to some languages, this study helps to enhance the knowledge of how language interfaces. Uncovering the underlying technologies and mechanisms of machine translation algorithms by analyzing different machine-translation architectures and methodologies provides theoretical insights into the processes that are behind the technology. Developing a set of comprehensive and pragmatic assessment principles and benchmarks that are customized to English-

Ukrainian translation allows one to focus on the principles and scales by which a translator can check translation accuracy and fluent pronunciation of the language. The direction of the research is machine translation fitting the English-Ukrainian language pair, based on the sufficient language dataset. Achieving this is possible through such models of translation optimization and data augmentation. Thus, this research does this by making the use of automatic translation in formal situations possible. Better language translation utilization enables people and organizations who share offline time to make smoother cross-cultural communication with English-Ukrainian-speaking figures. The results of this study provide the bridge for the linguistics barriers and lead to intercultural communication and intermural collaboration, which though enhanced to various domains like business, academia, diplomacy and media.

CHAPTER ONE.

THEORETICAL FOUNDATIONS OF AUTOMATED TRANSLATION

1.1 History of automated translation

Automated translation (also *computer-assisted translation* or *CAT*) is a translation of texts using computer technology.Attempts to automate translation date back to the 17th century, with early efforts involving a mathematical meta-language. Mechanical translation machines were developed in the 1930 and 1940, and electronic calculating machines were considered for translation after World War II. The first successful demonstration of a machine translation system took place in 1954 at Georgetown University. However, the ALPAC-Report in 1966 led to a halt in government funding for machine translation in the USA (Hutchins, 1986).

Today, researchers focus on tools to assist translators, as the goal of fully automatic high-quality translation is not expected to be achieved soon. The development of computer hardware and software has made professional translation reliant on various tools. These tools aid in terminology research, multilingual editing, terminology management, and translation memory.

Terminology research now relies on the internet, offering access to online databases and resources. Discussion lists and forums also provide opportunities for knowledge exchange between translators. Multilingual editing and word processing systems have evolved to support various languages and country-specific formats. Terminology management systems allow translators to compile and manage terminological data from different sources.

Translation memory tools are used to search for and reuse previous translations, and they are often integrated with terminology management systems. Some machine translation systems combine traditional approaches with translation

memory technology. Tools for automated translation are necessary for technical translators who work on repeated projects with specialised subject matter.

Efficient use of these tools may require new workflow organization by translators, and training is recommended before using them in real translation projects. The use of the internet has also transformed the process of researching and managing information retrieval, as well as communication between translators and customers and project management.

1.2 Main methods of automated translation

As was mentioned, automated translation uses computer technologies for translations. It is not the same as machine translation (MT) because the whole translation process is performed by humans and the computer only helps to create the finished text in less time or with better quality. But at the same time, CAT is closely interlinked with MT and uses some machine translation engines which will be discussed further. Also, it is worth mentioning other core components of a CAT tool which are in use, namely translation memory, termbases where the terms are stored, dictionaries and DTP (desktop publishing) (Kornacki, 2018).

1.2.1 Rule-based machine translation

Since RBMT was the pioneer of machine translation, it is a comparatively developed field in this domain. The rules, which represent syntactic knowledge, and the lexicon, which handles morphological, syntactic and semantic information, are the two main parts of RBMT systems (Lagarda et al., 2009). Lexicons and rules are produced by professional linguists and are based on linguistic knowledge. As a result, it brings a lot of complexities, in money as well.

The principle of operation is as follows: first, there is a morphological analysis. So different parts of speech, phrases and words are extracted from the input source sentence by linguistic analysis. There are two processes in the lexical transfer phase: word translation and grammatical translation. Suffixes are translated in grammar translation and source language root words are substituted

with target language roots in word translation with the use of a bilingual dictionary. Then there is a generation phase where words are under some modifications and adjustments (concerning gender, number etc.). This guarantees that the subject‟s verbs and objects have the same gender as the subject and that the number, gender and person of local groupings of phrases correspond.

1.2.2 Statistical machine translation

Statistical machine translation is a type of machine translation based on comparing parallel corpus of bilingual pairs. The advantage of this method is that the machine itself learns to translate using examples of these language pairs, which can be viewed from different angles and provide different contexts.

This method‟s basic idea is to utilise statistical models in searching for similarities between two texts - the original and the target language - that deal with the same subject. This method works with words, phrases and sentences.

Concerning words, estimating the probability that a word in the source language will be translated into a word in the target language is the goal of this method for SMT models (Sreelekha, 2017).

Talking about phrases and sentences, they are broken down into small parts where each word is analyzed separately and only then certain connections and correspondences are built.

1.2.3 Neural machine translation

NMT stands for neural machine translation and it is a way of translating accurately by using an artificial neural network (Wu et al., 2016).

By training a sizable neural network to optimise translation efficiency, neural machine translation is a novel method of machine translation. Compared to current phrase-based statistical techniques for translation, where the translation system is made up of independently optimised components, this is an important

shift. Special relations are used to encode the source sentence and anticipate words in the target language.

NMT networks feature are not only able to look at a word or a phrase but also the way they fit in the context of a sentence or a text as a whole. In this way, they will not forget to regard syntactic and semantic relationships between words and phrases which is respectively very significant for ensuring a high level of translation (Wu et al., 2016).

A key challenge in every NMT approach is modelling the structure of words and their connections to other words in a phrase (Belinkov et al., 2019). The way information is encoded in words varies throughout languages. Certain languages use word form to express grammatical connections (such as subject, object, predicate, or gender agreement), whereas other languages use particle addition or word order changes to accomplish the same goal. There are a wide variety of word variations that might occur. As a result, the NMT technology restricts dictionary size, enabling quicker and more accurate translation. Furthermore, the meaning of words, or lexical semantics, is better represented by this approach. This suggests a deeper comprehension of the definitions of specific terms.

1.3 Advantages and disadvantages of automated translation

Our daily lives are becoming more and more automated as a result of robots and artificial intelligence (AI) taking over jobs that people once performed (Rodríguez, 2019). In translation as well. It is predictable that in such a situation there are pros and cons. For some this global automatization is a God bless and for others, it is a risk of taking people‟s freedom and desires. The rise in demand for translation has been met with solutions by information technology. Text localization has been made easier by digital technologies like machine translation (MT), computer-assisted tools (CAT), translation memories and terminological databases and glossaries, all of which have become commonplace in the translation industry and have a wide range of usability (Rodríguez, 2019).

One of the main disadvantages and advantages is the rapid growth and development of online translators. The well-known Google Translate, DeepL and other automated assistants can do almost all translation work for a human. This saves a lot of time and effort, but is there any danger in doing so? On the one hand, it's perfectly normal to use such resources from time to time. Especially in cases of translating some official documents, statements, etc. with specific vocabulary that we may forget or simply not know. However, there should be a clear line, crossing which will result in total abuse of artificial intelligence. In the case of students, as potential translators, this makes the situation even more serious. The misuse of artificial translators, which are somehow related to automation, can lead to a decrease in the quality of speech and language comprehension, as students may overly rely on automatic translation without learning the language on their own. In addition, such translation sometimes lacks emotional colouration and feelings. In fictional texts, where this plays an important role, it can lead to a poor-quality translation.

It is also worth noting certain nuances of human language that are not always reliably translated, such as idioms, phrasal verbs, certain wordplay and figurative meanings. A literal direct translation is not always able to process this material correctly and efficiently on its own. Therefore, this proves that human effort, especially in the development and training of automated machines mentioned above, is extremely important.

Some words may be transliterated by automated translation programs instead of being translated. In these situations, selecting synonyms and rearranging the sentence's structure are required. Therefore, it is frequently necessary to modify or edit the translation. It is a laborious task that requires a significant amount of time and energy. The employment of CAT tools by certain businesses is viewed as a danger to the industry, and there is still significant worry about MT as some believe it will replace human translation work.

Automated translation methods are rule-based machine translation (RBMT), statistical machine translation (SMT) and neural machine translation (NMT).

RBMT is based on linguistic rules and dictionaries, while SMT uses parallel corpora of bilingual pairs to analyze translation. NMTis used to work with artificial networks to achieve accurate translation as it goes neural (*What Is Machine Translation in Linguistics?*, n.d.)

In conclusion, there is no denying that automation benefits translators in the workplace. For example, it simplifies the translation of texts into finished products of higher quality while freeing up human labour for similar repetitive tasks. However, in a market with competition, MT can cut translators" contribution and importance.

Conclusions to Chapter One

Automated translation has a rich history. Today, the internet has revolutionized terminology research, providing access to online databases and resources. Additionally, multilingual editing systems have evolved to support various languages and formats, while translation memory tools facilitate the reuse of previous translations.

Despite its advantages, automated translation also has drawbacks. While it offers speed, cost-effectiveness and consistency, it may lack accuracy and fail to capture nuances, leading to misunderstandings. Additionally, we still use automated translation programmes that can do us a bad favour as we use language less and less. Concerns also exist regarding the potential displacement of human translators and the erosion of translation quality.

While automation has streamlined translation processes and improved efficiency, human involvement remains crucial for ensuring accuracy, preserving linguistic nuances, and mitigating the risks associated with overreliance on automated translation tools.

It is also vital to recognise the advancement of automatic translation systems. As progress continues, we may witness the incorporation of machine learning techniques into translation procedures, resulting in the development of

advanced systems. These enhancements have the potential to remove existing limitations, allowing for better interpretation of expressions and cultural nuances.

In addition, the future of automated translation is expected to be characterised by growing collaboration between translators and technology. Instead of seeing automation as a threat to translation practice, it can be viewed as a supplement that boosts efficiency and productivity. Translators can focus their attention on jobs requiring creativity, cultural understanding and linguistic skills, while automated technologies handle the technical components of translation.

The availability of automated translation systems has increased the accessibility of translation services worldwide, allowing more people and organisations to benefit from them. This accessibility has resulted in a significant increase in demand for translation in a variety of industries and fields, opening up new opportunities for translators and linguists.

Finding a balance between automation and human input is ultimately what determines how effective automated translation is. While automation can simplify tasks and enhance efficiency, human monitoring is still required to ensure accuracy, meet quality standards and maintain linguistic coherence in communication.

The combination of knowledge and technology breakthroughs in the future era of translation reveals the ability to provide high-quality, culturally responsive translations all across the world.

CHAPTER TWO.

ISSUES IN THE QUALITY OF AUTOMATED TRANSLATION FROM ENGLISH INTO UKRAINIAN

2.1 Lexical problems in translation

In my opinion, lexical problems in an automated translation from English to Ukrainian are among the most difficult and important because they include such problems as neologisms and non-equivalent vocabulary, set expressions (idioms), noun clusters, phrasal verbs and so-called "false friends of a translator" i.e. words that look similar in two languages but have different meanings. We will consider each of them in turn.

2.1.1 Neologisms and non-equivalent vocabulary

A newly created or invented term that has begun to become commonplace is called a neologism.

For example, let‟s imagine that we are back in 2014 and you hear that someone is saying "Let me take a _selfie_" (The Chainsmokers, 2014).

You are confused and decide to translate such a phrase, but you cannot have a proper translation of it because the word „_selfie"_ is new. So, the translation would be more like this: "Дай мені зробити _фотографію власними руками_". Over time, the word „_selfie"_ has become widely used and popular, so now there is no problem with its translation and everyone is simply calling it „_селфі"_ (_DeepL Translate: The World"s Most Accurate Translator,_ 2024).

Concerning non-equivalent vocabulary, they are words of original origin that in one way or another indicate certain cultural, social, or spiritual features of the country.

"One of the first things you‟ll notice about most _pubs_ are their colourful signs or their interesting names." (Dunn, 2017) – "Перше, що ви помітите в

більшості _пабів_ - це яскраві вивіски або цікаві назви." (DeepL Translate: The World‟s Most Accurate Translator, 2024).

The word „_pub_‟ is a contraction of the phrase „_public house_‟, so in this context, it is considered to be non-equivalent because it cannot be fully conveyed by the specific Ukrainian equivalent.

2.1.2 Idioms in the automated translation

This is one big problem with many automated assistants because direct translation does not work here.

"Now I celebrate by eating cherries with equal delight before I _kick the bucket_." (Hopkins & Simons, 2015) – "Тепер я святкую, з‟їдаючи вишні з однаковим задоволенням перед тим, як _помру (вріжу дуба)_". (_DeepL Translate: The World‟s Most Accurate Translator_, 2024).

This is the only possible translation of the idiom „_kick the bucket_‟, but usually it is translated directly as „_вдарив відро_‟ which doesn‟t make any sense here. As we see, such translation services are not always competent in translating idioms, especially those that are not very common. So, there is a lot of work needed to develop different CAT tools for the correct translation of such contradictory lexical items.

2.1.3 Noun clusters in the automated translation

"The _energy innovation process_ is a complex network of market and nonmarket institutions and incentives that includes public and private research and educational institutions…" (National Academies of Sciences, Engineering, and Medicine, 2016) – "_Енергетичний інноваційний процес_ - це складна мережа ринкових і неринкових інститутів та стимулів, що включає державні та приватні науково-дослідні та освітні установи…" (_DeepL Translate: The World‟s Most Accurate Translator_, 2024).

In this case, the noun cluster „*energy innovation process*", which consists of three nouns has to be translated as „*енергетичний інноваційний процес*" where the first noun acts as an attribute. It cannot be translated as „*енергетика інновація процес*".

2.1.4 Phrasal verbs in the automated translation

Phrasal verbs, like idioms, are also quite difficult to translate correctly. While the other problems mentioned earlier are not so bad, phrasal verbs are often translated in their literal meaning. However, due to their specific structure, depending on the adverb particle that stands next to them, the meaning can change. For example:

"Eventually those who haven"t <u>come around</u> to that reality will." (Montanaro, 2024) – "Зрештою, ті, хто ще не <u>визнає</u> цієї реальності, це зроблять." (*DeepL Translate: The World"s Most Accurate Translator*).

Here, it cannot be translated as „*прийти, заходити*". In the process of translation, DeepL was unable to correctly convey the meaning of this phrasal verb without human assistance. So, we need to teach CAT tools how to use different translations depending on the context.

2.1.5 "False friends of a translator" in the automated translation

False friends are words that look similar in two languages but have different meanings. For example, the word „*actual*" is not the same as Ukrainian „*актуальний*". Correct examples are as follows:

"Are there differences in <u>*actual*</u> translation behaviours (translation time, orientation time, revision time, online revision, online assistance, and scores) between direct translation and inverse translation of cultural references?" (Qassem & Thowaini, 2023) – "Чи існують відмінності у <u>*реальній*</u> поведінці перекладача (час перекладу, час орієнтування, час редагування, онлайн-редагування, онлайн-допомога та оцінка) між прямим та інверсійним

перекладом культурних референцій?” (*DeepL Translate: The World"s Most Accurate Translator*).

“Libraries are more *relevant* than ever.” (Herrera, 2012) – “Бібліотеки *актуальні* як ніколи.” (*DeepL Translate: The World"s Most Accurate Translator*, 2024).

2.2 Grammatical problems in the automated translation

The various grammatical issues that might appear in an automated translation from English to Ukrainian, will be because of those differences in language rules, sentence structure and order of words.

2.2.1 Inconsistency of verb tenses in the automated translation

Automated translation systems could translate the time of a verbal action described in English the wrong way into Ukrainian, which creates confusion. For example:

“Chinese officials *have been working* on conservation projects for some time.” (BBC News, 2010) – “Китайські чиновники вже деякий час *працюють* над проектами з охорони природи.” (*DeepL Translate: The World"s Most Accurate Translator*).

Due to the fact that the Ukrainian language does not have such complex tenses as the present perfect continuous tense and others, a misunderstanding of the time period may occur and, as a result, an incorrect translation is likely to occur.

2.2.2 Word order in the automated translation

Frequently the word order in English sentences constitutes the sentence structure (subject-verb-object), whereas Ukrainian is capable of being more free-flowing because of the case system. This can be the cause of translation errors since the original meaning may be lost and also the grammatical rules of the target language are violated.

For example: "Filled of incense cedars the scent the morning air." – "Наповнене пахощами кедрів ранкове повітря." (DeepL Translate: The World"s Most Accurate Translator, 2024).

The correct version is "The morning air filled with the scent of incense cedars " (Curwen, 2015).

As we can see, due to the incorrect word order in the original sentence, the translation is completely meaningless, which affects the understanding of the context. That"s why I think it"s very important to teach CAT tools such small but important things.

2.2.3 Case irregularities in the automated translation

The Ukrainian nouns feature grammatical cases (nominative, accusative, etc.) which demonstrate what role they play in a sentence. Automated translation may not be able to distinguish between the alternate forms of a word as its context may confuse. For example:

"John Kennedy, who taught _Brown_ this year, saw it." (Lowery & Frankel, 2014) – "Це бачив і Джон Кеннеді, який навчав _Брауна_ цього року." (DeepL Translate: The World"s Most Accurate Translator, 2024).

It would be wrong to say „Це бачив і Джон Кеннеді, який навчав _Браун_ цього року" because it does not comply with the grammatical rules of the Ukrainian language.

2.2.4 Gender system in the automated translation

The Ukrainian language has a grammatical gender system of declining nouns, which is lacking in English. As a result, such sentences can confuse the automated translation tools while translating a sentence where the English text does not mention the subject"s gender. For example:

"She is a _friend_ of Pope Benedict and author of such improving works as "Lourdes. My Days in the service of Mary" (The Economist, 2008) – "Вона є

другом Папи Бенедикта і авторкою таких творів, як "Лурд. Мої дні в служінні Марії" (*DeepL Translate: The World"s Most Accurate Translator*, 2024).

"She can think whatever she pleases, but she is an *employee* of the American people and has taken an oath to uphold the Constitution like every other White House employee." (Alloush et al., 2013) – "Вона може думати все, що їй заманеться, але вона - *представник* американського народу і дала присягу дотримуватися Конституції, як і кожен інший працівник Білого дому." (*DeepL Translate: The World"s Most Accurate Translator*, 2024).

In general, there is nothing wrong with these translations, but it is advisable to teach CAT tools feminine forms and such possible translations as *„приятелька"*, *„представниця"* etc.

2.3 Stylistic problems in the automated translation

Stylistic problems in automated translation from English to Ukrainian may arise due to differences in language registers, cultural nuances and rhetorical features of the two languages.

2.3.1 Irregularities in the automated translation

English has different registers that vary stylistically (formal, informal, semi-formal etc.) according to the context. Difficulties may arise in terms of its identification and translation with English-to-Ukrainian automated translation. For example:

"*Hey there*, I for one echo your concerns about the discrimination against Chinese diaspora in Australia." (ABC News, 2020) – "*Привіт*, я, зі свого боку, поділяю вашу стурбованість щодо дискримінації китайської діаспори в Австралії" (*DeepL Translate: The World"s Most Accurate Translator*, 2024).

It would be inappropriate if we translated it as *"Доброго дня!.."* because our context is not formal.

Here can also be mentioned possible dialectisms, colloquialisms, slang and folklorisms.

2.3.2 Expressive means in the automated translation

Expressive means play an important role in literary works. To fully convey the necessary shades and meanings of a word, sentence, etc., CAT tools must be able to translate such elements with high quality. For example:

"She runs around like _a busy bee_ while I drift gently through the Festival." (Mueller, 2018) – "Вона бігає навколо, як _працьовита бджілка_, поки я спокійно блукаю Фестивалем." (DeepL Translate: The World"s Most Accurate Translator, 2024).

A direct translation into Ukrainian "…як _зайнята бджола_…" may not adequately convey the desired simile.

2.4 Semantic problems in the automated translation

Semantic problems in automated translation from English to Ukrainian may arise due to differences in the meaning of words and the context in which they are used.

2.4.1 Direct or figurative meaning in the automated translation

A deciding factor between either using the direct or figurative meaning of a word is the context and in particular the appropriate semantic values of that word in Ukrainian and English. For example:

"The _bear market_ currently underway is becoming an opportunity for entry into the market." (Todaro, 2018) – "_Ринок "ведмедів"_, який зараз триває, стає можливістю для входу на ринок." (DeepL Translate: The World"s Most Accurate Translator, 2024).

Translators might not get the idea behind using „_bear market_" figuratively if they are not familiar with all the peculiarities of financial terms. Hypothetically, it is possible to translate this as a „_ринок ведмедів_", but then the meaning of this phrase must be explained or translated in a descriptive way, i.e. as „_біржовий ринок із тенденцією до зниження курсу_".

2.4.2 Synonyms and antonyms in the automated translation

In the automated translation process, synonyms and antonyms can be mapped and used to offer variety in the translated text or a more nuanced meaning that is present in the English text. For example:

"I saw how _happy_ and revitalized he was taking on a new challenge." (Justin, 2021) – "Я бачив, з яким _задоволенням_ і натхненням він приймав новий виклик." (DeepL Translate: The World"s Most Accurate Translator, 2024).

There are many other ways to translate the word „happy" such as „_щасливий; веселий; вдалий; сприятливий_", but choosing the right synonym should be based on context, the formality of the statement and appropriateness.

Our automated assistants must be able to use different shades of a word depending on the context and prerequisites, as well as have antonymic relations to them.

Conclusions to Chapter Two

Automated translation from English to Ukrainian faces lexical, grammatical, stylistic and semantic challenges. Lexical issues include neologisms, non-equivalent vocabulary, idioms, noun clusters, phrasal verbs and false friends. Grammatical problems involve verb tense inconsistency, word order, case irregularities and gender system differences. Stylistic challenges encompass register irregularities and expressive means. Semantic issues arise from direct or figurative meanings and the use of synonyms and antonyms. Research shows that in many cases, the translation is of high quality and understandable, but in some cases, a human must help automated systems convey the desired meaning. Therefore, these complexities require careful consideration and development of such systems for accurate translation.

New words, expressions, and cultural nuances continue to emerge as language continues to evolve, creating a constant challenge for automated translation systems. What"s more, the aspect of contextual language use brings

another complexity since the meaning of words and phrases can change depending on the context in which they are used.

Cultural context also plays an important role in translation, as certain expressions, idioms and references may not have direct equivalents in another language. This cultural insight is essential for precise and accurate communication, which emphasizes the need for automated translation systems to include such culturally relevant knowledge and awareness in their corpora.

The translation challenges highlighted in the research chapter above require a complex approach that includes advanced automated translation system algorithms and rich linguistic assets. It also requires ongoing research and development to improve the accuracy, efficiency and usefulness of automated translation systems. With the use of enhanced technology as well as the integration of human expertise, automated translation can evolve in order to fulfill the divergent language requirements of people, contributing to the smooth interaction and understanding of communication in an evolving global society.

GENERAL CONCLUSIONS

Automated translation led to the engineered accomplishments marked with the current trend. It has had its ups and downs, but today we have a well-developed computer-assisted translation industry. The major approaches of machine translations like the rule-based machine translation, statistical machine translation and neural machine translation, which are popular with users at present, are predominantly focused on expounding on the method of their functioning and their advantages with disadvantages. On the other hand, rather than relying solely on computers to translate different languages, humans still have important functions such as the need to keep translation accurate or create written works based on linguistic aspects.

Some problems in the quality of translation systems from English to Ukrainian were met. The main are lexical, grammatical, stylistic and semantic markers of a problem. Each of them has its uncertainties and controversies, which will become fewer and fewer if you constantly learn and develop CAT tools. We should be very careful when it comes to the development and implementation of them to overcome the problems it may cause as well as to deliver absolute translation.

RÉSUMÉ

Курсову роботу присвячено темі поліпшення якості автоматизованого перекладу з англійської мови на українську.

У цій науковій праці висвітлено теоретичні питанні історії розвитку автоматизованого перекладу, його основні методи та види, переваги та недоліки автоматизації перекладу та її вплив на життя людини.

Проведено аналіз головних труднощів при автоматизованому перекладі з англійської на українську на основі CAT-програм та її похідних.

За допомогою зіставлення отриманого перекладу з англійської на українську наочно показано неточності при використанні певних автоматизованих ресурсів.

Ключові слова: CAT tools, automated translation, Rule-based machine translation (RBMT), Statistical machine translation (SMT), Neural machine translation (NMT), English, Ukrainian.

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№	Original	Translation	Transformation
1	Unfortunately, that"s all we"_ve got_ time for this afternoon.	На жаль, це все, на що у нас _є_ час сьогодні.	Inconsistency of verb tenses
2	Australians are _clearly_ concerned about the state of relations with China.	Австралійці _явно_ стурбовані станом відносин з Китаєм.	False friends of a translator
3	It was my great pleasure to answer _your_ questions in the past three hours!	Мені було дуже приємно відповідати на _ваші_ запитання протягом останніх трьох годин!	Irregularity in the formality of the expression
4	Ability might affect _labor market outcomes_, including earnings.	Здібності можуть впливати на _результати на ринку праці_, в тому числі на заробіток.	Noun clusters
5	The Giant Forest _was named_ by naturalist _John Muir_, who walked through these groves more than a century ago.	Гігантський ліс був названий натуралістом _Джоном М"юром_, який прогулювався цими гаями понад століття тому.	Inconsistency of verb tenses, case irregularity
6	"These are _tough_ trees, but we"re entering a whole new era," he said.	"Це _міцні_ дерева, але ми вступаємо в абсолютно нову еру", - сказав він.	Synonyms
7	That makes it nearly impossible for Haley _to catch up_.	Тому для Хейлі майже неможливо _наздогнати_ його.	Phrasal verb
8	That could mean that Trump	Це може означати, що	Gender system

		could consider her for his *vice president*.	Трамп може розглянути її кандидатуру на посаду *віце-президентки*.	
9		*It is noteworthy* that the *development needs* for this critical industrial base is absent in the *election debates*.	*Показовим є те*, що потреби розвитку цієї критично важливої *промислової бази* відсутні у *передвиборчих дебатах*.	Irregularity (empty subject), noun cluster
10		Kidding aside, we continued to buy crypto despite the persistent *price slump*.	Жарти жартами, але ми продовжували купувати криптовалюту, незважаючи на постійне *падіння цін*.	Neologism
11		First introduced to *Bitcoin* in 2012, and buying in heavily in 2014 and 2015…	Вперше познайомившись з *біткоїном* у 2012 році та активно купуючи його у 2014 та 2015 роках…	Neologism
12		…we have traded during both the exuberant *bull markets* in crypto as well as the devastating *bear markets*.	…ми торгували як під час *буйних криптовалютних ринків*, так і під час руйнівних *ведмежих ринків*.	Figurative meaning
13		Since 2014, we have talked about *crypto* investment strategies nearly every day.	Починаючи з 2014 року, ми говоримо про стратегії інвестування в *криптовалюту* майже щодня.	Neologism
14		This index was one of the first longterm *altcoin*	Цей індекс був одним з перших довгострокових	Neologism

	indices in the space.	індексів _альткоїнів_ у світі.	
15	With _cumulative_ gains in total capital over 10,000% after some _aggressive_ well-timed positions…	З _сукупним_ приростом загального капіталу понад 10 000% після кількох _дієвих_, вчасно відкритих позицій…	Synonyms
16	…we are comfortable making these professional sacrifices and are excited to pursue _blockchain_ full-time.	…нам комфортно йти на такі професійні жертви, і ми з радістю продовжуємо займатися _блокчейном_ на повну ставку.	Neologism
17	Stay tuned for future blog posts from _Joseph, John_ and myself on our digital asset management strategies and insights into the state of the market and _token_ economy.	Слідкуйте за майбутніми публікаціями в блозі від _Джозефа, Джона_ і мене про наші стратегії управління цифровими активами і розуміння стану ринку і _токенової_ економіки.	Neologism, case irregularities
18	I _kept on_ seeing him look at me while he was with that other girl.	Я _не переставала_ бачити, як він дивиться на мене, поки він був з іншою дівчиною.	Phrasal verb
19	And I don‟t know if it‟s a _booty call_ or not.	І я не знаю, чи це _дзвінок на побачення_, чи ні.	Slang
20	What a creep!	Який жах!	Colloquialism
21	That‟s so ratchet!	Це так дратує!	Colloquialism

22	Who *goes out* on Mondays?	Хто *гуляє* по понеділках?	Phrasal verb
23	OK, let's go take some *shots.*	Гаразд, давай зробимо кілька *кадрів.*	Synonym
24	Oh no, ugh I feel like I'm *gonna throw up.*	О ні, здається, мене зараз *знудить*.	Colloquialism, phrasal verb
25	*Scholars* have explored the issue of culture from different perspectives, such as cultural studies, discourse analysis, contrastive analysis, and translation studies.	*Науковці* досліджували питання культури з різних точок зору, таких як культурологія, дискурс-аналіз, контрастивний аналіз та перекладознавство.	False friends of translator
26	Despite the fragile nature of this *seedling of a piece*, I felt safe on stage.	Незважаючи на крихку природу цього *зародка твору*, на сцені я почувалася в безпеці.	Figurative meaning
27	Maybe the *actual* committing to anything definite was a challenge.	Можливо, *саме* взяття на себе зобов'язань щодо чогось певного було викликом.	False friends of translator
28	Every time we met, we had fun „playing" but struggled to find and commit to a *back-bone* for the play.	Кожного разу, коли ми зустрічалися, нам було весело "грати", але ми намагалися знайти і взяти на себе зобов'язання щодо *основи* для п'єси.	Figurative meaning
29	This wasn't helped by our disjointed time-schedules which only allowed us to	Цьому не сприяв наш розрізнений графік, який дозволяв нам *поринати* в	Phrasal verb

	dip in and out of the work space every few months…	робочий простір лише раз на кілька місяців…	
30	No, not from my side, but I guess Josie discovered what a *wuss* I can be when it comes to certain tasks.	Ні, не з мого боку, але, гадаю, Джозі виявила, якою *слабачкою* я можу бути, коли справа доходить до певних завдань.	Slang (colloquialism)
31	…does it always feel very *parent-child*?	…чи завжди це відчувається, як *стосунки між батьками і дітьми*?	Noun cluster
32	What are your *respective* approaches…	Які ваші *відповідні* підходи…	False friends of translator
33	*to getting the most out of it*, and to looking after yourselves?	*для того, щоб отримати максимальну віддачу від цього* та піклуватися про себе?	Idiom
34	…while Josie - who has two shows up here as a performer and producer - *soaks up* its spirit to the full.	…в той час як Джозі - яка вже двічі виступала тут у якості виконавиці та продюсера - *вбирає* в себе його дух на повну.	Phrasal verb
35	Something autobiographical, something *twee*, something ThisEgg or something Hoipolloi.	Щось автобіографічне, щось *витончене*, щось ThisEgg або щось Hoipolloi.	Colloquialism
36	We did start *to hang out* more as friends and *equals* (as well as of course still	Ми почали більше *проводити час* як друзі та *однолітки* (а також,	Phrasal verb, synonym

	being mother and daughter).	звичайно, як мати та донька).	
37	And this is a state that, in theory, Haley should have _had a shot_ in.	І це держава, в якій, теоретично, Хейлі _мала б отримати шанс_.	Idiom
38	Even though Haley exited the _race_ on Wednesday…	Незважаючи на те, що Хейлі зійшла з _дистанції_ в середу…	Synonym
39	Some people used to say I was running because I really wanted to be _vice-president_.	Дехто казав, що я балотуюсь, бо дуже хочу бути _віце-президенткою_.	Gender system
40	She"s _leapfrogged_ other GOP candidates (remember Ron "DeFuture" DeSantis?).	Вона _випередила_ інших кандидатів від Республіканської партії (пам'ятаєте Рона "DeFuture" ДеСантіса?).	Figurative meaning
41	And the Republican Party has rewarded _runners-up_ in past years.	А Республіканська партія нагороджувала _тих, хто посів друге місце_ в минулих роках.	Figurative meaning
42	But all of that likely depends on her _coming around_ to Trump, like she did in 2016, because this is Trump"s _party_.	Але все це, швидше за все, залежить від того, чи _змінить вона своє ставлення_ до Трампа, як це сталося у 2016 році, адже це його _партія_.	Phrasal verb, synonym
43	And the country has very set in views of both _men_.	І країна має дуже усталені погляди на обох _людей_.	Gender system
44	That"s largely unchanged	Це майже не змінилося	Noun cluster

	for Trump over nine years in the *public spotlight*.	для Трампа за дев¨ять років перебування в *центрі уваги громадськості*.	
45	*Biden¨s* approval ratings are *middling*…	Рейтинги схвалення *Байдена середні*…	Case irregularity, colloquialism
46	Everyone has lots of thoughts and feelings about this *election* right now.	Зараз у кожного є багато думок і почуттів щодо цих *виборів*.	False friends of translator
47	And there could be an *up-ballot* effect…	І може виникнути ефект *переголосування*…	Neologism
48	That day, he and the other students passed around a handful of green graduation gowns, *slipping them on and off*, as they posed one-by-one for pictures.	Того дня він та інші студенти передавали один одному кілька зелених випускних суконь, *надягаючи і знімаючи їх*, поки ті позували для фотографій.	Phrasal verb
49	He still had *credits* to earn then.	Йому тоді ще треба було заробити *заліки*.	False friends of translator
50	And 10 days after that, he was to start at a local technical school to learn how to fix furnaces and *air conditioners*.	А через 10 днів після цього він мав розпочати навчання в місцевому технікумі, щоб навчитися лагодити печі та *кондиціонери*.	Noun cluster