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Specialty: Translation

English-Arabic-English-

Investigating Accuracy of Translating and Interpreting into Arabic of Scan Translator
(Scan Translator) Quality and Accuracy

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Dedication

I dedicate this modest work to my beloved Father and Mother for their, patience, care, and continuous support during the five years of my study

Thank you for everything.

To all my family.

Mohammed Oussama LABED

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Abderrahman TABBOUCHA

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List of abbreviations

AI : Artificial Intelligence

ANI : Artificial Narrow Intelligence

AGI Artificial General Intelligence

ASI: Artificial Super Intelligence

CAGR: Compound Annually Growth Rate

DOD: Department of Defence

ESL: English as A Second Language

IELTS: International English Language Testing System

MT: Machine Translation

ML: Machine Learning

MTPE: Machine Translation Post-Editing

MTQE: Machine Translation Quality Estimation

NLP: Natural Language Processing

OOP: Object-Oriented Programming

ST: Source Text

TT: Target Text

TOEFL: Test of English as a Foreign Language

Table of contents

Chapter one:

The Theoretical:

Part one: **Artificial Intelligence**

conclusion

Part Two:

Quality of (AI) scan Translator in translation & interpretation

conclusion

Chapter Two:

The Practical Part

Abstract

Artificial intelligence has significantly improved the translation process, making it more efficient, accurate and accessible. Machine translation systems and computer-assisted translation tools (such as Scan Translator) provide instant translation and real-time interpretation, allowing for faster task management. AI-powered CAT technology also automatically recommends translations based on context and memory. This paper studies translation and provides an in-depth study of Scan Translator. discussing the role of artificial intelligence in translation and its importance to the way translators (scan translator) work and the quality of translations. My contributions include analysis and research on devices, explaining the importance of devices in translation from both pros and cons, and improving attention mechanisms for contextual translation from text to target text, we discuss how to use data from a variety of tasks such as analysis And generating a photo caption, I conclude with how my work influences subsequent research as well as providing in-depth coverage of translation study, and speculating on the future elements needed to enhance MT in translation. We noticed that the scan translator provided a lot of facilities for the user, however, when we use it, we found some errors, therefore, it cannot be reliable in translation and it cannot be compared to the translator(human)

Keywords: *Artificial Intelligence- Machine Translation -Scan Translator-Translations-*

ملخص

لقد أدى الذكاء الاصطناعي إلى تحسين عملية الترجمة بشكل كبير، مما جعلها أكثر كفاءة ودقة وسهولة في الوصول إليها. توفر أنظمة الترجمة الآلية وأدوات الترجمة بمساعدة الحاسوب (سكان ترانزليتر) ترجمة فورية وترجمة فورية في الوقت الفعلي، مما يسمح بإدارة المهام بشكل أسرع. كما توصي تقنية الترجمة بمساعدة الحاسوب المدعومة بالذكاء الاصطناعي بالترجمة الآلية تلقائيًا بالترجمات بناءً على السياق والذاكرة. تدرس هذه الورقة البحثية الترجمة وتوفر دراسة متعمقة للترجمة عن طريق سكان ترانزليتر. وتناقش دور الذكاء الاصطناعي في الترجمة وأهميته بالنسبة لطريقة عمل المترجمين (سكان ترانزليتر) وجودة الترجمات. وتتضمن مساهماتي تحليل وبحث عن الأجهزة، وشرح أهمية الأجهزة في الترجمة من حيث الإيجابيات والسلبيات، وتحسين آليات الانتباه للترجمة السياقية من النص إلى النص الهدف، وأناقش كيفية استخدام البيانات من مجموعة متنوعة من المهام مثل تحليل وتوليد تعليق الصورة، وأختتم بكيفية تأثير عملي على الأبحاث اللاحقة بالإضافة إلى تقديم تغطية متعمقة لدراسة الترجمة، والتكهن بالعناصر المستقبلية اللازمة لتعزيز الترجمة الآلية في الترجمة. لاحظناأنمترجمالمسحالضوئيقدمالكثيرمنالتسهيلاتللمستخدم،ومعذلك،عندمااستخدمناه،وجدنابعضالأخطاء،وبالتالي،لايمكنالاع تمادعليه في الترجمة ولا يمكن مقارنته بالمترجم) البشري)

الكلمات المفتاحية *الذكاء الاصطناعي-الترجمة الآلي-سكان ترانزليتر --الترجمة*

Résumé

L'intelligence artificielle a considérablement amélioré le processus de traduction, le rendant plus efficace, plus précis et plus accessible. Les systèmes de traduction automatique et les outils de traduction assistée par ordinateur (tels que les Scan Translator) fournissent une traduction instantanée et une interprétation en temps réel, ce qui permet une gestion plus rapide des tâches. La technologie de TAO alimentée par l'IA recommande également automatiquement des traductions basées sur le contexte et la mémoire. Cet article étudie la traduction et fournit une étude approfondie de la traduction par balayage. Il discute du rôle de l'intelligence artificielle dans la traduction et de son importance pour la façon dont les traducteurs Scan Translator) travaillent et pour la qualité des traductions. Mes contributions incluent l'analyse et la recherche sur les dispositifs, expliquant l'importance des dispositifs dans la traduction à la fois pour et contre, et améliorant les mécanismes d'attention pour la traduction contextuelle du texte au texte cible, je discute de la façon d'utiliser les données à partir d'une variété de tâches telles que l'analyse et la génération d'une légende de photo, je conclus sur la façon dont mon travail influence la recherche ultérieure ainsi qu'en fournissant une couverture en profondeur de l'étude

de la traduction, et en spéculant sur les éléments futurs nécessaires pour améliorer la traduction automatique en traduction. Nous avons remarqué que le traducteur par balayage offrait de nombreuses facilités à l'utilisateur, cependant, lorsque nous l'avons utilisé, nous avons trouvé quelques erreurs, par conséquent, il ne peut pas être fiable dans la traduction et il ne peut pas être comparé au traducteur) humain)

Mots clés *Intelligence artificielle -Traduction automatique - Scan Translator-Traductions*

Introduction

Statement of the Problem:

Exploring the precision of translation and interpretation into Arabic using Scan Translator reveals a diverse world in which human and artificial intelligence intersect. This study delves into the relationship between traditional language knowledge and the advances brought forth by AI technology. By evaluating Scan Translator's accuracy, the intricate dynamics driving communication in the digital age are uncovered, where AI functions as both a facilitator and a challenger to traditional translation approaches. The enormous global development has led to technological innovations reaching various spheres of life, including translation. Numerous computer translation applications have emerged, increasing in quality alongside their evolution through artificial intelligence-based software systems. These applications play an important role in assisting humans in various areas of linguistic work that require translation. With rapid advances in science and technology, artificial intelligence techniques have evolved significantly. As a result of this development, there have been dramatic transformations in the area of translation in recent decades. Owing to the increasing demand for translation services due to increasing global connectivity, various translation tools have emerged and automated translation technology has evolved rapidly. The accuracy of artificial intelligence translation is an exciting area of rapid development in information technology. This area is aimed at developing artificial intelligence systems capable of translating texts into different languages in a way that approaches human thinking. The accuracy of artificial intelligence translation involves the use of advanced techniques from areas such as computer-language science, machine learning, and artificial nerve networks. Translation and interpretation using a scanner are modern applications of auto-translation technology that are of interest to many, especially in an era of global connectivity and the growing need to understand different languages

Artificial translation does not aim to eliminate the need for human translators, but rather to support them and simplify the process from one thousand to the next. More specifically, artificial intelligence is used to help you work smarter, not harder, with better translation quality throughout the process. Translation of Arabic, which is one of the most widely spoken languages and contains a large number of vocabularies, and translation is not only a translation of words, through words and sentences, but also a transfer of traditions and likes that inevitably affect the translation of texts that convey the meanings of a text from one language to another, taking into account accuracy and style. This requires understanding the original text and expressing content and style in another language. Translator must master both languages. Translator and translator. Therefore, some scholars and translation specialists believe that it is not only the transmission of language content, but also the transfer of cultural concepts, values and norms to the reader or listener of the language.

1. Purpose

The purpose of the study is to evaluate machine translation's precision and quality in the context of translation and interpreting services. Even with these developments, there are still concerns regarding their dependability in producing precise and excellent translations. The goal of the study is to provide important insights into the following areas: the degree to which machine translation systems can equal or exceed human competence; the precision with which they can convey nuances and cultural subtleties; the obstacles and constraints associated with obtaining high accuracy; and the ways in which these aspects affect the practice of interpreting in real-time situations. The study also aims to comprehend end users', interpreters', and translators' viewpoints on the application of machine translation technologies in the workplace. The study adds to the current conversation on the function of technology in language services.

2. Literature Review

The study of Wesam Mohsen Tahseen1 and Shifa'a Hadi Hussein 2024 under the title Investigating Machine Translation Errors in Rendering English Literary Texts into Arabic the study ends with the conclusions that all machine translation programs (Google Translate (GT), Reverso Translation (Reverso. T), Bing Microsoft Translation (Bing. M.T) in rendering English literary texts from English into Arabic are unacceptable and have more problems because these programs are just machines and cannot think or feel as well as all these machines' renderings are meaningless and ambiguous. So Human translation is better than Machine Translation because the first uses communicative translation while the other uses semantic translation.

The study of(Hamad Abdullah H. Al-Dosari 2023)under the title Comparing the performance of Google Translate and SYSTRAN in the Arabic dictionary This study attempted to examine how two MT systems deal with Arabic lexical ambiguity when translating from Arabic into English. Evaluation of the results shows that both MT systems (Google Translate and SYSTRAN) struggled with the three chosen linguistic features (homonyms, heteronyms, and polysemes. Between the two systems, Google Translate was the clear winner, with a better translation of almost every sentence in the test suite. Still, both systems are far from perfect when dealing with lexical ambiguity. Overall, both systems scored better in intelligibility than in accuracy.

The study of effects of pre-editing operations on audio-visual translation using TRADOS: an experimental analysis of Saudi students' translations(Chaouki Bounaas Bahia Zemni, Fadiah Al Shehri and Mimouna Zitoun)2023 Neural Machine Translation (NMT) is a revolutionary innovation that has had a significant impact not only on the translation industry but also on translation studies. This technology is creating new opportunities for shaping identities and

generating new knowledge and perspectives. This led researchers to undeniably and increasingly conduct studies to improve NMT performance. These studies involve assessing the quality of the output, determining the extent to which humans can be involved in the machine-based process, and proposing solutions to redress the deficiencies. In this regard, the paper focuses on the impact of pre-editing (PE) operations on the translation of audio-visual children's literary texts (subtitles) from English to Arabic using TRADOS. The work seeks to accomplish a number of pre-editing-related research goals in the context of Arabic NMT systems. Initially, it aims to define and clarify the idea of PE and its function in enhancing Arabic NMT systems' performance. Second, it looks at PE mechanisms and methods and how they might improve the appropriateness and accuracy of Arabic machine translation. Additionally, the study attempts to investigate the value of PE in enhancing the Arabic translation of audio-visual children's literature. The study also seeks to list the difficulties and restrictions related to PE and suggest viable strategies to get over them. Finally, the paper offers suggestions for further investigation into NMT systems using Arabic and PE. To achieve these goals, the researchers conducted a human evaluation of NMT for two animated movie subtitles and determined the necessary PE operations. The findings revealed that PE has the potential to improve the quality of literary translations and enhance their comprehensibility and acceptability.

The study of Investigating Machine Translation of Technical Texts, A Comparative Study between Bing and Index Translation Machines,) Hiame Hizi 2020)first by comparing translations of texts. The technology using the Bing and Yandex systems to translate from Arabic to English and how can that Translations must be close to the correct equivalents in the English language. How translation systems translate and   the difficulties encountered Yandex Translation was the weakest system because when I translated the three technical texts, it translated a

large number It contained grammatical, semantic, and morphological errors, and its translation was generally incomprehensible, and the meaning could not be reached. The correct original text. This is due to the difficulty of the Arabic language and the difficulty of understanding it in the Yandex system. While it was Bing Translation program is the best in translating technical texts because it is able to translate understandable sentences, He reached the intended meaning of the original text because he did not face many difficulties in translating the Arabic language into English.

Quality and Machine Translation: An Evaluation of online Machine Translation of English into Arabic Texts Mohammed Abdulmalik Ali.2020

This study compares the translation outputs of an English into Arabic text using the three machine translators of Google Translate, Microsoft Bing, and Ginger. To carry this evaluation of the machine translation (MT) outputs, an English text and its Arabic counterpart were selected from the UN records. The English source text was segmented into 84 semantic chunks. Depending on the Arabic counterpart model text, each chunk was rated as "correct or incorrect" at the two levels of the translation attributes: fidelity and intelligibility. To perform the quantitative description of the evaluation process, the numbers of fidelity and intelligibility errors and their percentages were calculated. Results of this evaluation process revealed that none of the three translated versions of the source text was perfectly translated. Although the translation of Microsoft Bing was rated the best, Google's translation was found the least accurate due to the high percentage of fidelity and intelligibility errors detected in its translation output. However, the quality of Ginger's translation was found slightly less accurate than that of Microsoft Bing, but remarkably better than Google's translation. The findings of this study imply that these MT applications can be implemented to perform English into Arabic translation to get the broad gist of a source text, but

a deep and thorough post-editing process looks essential for a full and accurate understanding of an English into Arabic MT output. The study recommends that more studies are encouraged to continue to assess the quality of MT that will further highlight its weaknesses and the strategies that should be adopted to over comet hem.

Machine Translation in the Arab World: Saudi Arabia as a Case Study,(Faten Almutawa & Sattar Izwaini 2015). There has been an increasing interest recently in machine translation technology in the Arab world, especially with the growing demand for translation. The aim of this paper is to investigate how widely machine translation systems are used and researched in the Arab world and what can be done to achieve real progress in this field by taking one country as a case study. A survey was carried out in Saudi Arabia to collect the necessary data to assess how many Arabic machine translation systems are used by Saudi organizations, how much interest exists in machine translation in Saudi universities and research centres, and how much research is being conducted on issues of machine translation. The findings of this study indicate that most Saudi organizations and translation agencies do not trust or are not interested in machine translation. Only a few universities have conducted research in this field. It is recommended that more attention be paid and more research be conducted to get the most use out of this technology and that more efficient Arabic machine translation systems be developed.

3. **Research Question**

The research Attempts to answer the following:

> How does the Scan Translator system impact the quality and the accuracy of translation and interpretation?

1. How Quality and Accuracy of Scan Translator in Translation and interpretation?

2. Which of Scan Translator and Human translation is more reliable in translation?

3.1. Hypotheses

It is hypothesized that:

1. Scan Translator is satisfactory in rendering Arabic English translation.

2. The outcomes of Scan Translator is less resource intensive compered to human Translation.

3. Scan Translator outcomes between Arabic and English are often said to be humorous.

3.2. Aims

This study sets four main aims:

1. To explain how Scan Translator functions.

2. To show how Scan Translator may assist humans in translation.

3. To prove that translation needs human assistance.

4. To identify the errors of the Scan Translator in the target text.

3.3. Objectives and subjective reasons

The emergence of technology such as Scan Translator has revolutionized cross-linguistic communication in the ever-evolving world of technical innovation. Scan Translator is a state-of-the-art application that combines objective functionality with subjective user incentive to enable real-time translation of printed text through scanning. This introduction explores the dual nature of Scan Translator, looking at the subjective incentives that drive users to embrace and

engage with this transforming tool in addition to its inherent goals as a technological solution.

Objective Reasons:

1. Assurance of Quality: In order to confirm the dependability and credibility of the translation tool, it is essential to look at how accurate Scan Translatoris while translating and interpreting into Arabic. Finding any possible mistakes or inconsistencies that might lower the quality of the translation is made easier with the use of objective analysis.

2. User Satisfaction: It is crucial to comprehend SCAN Translator's accuracy levels while translating and interpreting into Arabic in order to satisfy users and meet their expectations. It is crucial to evaluate the tool's performance objectively since users depend on correct translations to convey their messages or comprehend foreign information.

3. Improvement Opportunities: Objective examination gives significant insights into areas where Scan Translator could be improved. By detecting inconsistencies or common translation problems, engineers may improve the tool's algorithms and overall efficiency, resulting in improved translation results.

4. Ethical Considerations: Ensuring the correctness of Arabic translations is critical to maintaining ethical communication standards. Misinterpretations or mistranslations can cause misunderstandings, miscommunications, and even cultural insensitivity, emphasizing the significance of objective evaluation in mitigating such dangers.

5. Competitive Advantage: By objectively evaluating Scan Translator's accuracy in translating and interpreting into Arabic, engineers may compare its performance to

that of competitors. By proving higher accuracy and dependability, the tool can obtain a competitive advantage in the market, attracting new users and stakeholders.

Subjective Reasons:

1. User Experience: Subjective evaluation of SCAN Translator's accuracy in translating and interpreting into Arabic is based on the whole user experience, which includes simplicity of use, fluency, and naturalness of translation. Users' subjective perceptions have a significant impact on their pleasure and inclination to continue using the product.

2. Cultural Sensitivity: Subjective evaluation takes into account the tool's ability to effectively portray cultural subtleties and context-specific meanings in Arabic translations. A subjective assessment considers the translator's awareness of cultural nuance, colloquial idioms, and local customs, resulting in culturally sensitive and contextually suitable translations.

3. Personalization: Subjective analysis investigates the extent to which Scan Translator can accommodate individual preferences and linguistic styles in Arabic translations. Users may have specific preferences for tone, style, and formality, and subjective assessment helps establish the tool's adaptability to such variances.

4. Trustworthiness and reliability: Users' confidence in the validity of Scan Translator is heavily influenced by their subjective impressions of trustworthiness and reliability. Self-ratings take into account users' past experiences, word-of-mouth recommendations, and brand reputation when determining their subjective confidence in the tool's ability to consistently deliver correct translations

5. Emotional impact: Subjective assessment also considers translations' emotional impact on users, such as clarity, resonance, and empathy. Translations that elicit good emotions and connect with users on a human level are seen as more accurate

and effective, resulting in increased user satisfaction and loyalty. In conclusion, determining the correctness of translating and interpreting into Arabic using Scan Translator necessitates a mix of objective analysis to measure technical performance and subjective evaluation to judge user experience, cultural sensitivity, trust, and emotional effect. Balancing objective and subjective viewpoints give a thorough knowledge of the tool's success and guides continuing improvement efforts.

4. **Methodology**

This research adopts interviews methods and it explores the role of artificial intelligence (AI) in translation, specifically the Scan Translator. The research aims to understand its impact on translation processes through in-depth interviews and observations. The study uses a literature review to examine existing research on AI in translation, focusing on its features, effectiveness, and potential impact. Key research questions include how translators perceive AI's role in their workflow, perceived benefits and limitations, and how AI technology affects traditional translation processes and professional identity. The study uses a planned sampling strategy and data collection methods, with ethical considerations such as informed permission and participant anonymity.

This in-depth investigation examines how AI Scan Translator affects translation procedures. Understanding the significance and impact of AI Scan Translator on translation procedures is the study problem. Using a qualitative technique, the study looks at the body of research on AI in translation and pinpoints areas in need of further investigation. The research is guided by theoretical frameworks like the Technology Acceptance Model and User Experience Design. Important research topics include how translators view AI

Scan Translator's place in their workflow, as well as the benefits and drawbacks of the tool and how it affects translation conventions and professional identities. Data analysis, observation, and semi-structured interviews are all part of the research technique. A number of ethical issues are covered, such as participant anonymity, informed permission, and confidentiality.

5. Structure of the study

The study "Investigating Accuracy of Translating and Interpreting into Arabic of Scan Translator" examines the impact of AI and Scan translation on translation devices. It reviews existing literature, examines the role of AI and machine translation applications, and outlines the tools used for evaluation, data collection, and analysis. The study also evaluates the quality of scan translators and translation pens, focusing on accuracy, speed, and user experience. The findings include a comparison between AI-assisted and conventional translation tools, quantitative evaluation of translation accuracy, determination of translation quality, and identification of factors contributing to enhanced accuracy in translating and interpreting into Arabic using scan translators.

This study is made of two parts; Theoretical and practical. The Theoretical part is made of two chapters, the first is entitled Artificial Intelligence, and the seconds is entitled Quality of (AI) scan Translator in translation & interpretation. The practical part is made of one chapter in an attempt to analyse Scan Translator and examples of it including research and introduction and conclusion. in addition, appendix which hold a photo of the Scan translator and how it works and glossary.

6. Significance of the study

The importance of this research lies in the study of translation machines, their history, and their effective role in this era, all thanks to artificial intelligence and its integration into the world of translation. This study focused on examining translation tools in general and the Scan Translator in particular. An in-depth study and complete analysis were conducted on how the Scan Translatorworks, as well as the quality and effectiveness of translation within it. The study addressed both the negative and positive aspects of its operation and its impact on the life of the translator. The pen underwent testing, leading to several conclusions, including the significant role played by artificial intelligence in the translation processes. Thanks to algorithms related to this field, the pen demonstrated greater effectiveness, challenging human speed and accuracy at times. However, it is essential to acknowledge the limitations of the pen, indicating that it cannot currently surpass human capabilities. This study serves to enlighten researchers or learners about the hidden aspects of machine translation tools and their potential effectiveness in the future. It also raises important questions regarding reliance on these tools and the potential displacement of human intellect within the translation world.

7. The Limitation of the Study

The study's limitations are apparent in several of aspects. First off, the results have limited relevance because they can't be expanded to include additional translation devices outside the one under study. Second, although surveys of the literature on machine translation (MT) tools show certain commonalities, they could not fully capture the subtle differences and distinctive characteristics of each tool, which could restrict the scope of the research. Furthermore, the use of different resources in AI research highlights the difficulties in verifying the authenticity and coherence of ideas gathered and emphasizes the complexity of synthesizing varied sources. Last but not least, a significant drawback is that the

gadget under study does not support Arabic. This limits the scope of its features and could make it less useful to consumers who need Arabic translation. These restrictions highlight the necessity of exercising caution and interpreting the study's results in light of the surrounding circumstances, acknowledging the natural limitations of the research's scope.

chapter one:

Theoretical Part

Part one:

Artificial Intelligence

Introduction

Modern artificial intelligence is a system capable of perceiving its environment and taking actions to maximize the chance of successfully achieving its goals as well as interpreting and analysing data in a way that learns and adapts over time. this chapter discusses Artificial Intelligence. One of the Top Most Important Topics in the IT sector right now is artificial intelligence. It is the mechanical imitation of human intellect, particularly in computer systems. Additionally, it is the capacity of a machine to think and learn similarly to a human. It is related to many fields of study with the goal of creating methods and instruments for problem solving that people can effectively handle. AI is also software that thinks intelligently, in a way that is comparable to that of intelligent humans. it is developed by researching how people think, learn, make decisions, and collaborate to solve problems. AI has the potential to be extremely important in a variety of industries, including healthcare, agriculture, robotics, e-commerce, and transportation.

Translation in the past

Translation has been an important technique since ancient times, promoting worldwide contact and understanding among people. The tale of Babel, in which Noah's descendants were punished for building a tall structure, emphasizes the necessity of translation in early civilizations. Hieroglyphic pharaoh civilizations, Sumer, Mesopotamia, and the Arabs all used translation to establish their presence. The Gilgamesh epic was the earliest translation in the Middle East, including versions in Hittite and Hurrian. In Mesopotamia, the Hammurabi code was written in Akkadian and Hurrian languages. Translation was also employed to communicate in ancient Egypt, as evidenced by the Rosetta Stone. Arabs also translated into Arabic, mostly for medicinal purposes,

astrology, mathematics, physics, and science. Since ancient times, translation has served as a tool for organization and progress. **(Goui D. , 2023)**

1-Translation and interpreting in Algeria:

Translation is the process of interpreting the meaning of a written word from one language to another. Interpretation translates the meaning of a spoken phrase from one language to another. Algeria, like most other countries, has placed a high value on translation and interpretation since its independence for a variety of reasons. Algeria received the French language from its colonizer while also seeking to maintain its Arab character. For a while, French and Arabic coexisted, and there was a high need for translation because most official papers were written in both languages. The necessity to open up to the rest of the world drove Algeria to absorb many other global languages, particularly English, and the need for translation and interpretation expanded substantially as a result. Algeria understood this and had to establish a translation and interpreting facility in Algiers to satisfy demand. Over time, Algeria established translation institutions and departments around the country. Algeria has also attempted to control the translation and interpretation professions. Some interpreters are even members of the judiciary in Algeria. **(GOUI, 2019)**

2-Difficulties in translation and interpreting:

Translation involves addressing various challenges such as word order, false cognates, dialects, and idioms to avoid misunderstandings or mistranslations. Immigration translation and interpreting encounter several challenges as a result of Algeria's circumstances. In actuality, certain problems or challenges are associated with lawful migration, whereas others are primarily associated with irregular migration. Gender is one factor that is often associated to language ability, but there are other concerns that are related to practice and migration

(Djamel GOUI 2017). Successful communication between Algerians and migrants—or, more often, between Algerian authorities and migrants—may be hampered by these problems. The challenges covered in this work are illustrative rather than complete, and there may be many more challenges that have gone unmentioned since there is insufficient scientific data. **(GOUI, 2019)(Opt Cite, p.98)**

3-Objectives of Translation and the Death of the Truth:

Nations translate just to exist. It is unnecessary to go back to the beginning to emphasize the importance of translation in permitting or facilitating contact across nations. Translation has now been changed, as previously said in this work, to non-classical functions, not restricted to the creation of knowledge and power alone. Nations translate to stay current and, as a result, be able to remain in today's globe, which is growing and changing too quickly and transforming into a little room rather than a small hamlet In these circumstances, the goals of translation varies from one translator to the next, as well as from one group, community, or nation to another. Translation aims are often established in advance, whether in literary translation or otherwise, and none of those purposes intends from the start to achieve the death of the truth in the target text. **(Goui, 2024)**

3.1 Translate to Introduce the Other

Translators sometimes try to present another culture without neutralizing or disguising indicators, which might produce culture shock in the receiver. They leave unique components and indicators for the reader to uncover. This technique does not destroy the truth inherent in the original. To establish equivalency, it is crucial to determine whether literal translation is useful or unimportant. Translating to introduce the other can assist offer the other the opportunity to respond, particularly across cultures, civilizations, and faiths.

However, literal translation may produce translationese and language interference. **(Goui, 2024)(Opt Cite, p.49)**

3.2Translate To Influence the Other In this second objective,

The translator aims to provide the same impression as the source material. As a result, the translator may choose for natural equivalence according to Anthony Pym, in which he or she can modify the form while preserving the content and carefully select a term that preserves the same impact and will be readily understood by the receiver/reader. Thus, precise translation is avoided on purpose, and formal truth telling is explored as well, as the viewer may perceive the process as a sort of misrepresenting truths that leads to the death of truth. Again, one may return to the very early disputes over form and content in establishing equivalence, as articulated primarily by Eugine Nida (1964), J.C Catford (1965), and many other translation studies major academics.**(Goui, 2024)(Ibid, p.49)**

4-Historical Development of Artificial Intelligence

The history of artificial intelligence (AI) is a fascinating journey spanning decade, defined by key milestones, breakthroughs, setbacks, and renewed enthusiasm. Here is a short summary: Artificial intelligence (AI) has made significant advances in recent years, leading us into an era where machines can not only learn but also make informed decisions. The integration of multiple factors promotes the rapid development of artificial intelligence, starting a journey of transformation in various industries, a concept originating from ancient civilizations, gained formal recognition in the mid-20th century with Alan Turing's "universal machine" concept. The Dartmouth Conference in 1956, organized by computer scientists, marked the birth of AI research, focusing on problem-solving, language processing, and symbolic reasoning. The 1950s and 1960s saw significant efforts to build intelligent systems, leading to the

development of symbolic AI, which emulated human intelligence in specific domains. **(TEJAN, 2022)**

5- Definition of Artificial Intelligence

Artificial intelligence, or AI, refers to how technology, specifically computer systems, may replicate human intelligence processes. This includes perception, learning, thinking, problem-solving, and decision-making. As a result, this study presents an understandable introduction of artificial intelligence (AI), emphasizing its capabilities, relevance, and problems. Artificial intelligence refers to systems that demonstrate intelligent behaviour by analysing their surroundings and acting autonomously to achieve certain goals. The phrase "artificial intelligence" refers to any technology that is utilized in any situation and possesses qualities that some people see as intelligent. This inclusivity makes it difficult to estimate the impact of AI breakthroughs, since various advantages and concerns may be recognized depending on the sector of AI. Greater accuracy is required to have meaningful and productive discourse, distinguishing between basic "expert systems" and complicated data-driven algorithms. **(Boucher, 2020)**

6- Types of Artificial Intelligence:

Artificial intelligence can be categorized into many sorts based on its functions and capabilities. These are a few common varieties. The science and engineering of creating intelligent machines, particularly intelligent computer programs, is known as artificial intelligence." Alan Turing In order to engage in the current conversation around artificial intelligence and comprehend the implications it will have for humanity's future; we must first familiarize ourselves with three categories of foundational information.

6.1 Artificial Narrow Intelligence (ANI):

AI systems that are created and educated for a single task or a limited set of tasks are referred to as artificial narrow intelligence, or ANI. These systems lack the general cognitive capacities of human intelligence, yet they are excellent at completing predetermined tasks within a narrow domain. Narrow artificial intelligence (ANI), also known as narrow artificial intelligence or weak artificial intelligence, is a type of artificial intelligence that focuses on a single narrow task. Her abilities are limited. Artificial intelligence systems used in medicine for accurate disease diagnosis **(Fourtané, 2019)**

6-2 Artificial General Intelligence (AGI):

Artificial General Intelligence (AGI) is a type of AI that is comparable to human cognitive capacities in that it can comprehend, acquire, and apply information to a variety of activities. As opposed to narrow it, which is intended for specialized jobs, so when we talk about artificial general intelligence (AGI), we are referring to an artificial intelligence that is comparable to human abilities. However, AGI is still an emerging field. Since the human brain is the model for creating general intelligence, it does not appear that this will happen anytime soon due to the lack of a complete understanding of human brain function. But history often shows that people tend to develop technologies that pose an existential danger to humanity. Why would trying to create an algorithm that replicates brain function be any different? If this happens, people will have to accept the consequences it may bring. **(Fourtané, 2019)(Opt Cite, p.49)**

6-3 Artificial Super Intelligence (ASI):

To human A hypothetical intelligence known as Artificial Super Intelligence (ASI) is said to be superior intelligence in all domains, including creativity, problem-solving, and social abilities. Artificial Super intelligence (ASI) would surpass human cognition and perhaps demonstrate talents well beyond human comprehension, in contrast to Artificial General Intelligence (AGI), which would

be able to comprehend and learn any intellectual work that a human being can. And also, Artificial Super Intelligence (ASI) is predicted to outperform humans in many areas, such as arts, decision-making, and emotional relationships. This type of AI will excel in these areas, which are considered essential for distinguishing a machine from a human. However, some argue that humans have not yet mastered these areas. **(Fourtané, 2019)(Ibid, p.49)**

7-The main areas of research and development in AI?

The field of artificial intelligence research and development is diverse and active, Artificial intelligence work is often organized into various subfields that solve frequent, but difficult, practical problems or require unique tools or expertise. Some of the most well-known subfields include robotics, computer vision, speech recognition, and natural language processing **(KAPLAN, 2016)**

8. Definition of robotics?

Robotics is a multidisciplinary science that encompasses robot design, construction, usage, and operations. A robot is a machine that can execute complex tasks autonomously. These devices are typically designed by computers to do hazardous, dull, filthy, or repetitive tasks that people find unpleasant or tiresome. Robotics also include creating machines capable of doing physical activities, which are frequently modeled after humans. AI research is centered on creating lighter, more flexible, and stronger materials and control systems, as well as creative designs inspired by nature. The main challenge is adjusting to changing circumstances, with the goal of building autonomous cars that navigate highways and places**. (KAPLAN, 2016)(Opt Cite, p.49)**

9-Themes of Artificial Intelligence

Since Artificial intelligence (is multidisciplinary and has an impact on many facets of society, it covers a broad variety of issues and topics. The following are some well-known AI-related themes:AI has made significant advancements in search algorithms, machine learning, and statistical analysis throughout the past 60 years. Most of these breakthroughs are inconspicuous, such as examining purchase histories and influencing marketing decisions. Foundational problems have often been underestimated by the field, with the promise of significant breakthroughs in 10 years. Despite progress, no computer has passed the Turing Test, Expert Systems have grown, and open-ended games remain far from mastery. **(Smith, 2006)**

10. The AI Environment:

The ecosystem in which artificial intelligence functions, develops, and influences many facets of society and human existence is referred to as the AI environment. This ecosystem is made up of many different components, such as the economic dynamics, ethical considerations, legal frameworks, technological infrastructure, and public attitudes regarding it so the AI environment consists of five main components: machines, human intelligence, machine learning (ML) algorithms, IoT, the Internet of Everything, and data science and engineering. Machines are critical in both non-AI and AI environments because they have the intelligence to distinguish humans from animals and other humans. its developers use machine learning algorithms to create intelligent coding that enables self-learning and prediction of events based on data. These algorithms also help predict future trends **(Kaliraj, 2022)**

Translation in ESP Context

In the context of English for Specific Purposes (ESP), teachers use a combination of methodologies, procedures, and materials to teach context-specific language. Translation is a technique that helps learners understand the communicative value of their language by referencing their own language's functioning. This approach is not just about language usage, but also engages them in understanding real-life communication functions. Scientific discourse is a universal mode of communication realized by textualizing scientific texts in different languages. Widdowson (1979) recommends that teachers use L1 and non-verbal methods to manifest this process, as scientific discourse is a universal mode of communication. This approach helps teachers engage in the learning process and promotes a deeper understanding of the language. **(Fethiza-T, 2016)**

CLT in EST: Meaning and Prospects

Since its debut in the 1980s, communicative language teaching (CLT) has been the most successful way to build English as a Foreign Language (EL) fluency in EFL programs. CLT addresses typical concerns in EFL didactics, such as learners' difficulty utilizing language outside of the classroom and the importance of a communicative repertoire for effective EL communication. It also emphasizes EL communicative competence (CC) as the ultimate objective of ELT, addressing learners' requirements for developing English oral fluency. CLT has collaborated with English as a Second Language (EST) to meet these communicative opportunities, emphasizing English speaking abilities rather than EL linguistic proficiency. This method incorporates EST practices, factual accuracy, and interpretations into communicative teaching theory, assumptions, and consequences. **(GOUI.D, 2021)**

Conclusion

Artificial intelligence (AI) has revolutionized various sectors, increasing productivity, efficiency, revenue, job roles, innovation, and reducing human error. However, challenges such as layoffs, labour market disruptions, privacy issues, and gender-based inequalities require attention. AI technologies must be created ethically and address social issues. AI holds immense potential in enhancing productivity, decision-making, and driving economic growth. Consequently, with such power comes great responsibility. navigate ethical dilemmas must uphold principles of fairness, transparency, and accountability, and remain vigilant against unintended consequences like job displacement and privacy breaches. Establishing robust regulatory frameworks and ethical guidelines is crucial for AI systems' development and deployment. Fostering interdisciplinary collaboration and promoting diversity within it is essential to unlock its full potential and mitigate bias and discrimination risks. The future of AI lies in our hands, and we must harness its power responsibly to build a more equitable, sustainable, and prosperous world. The true measure of AI's success lies in its ability to enrich and empower the lives of every individual on this planet.

Chapter Two:

Quality of (AI) scan Translator in translation &interpretation

Introduction

Translating using computers is beneficial for various reasons, including handling large volumes of text, maintaining terminology consistency, enhancing speed and volume, and reducing costs. Human translators may find technical topics tedious and uninteresting, while machines can provide consistent translations. They also cater to immediate delivery preferences, making them ideal for businesses. While some may view computers as ineffective, they can be used in situations where high-quality human translation is not necessary. Translation has become a growing economic activity due to globalization and multinational corporations. The development of the Internet has led to a demand for product information, software, and manuals, prompting translation services to be rendered on time.

Machine Translation (MT) has become more popular among professional translators, and Machine Translation Post-Editing (MTPE) is becoming more widely used. Assessing the quality of MT suggestions can prevent frustration and reduce the time it takes for post-editors to decide if a suggestion is worth post-editing. Machine Translation Quality Estimation (MTQE) can help provide good-quality sentences for post-editing. Translation is crucial for recognizing democratic potential and reducing inequalities associated with ethnic, linguistic, gender, race, or class. Countries like Canada, Spain, Belgium, Romania, and Yugoslavia promote free interlingual communication and statute publication. The North-South gap requires developing countries to assert their languages and determine their role. Issues like language barriers in Nigeria, Malaysia, and India highlight the importance of translation in international organizations like Amnesty International.

Ideology

Ideology and ethnocentrism are closely connected yet have different viewpoints. Ideology covers political, economic, religious, and cultural convictions, which can result in disputes between states and groups. Translators frequently act strategically to ameliorate the negative consequences of these issues on their communities, nations, or organizations, using neutralization, omission, change, or opposition. This method enables their society to present themselves as victors and right-holders, while others are positioned as losers or non-right holders. Ideology clarifies issues in translation, functioning as a soft weapon in the game. Ideological attitudes in language or translation can arouse the message receiver's emotions, resulting in reactions that could be deemed war-like soft signals or even physical violence. Killing truth in translation is viewed as a sort of war from both an impact and truth dying standpoint, as well as from the translator's and translational perspectives. Is the translator obligated to murder the truth, which is not part of their work, resulting in the death of the truth in translation and transforming them into liars rather than effective mediators? In some situations, the goals of translation may allow for the suppression of truth

1.Difficulties of translation into Arabic:

The intricacy of the Arabic language combined with cultural variations can make translation into Arabic difficult in many ways. Arabic is rich in cultural allusions, idioms, and context, making direct translation challenging. Creating new terms or coining old ones in order to find an equivalent has long been a major challenge in Arabic translation. The sciences and new knowledge in general were translated into Arabic during this time, and many new concepts were introduced. Since there were no coined terms to express these concepts with the same charge, translators

had to use the closest term that already existed in Arabic or, more likely, transliteration, which they state is only temporary used to produce a full translation before the term is reviewed or changed by those in charge of term generation and coinage. If translation is not closely watched, it could be a major cause of lexicon turmoil in the Arab world. Language coordination offices must be established and activated to greatly attend to the transliteral and translational process, language, and ultimately the Arab Nation. On the one hand, translation needs to be closely regulated by policies in order to reduce the risks associated with its practice without coordination or organization. **(Goui, 2023)**

2.1 Nowadays translation into Arabic problems.

Translating into Arabic can indeed present some challenges, as with any language translation. Here are a few common issues that translators may face Arabic is viewed as a single, cohesive language, in contrast to other languages like English. For example, there are several dialects of English, including American, British, Australian, and others; in theory, this is not the case in Arabic. However, in actuality, the Arabic phenomena is entirely present, The Arabic spoken throughout the Maghreb and the Middle East, and occasionally even in neighbouring nations, differs due to translation. The remarkably developed west is a large and rich source of translations from French and other languages into Arabic. In English. While Middle Eastern and Gulf countries translate primarily from English, Maghreb countries translate primarily from French. This causes some variations, if not divergences, in the terms, words, or expressions coined between the east and west of the Arab world, and in these cases, translation— which is meant to be a source of organization becomes a source of chaos. **(Goui, 2023)(Opt Cite, p.49)**

Definition of Machine Translation

Machine translation is the use of artificial intelligence to automatically translate text from one language to another without human involvement. Modern MT goes beyond simple word-for-word translation, conveying the whole meaning of the source text in the target language. Controlled language criticism systems may significantly reduce the time required to post-edit machine translated documents, as well as validate and revise input text. However, if the MT and critiquing systems are totally separate, the same text must be reviewed twice: once by the critiquing system and then by the MT system. This distinction raises the expense of modifying or changing the regulated wording. As a result, MT system makers should attempt to integrate controlled language critique with MT as closely as possible. In reality, not all content fed into MT systems follows strict writing criteria, and the less a text does, the worse the raw translation result. In some cases, it may be possible to reword troublesome sentences or conduct the full procedure manually. **(Arnold, 1994)**

7- Problems in machine Translation

MT can cause errors and omissions that affect the meaning and intelligibility of your message, especially if the languages involved are complex or distant. MT may also fail to understand the nuances, circumstances, and styles of human discourse, resulting in incorrect or misleading translations.MT has improved translation quality, but not all language pairs are equally effective. Morphologically rich languages, such as highly inflected languages, are difficult to translate due to data sparsity and incorrect statistical estimations. Technique's address this by modelling units like stems, ends, lemmas, and morphosyntactic tags. Inflectional languages also face issues with relaxed word order and improper pronoun translations. Pre-ordering techniques help address these issues by bringing words closer to their final placements on the target side. **(Donaj, 2019)**

8- Machine translation evaluation

There are two primary techniques to evaluating machine translation systems: human evaluation and automated evaluation. Human review is a useful approach to measure translation quality, but it is costly and takes significant human work, in addition to the problem of locating dependable multilingual annotators. Machine translation (MT) is a crucial technique in the translation field, and its quality is increasingly important. Machine translation evaluation is an algorithm that can be built into a program and performed by a computer to produce an evaluation score. However, automatic MT evaluation often counts word- and sentence-based faults, neglecting general text-level features. Despite criticisms, progress in automatic MT evaluation has been made in the last decade. MT quality can be measured using two approaches: Glass-box evaluation and black-box evaluation. Black-box evaluation focuses on the objective behaviour of the system on a predetermined evaluation set. **(Donaj, 2019)(Opt Cite, p.49)**

9- MT quality assessment

Translation quality assessment is crucial for improving MT systems, but there is a lack of consensus and standardization due to the complex cognitive, linguistic, social, cultural, and technical processes involved. Approaches can range from macro-analytic to micro-analytic, depending on the context. Industry quality assessment focuses on the final product, while research aims to demonstrate improvements over previous studies or different translation processes. Distinguishing between human and automated metrics is necessary. **(Tregueros, 2021)**

10- Neural network machine translation

Neural machine translation (NMT) is a method of machine translation that use an artificial neural network to predict the likelihood of a sequence of words, usually modelling full sentences in a single integrated model. NMT outperforms

statistical machine translation. (The latter essentially predicted the most likely translation of words by using statistical probability instead of context.) However, despite its capacity to take context into account, neural machine translation is not impervious to errors. Artificial intelligence (AI) has revolutionized machine translation by allowing translation robots to directly face whole phrases like humans. Google's 2016 study showed a 60% reduction in error rate and high quality of neural network translation technology. This technology has replaced statistical machine translation as the core technology for commercial online translation, with Google's system supporting over 100 languages. **(Yutao, 2022)**

11- The limitations of machine translation

Machine translation technologies often struggle to maintain consistency over enormous amounts of material. They may translate comparable lines differently, or employ a different style or tone throughout the piece. This might lead to a disconnected and confused end product. The expansion of technology in machine translation faces limitations, with human translation remaining subjective. Current neural network machine translation technology falls under the category of "poor artificial intelligence." The debate over the effectiveness of AI is significant, with "strong AI" arguing that a string of binary numbers can represent anything, while "weak AI" argues that the human mind is semantic and cannot be programmed due to its fundamental nature. Current AI translations rely on standardized texts, making them limited in applicability and creativity **(Lin, 2023).**

12- AI in interpreting

AI supports interpreters in several ways when it comes to data analysis. It can assist in finding the employee who is most suited for a certain position. It could also assist you in determining how to book interpreters on an as-needed basis.AI and ML technologies have significantly impacted the interpretation market,

enabling automated speech translation and computer-assisted interpreting tools. Initially developed in the 1980s and 1990s, these devices aim to fully automate the interpreting process in specific contexts, such as travel, humanitarian missions, medical care, university lectures, and military situations where human interpreters are unavailable. **(Horváth, 2022)**

13- Machine Translation Quality Estimation

The job of measuring the quality of machine-translated text in real time without requiring reference translations is known as machine translation quality estimation (MTQE), and it is crucial to the advancement of machine translation (MT). Following two decades of development, QE has produced an abundance of findings. This work uses the FMS as a quality indicator for machine translation output, since editing effort and FMS are correlated. Without ever having access to the accurate translation, the MTQE system is taught to anticipate FMS. The MTQE technique was assessed for performance using the Autodesk dataset, which was utilized for training **(Béchara, 2021)**

The importance of corrective feedback

Corrective feedback is a valuable technique for improving language learning and writing skills, helping students create better results. Precise texts with clear and well-organized concepts. Straub (1996) emphasizes the importance of feedback and error correction in teaching, stating that "how we receive and respond to student writing speaks loudest" (p. 26). According to Penaflorida (2002), receiving criticism helps students understand their strengths and flaws, allowing them to improve and become good writers (p. 346). Effective use of this educational tool by teachers can help pupils acquire foreign languages. **(GOUI.D, 2023)**

Conclusion

This Study investigates the function of machine translation technologies in translation and quality evaluation, focusing on philosophical questions and the complexities of human language and language mediation. It employs a literature review approach to investigate the history, technical concerns, and future of human and machine translation. this study reveals that while there are limitations in machine translation progress, a balanced interaction between people and technology is predicted, with translators employing technology to discover truth while keeping their own subjectivity. AI technology can help interpreters operate more efficiently by reducing cognitive load and delivering services in remote places or languages with few native interpreters. However, unexpected increases in AI utilization and cloud-based internet platforms pose significant ethical challenges, notably in terms of maintaining anonymity and trust in client-interpreter interactions. These hazards must be addressed in order to maintain ethical standards in the translating profession. Translators need such tools to give assistance to our self and to gain extra time when it comes to deal with interpretation and translation.

Part two:
The Practical Part

Chapter three

Introduction

Communicative Translation is a vital tool in bridging communication barriers between different cultures and languages. It allows people from diverse backgrounds to understand each other's thoughts, ideas, and emotions while maintaining the integrity of the original message. In today's globalized world, cross-cultural interactions have become increasingly common, making it essential to overcome language barriers. Scan translation is an indispensable tool for this purpose, as it converts written text from one language to another, enabling effective communication and promoting cultural exchange.

Scan translation tools provide an efficient and accurate way to convert written content, allowing individuals from diverse linguistic backgrounds to access information. They also enable real-time communication through instant translation services. Advancements in technology have made multilingual chatbots and mobile apps that incorporate scan translation widely available, further facilitating global language exchange.

Scan translation not only helps in overcoming language barriers but also plays a significant role in facilitating cultural exchange. By providing access to literary works, articles, and other written materials in different languages, it allows individuals to gain insights into other cultures and preserves and promotes cultural diversity. It also enables the exchange of ideas and perspectives through translated books, research papers, and discussions, promoting a richer understanding of different cultures. In an increasingly interconnected world, global communication is vital for collaboration, business transactions, and international relations. Scan translation enables smooth business negotiations by translating contracts, proposals, and communication in real-time. Governments,

organizations, and individuals can use scan translation to bridge communication gaps during international conferences, events, and collaborations. By breaking down language barriers, scan translation fosters mutual understanding and harmony among diverse communities.

1. **Vormor-x2 Translation Pen Scanner**

This is a portable multi-functional translation dictionary pen that can be used to scan translation, voice intercom translation and find words. Scanning translation function can scan, translate and pronounce different languages; Voice translation can be used for real-time voice intercom translation in different languages.

1. Hold the translation pen so that the head of the pen and the book are 60 ° Angle, the translation effect will be better.
2. Point the pen to the beginning of the text.
3. Press the pen gently.
4. Parallel backward sliding scanning at uniform speed.

14-   Product Description

a. **Power on / off Power on:**

in the off state, long press the power key for about 3 seconds to start the device. Power off: in the power on state, long press the power button for about 3 seconds, and "restart / shut down" will appear. Click the power off icon to shut down the device.

b. **Connect Wi-Fi**

After power on, you can connect with Wi-Fi in the setting interface to get more learning materials. You can also use this product offline.

c. Scan translation

After power on, hold the translation pen, gently press the scanning pen to align with the text, then scan and translate different languages, and click on a single text to enhance understanding and learning.

d. Voice translation

Click the "Voice translation" in the main interface, set the two languages to be translated at the top first, and then press and hold the blue (or red) button on the right side to carry out voice intercom to the translation pen device to realize the voice translation of the two selected languages. There are more than 100 kinds of languages, which can be freely selected according to your needs.

e. Photo translation

(optional) 500W pixel photo taking function, one clicks photo, real-time translation, adjustable translation area, automatic translation of different languages, applicable to the translation of shopping labels, user manual, menu, road signs, etc.

f. Text excerpt Click

"Text excerpt" in the main interface to scan the text content to be extracted. After scanning, click "Finish" to save it to the machine and view it from the history; Or click upload to email address, then download and save from email. You can extract the text you need in real time.

g. Smart record Click

"Smart record" in the main interface, then click build record in the upper right corner, chick the recording button to start recording. After recording, save the recorded content in the device to make notes of important information.

Dictionary Click "Dictionary" in the main interface to select a dictionary for quick word search and interpretation. There are several different dictionaries to choose from.

h. Vocabulary Click "

Vocabulary" in the main interface, there are several kinds of thesaurus for learning and using.

Text to Speech - The scan translator can scan 3000 characters per minute, scan and translate the entire line of text within one second, and output the original text and the translated documents by voice. The accuracy rate is up to 98% which is convenient and fast! Very suitable for people with dyslexia or other reading difficulties.

i. **112 languages voice translator**

Professional Document Scanner suitable for students and professionals. Supports multinational accents and can adjust the speed of speech output. It is the best choice for you to take notes, record conferences, travel abroad, take TOEFL, IELTS, ESL test, and give as a gift.

j. **Two-way Speech Translation–Scan and edit on the go!**

Translations are instantly played via the built-in speaker and shown on the pen, for example, translation from Spanish into English, or translated English into Spanish

k. **Smart Recording & File Transfer**

Translator Voice Translator can be used as a convenient recorder to record and save all your important interviews, meetings and conversations.

l. **Reliable After-Sales Guarantee & Online Software Update**–

This instant voice translation device uses a 3.5-inch touch screen and an eye-protecting UI design. A more comfortable operating system, no additional applications, no additional costs. The system is updated online for life and includes two years of free replacement and warranty, as well as 24/7 customer service.

m. **Translation pen scanner with 3.5-inch Capacitive Touch Screen Our dictionary scanner pen support 112 language translations**,

Translator's voice translation accuracy rate is high, and it can easily meet your multi-language translation needs

15- Definition of the corpus

The Scan Translator has a massive reservoir of linguistic materials that have been rigorously selected to facilitate cross-lingual translation and interpretation. This enormous collection includes a complex tapestry of written texts and spoken dialogues drawn from a variety of linguistic landscapes, guaranteeing full coverage across several language pairings and disciplines. This corpus contains the building blocks of language, such as subtle idioms, idiomatic phrases, and cultural allusions, which improve the translation experience and deepen cross-cultural understanding.

As the foundation of the Scan Translator system, this corpus is constantly refined and expanded to keep up with the dynamic nature of language evolution and cultural shifts. Linguistic patterns, word use, and contextual subtleties are thoroughly examined and incorporated to provide the highest accuracy and fidelity in translation outputs. The Scan Translator adapts effortlessly to evolving language trends and cultural sensitivities via continual updates and modifications, increasing its efficacy and dependability over time.

By using the communal wisdom inherent in this vast corpus, the Scan Translator system shines as a beacon of language skill and cultural competence. It provides users with high-quality translations that not only transmit the text's literal meaning but also retain the nuances, complexities, and cultural context of the original conversation. Whether analysing complicated legal papers, interacting with literary masterpieces, or facilitating cross-border contact, the Scan Translator system is a reliable ally, overcoming linguistic gaps and building meaningful relationships across cultures and languages.

16-   Patterns

The Scan Translatoris a portable device that uses advanced language translation technology and a pen-like instrument to convert printed text into digital data using optical character recognition (OCR) technology. It can be audible through audio output or displayed on a screen. Some models also have voice recognition built in for quick translations. However, the translator has limitations due to handwriting styles, typefaces, and text, and may struggle with complex words or idiomatic expressions. Advances in artificial intelligence and machine learning are being made to improve the accuracy and comprehension of the Scan translator. Future improvements may include improved handwriting recognition, language compatibility, and contextual comprehension. Based on the in-depth analysis in the pen, an applied and practical study was conducted using different texts as follows:

The translation and degradation process of the scan translator were examined, and the following observations were made:

Example:1

-There were several suggestions ‹more or less happy but, **challengers were** final.

Translation

كانت هناك عدت اقتراحات سعيدة إلى حد ما لكن اقتراح **تشالنجر** كان نهائيا

The analysis:

Noticed that the word "challengers" has been mistranslated from its Arabic equivalent (Challengers), but noticed that the pen translated it as(تشالنجر)

Identifying the mistake

observed that when translating by voice, the word in Arabic was translated as(تشالنجر) , however, when using scanning, the word translated as Challenger, which is one of the mistakes committed by the Scan Translator.

Figures. 1
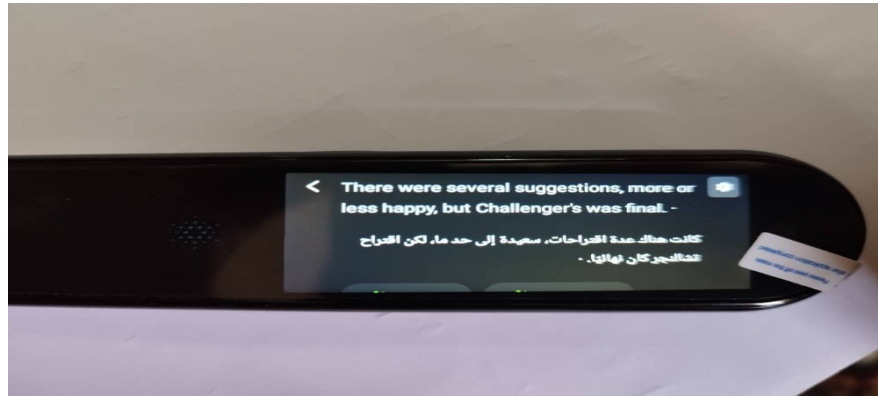
Example:2

We therefore blocked the entrance to our **zareba** by filling it up with several thorny bushes

Translation:

لذلك قمنا بسد مدخل **الزريبة** لدينا عن طريق ملئها بعدة شجيرات شائكة.

The analysis:

You can see that the translation in this sentence is correct and uses the borrowing technique

(Borrowing) في كلمة (zareba)(زريبة)

Meaning of zareba in English: A stockade or enclosure of thorn bushes

Identifying the mistake

noted that the Scan Translator works with the word (zareba) as a term that does not exist in the original text (English language) and its equivalent in the English culture, so it treats the

word in a borrowing style (from one culture to another).

Figures. 2
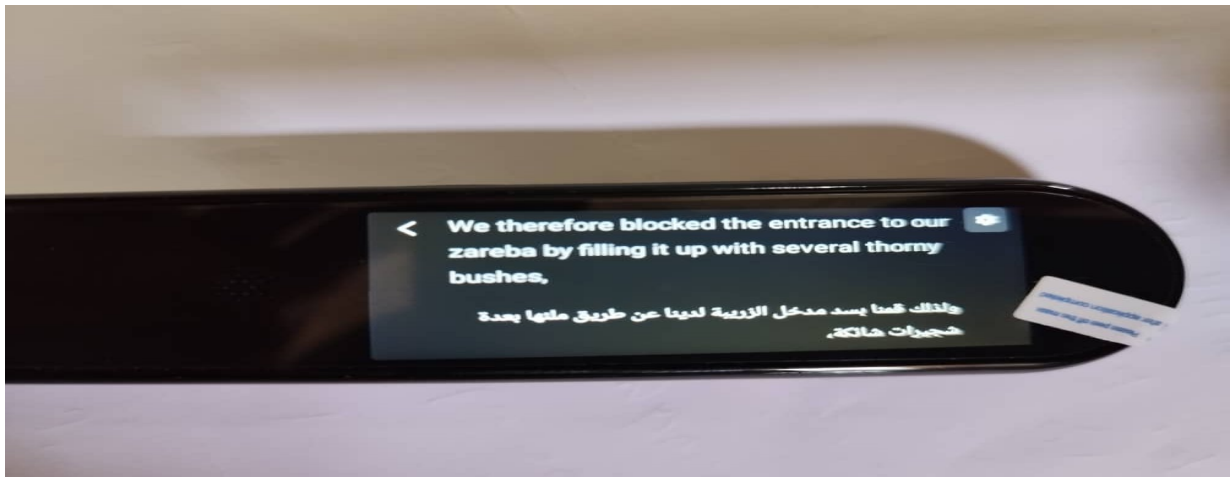
Example:3

The most wonderful things have happened and are continually happening to us. all the paper that I possess consist of five old not-books and a lot of scraps.

Translation:

لقد حدثت الأشياء الرائعة وتحدث لنا باستمرار. كل الأوراق التي أملكها تتكون من خمسة دفاتر وملاحظات قديمة والكثير من الفضلات

Identifying the mistake:

The word scraps as a singular are translated as scraps, but when the word is translated into a paragraph, the translation is different and translated as rubbish.

In other words, the pen translates according to the context) from one word, sentence and paragraph.

Figures. 3

17- Observations:

Noticed that the translation process from one foreign language to another translates effectively. However, from Arabic to another language, the pen fails to translate in both voice and scanning translations.

1. **For instance**: The Scan Translator cannot translate religious texts (the Quran) in Arabic
2. The pen has difficulty when it comes to translating from the target language (Arabic) to the source language (English), while the reverse is easier.

3. When using voice translation, the pen is good at finding the correct translation of common vocabulary

Example:

- hello everyone

مرحبا جميعا

On the other hand, when it comes to an unfamiliar word that is unable:

- In the word **stylographic pencil** is a is a printing pen, the Scan translator faced Difficulties of finding the correct concept and the correct translation into قلم رصاص
- The scan translator or Scan Translator can only read and translate from written contexts (books, articles, papers.). in the other hand, cannot deal with digital screens
- Such as (laptops, mobiles…)

Example:

This pilgrimage, known as the Hajj, is one of the five Pillars of Islam (the others are the profession of Allah as the only God and Mohammed as his Prophet; Fasting during Ramadan charitable giving and ritual prayer) by which every practicing Muslim must abide. this year the hajjStarts Nov. 25it takes place on only between the 8^{th}and12^{th} days of Dhu-al-Hijjah, the final month of the lunar Islamic calendar, a Time One God's spirit is believed to be closest to earth.

Translation:

هذا الحج المعروف بالحج هو أحد أركان الإسلام الخمسة (هي إقرار الله بأنه الإله الوحيد ومحمد ورسوله وصيام شهر رمضان والزكاة والصلاة) التي يجب على كل مسلم الملتزم أن يلتزم بها هذا العام يبدأ الحج

في 25 تشرين الثاني /نوفمبر ويقام سنويا بين الثامن والثاني عشر من ذي الحجة الشهر الأخير في التقويم الإسلامي القمري وهو الوقت الذي يعتقد ان روح الله فيه هو الأقرب إلى الأرض.

Analysis

- In the translation of the above paragraph, it is observed that the accuracy of the device in recognizing translation styles was not high enough to prevent the occurrence of poor translations as in the following:

- The device leaves the same word **pilgrimage** and **Hajj**, which have the same meaning (pilgrimage), as the translation does not carry two words with the same meaning consecutively. In this case, it is necessary to use the method of deletion for the integrity of the translation deleting one of the two words (**ellipsis /omission)**

- You cannot rely on the Scan Translator to translate texts related to religion, hadiths, etc. as in the following example:

- the profession of Allah as the only God **translated** to (إقرار الله بانه الإله الوحيد))

- Correct translation is (ان تشهد بان الله الواحد)

18-   Findings:

Human translators have a deep understanding of source and target languages, allowing them to accurately convey meaning and context. They can decipher complex sentence structures, idiomatic expressions, and cultural nuances that machine translation systems struggle to understand. Despite neural machine translation, it is difficult to match the accuracy achieved by human translators. Human translators also capture subtlety, such as sarcasm, irony, and cultural allusions, which machine translation cannot reproduce. Translation involves understanding cultural context, and human translators can modify wording to be appropriate for the intended context. Machine translation lacks the cultural

knowledge and sensitivity required for correct translations, and relying solely on it reduces the complexity and richness of communication.

Conclusion

Technology for language translation stands out as a vital tool for removing linguistic and cultural obstacles in successful communication. Scan Translator technology has advanced significantly over time, having a dramatic effect on the dynamics of cross-cultural communication and enriching cultural landscapes by providing more access to textual materials in a variety of language domains. A transformative era in language acquisition and comprehension has begun with the introduction of cutting-edge devices with a plethora of features, including extensive word repositories, seamless scanning functionalities, and advanced speech and photo translation capabilities.

Among the novel tools supplied, the Scan Translator stands out as a critical tool, alongside the language translator, electronic dictionary pen, and scan reader pen, all specifically designed to improve the language acquisition trip. Consider the Scan Translator, a stunning display of technical genius. It has a full suite of seven dynamic features, including the exceptional potential for multilingual voice translation in 113 languages, exact scanning translation, quick access to electronic dictionaries, and seamless online or offline image translation. This set of elements not only simplifies language learning efforts, but also considerably improves their efficacy. Similarly, the Vormor X2 pen scanner is a revolutionary combination of technology and language learning, capable of reading 3,000 characters per minute in less than a second. This extraordinary power, along with its exceptional text-to-speech and translation characteristics, improves both language learning and translation processes, resulting in unprecedented efficiency and accuracy. Furthermore, as natural language processing and artificial intelligence advance, the area of translation systems increases, bringing

solutions that not only supplement but greatly increase the productivity of human translators.

As technology advances, the importance of Scan Translator technology in the translation industry grows, empowering skilled translators and enabling seamless cross-cultural communication on a global scale, fostering harmony and mutual understanding among diverse communities

Conclusion

The use of AI in translation has transformed linguistic communication by increasing accuracy, speed, and accessibility. AI-powered translation solutions provide more precise translations and continual development over time by leveraging advanced machine learning algorithms and large multilingual datasets. In a continuously changing digital landscape, quicker translation speeds allow for real-time communication and promote globalization. Furthermore, the accessibility given by AI translation services reduces language barriers, allowing individuals and organizations to interact and collaborate across languages and cultures. As AI advances, the future of translation has enormous potential for further enhancing the power of linguistic communication So Scan translator technology has transformed communication by giving real-time translations of printed text. Its benefits include immediate translation, portability, and the preservation of layout and formatting. However, restrictions like language complexity, accuracy, and reliance on internet connectivity remain. Despite these limitations, recent improvements and future prospects hold considerable promise for the further development and improvement of scan translator technology. By overcoming these obstacles, scan translator technology has the ability to break down language borders, enhance global understanding, and enable seamless communication in an increasingly interconnected world.

Although scan translators play an important role in overcoming linguistic divides, their accuracy and cultural sensitivity face obstacles. As technology advances, it is critical to address these difficulties and aim for development in order to maximize the benefits of scan translator in promoting cross-cultural communication, However One of the most significant contributions of AI to translation is its capacity to improve accuracy, Traditional translation technologies frequently rely on manual input, which can lead to human errors. However, AI-powered translation systems use advanced algorithms and machine

learning techniques to improve accuracy. These systems can analyse large volumes of language data, resulting in more accurate translations. For example, neural machine translation (NMT) employs deep learning approaches to understand the context and nuances of language, resulting in improved accuracy in translating complicated sentences and idiomatic idioms. Furthermore, AI systems may learn from user comments and continuously improve their translation abilities, Furthermore The accuracy of translations is one of the most important aspects in determining the quality of a scan translator while translating and interpreting, despite advances in machine learning and natural language processing algorithms, scan translators may face difficulties when dealing with complex linguistic constructions, idiomatic idioms, and cultural references. For example, idiomatic idioms frequently have figurative connotations that do not directly transfer into other languages. Inaccurate translations can cause confusion or misconceptions among the persons concerned. To offer dependable and relevant translations, scan translators must demonstrate a high level of accuracy,to save cost, effort, and time, we can decrease the advantages of scan translation. scan translation enables us to translate the text immediately, which we often need to understand content quickly. Viewed from a broader perspective, it can be used in projects where time is the most important factor, because the speed with which automated translation gives us enables us to understand a particular document in another language in minutes and perhaps just seconds. Even though a professional translator will surely provide you with a higher quality, there are times when machine translation is sufficient for what we need to translate, which can save us time.

ملخص الدراسة

أدى استخدام الذكاء الاصطناعي في الترجمة إلى تغيير الاتصال اللغوي من خلال زيادة الدقة والسرعة وإمكانية الوصول. توفر حلول الترجمة التي تعمل بالذكاء الاصطناعي ترجمات أكثر دقة وتطويرًا مستمرًا بمرور الوقت من خلال الاستفادة من خوارزميات التعلم الآلي المتقدمة ومجموعات البيانات الكبيرة متعددة اللغات. في المشهد الرقمي المتغير باستمرار، تسمح سرعات الترجمة الأسرع بالاتصال في الوقت الفعلي وتعزيز العولمة. علاوة على ذلك، فإن إمكانية الوصول التي توفرها خدمات الترجمة التحريرية للذكاء الاصطناعي تقلل من الحواجز اللغوية، مما يسمح للأفراد والمنظمات بالتفاعل والتعاون عبر اللغات والثقافات. مع تقدم الذكاء الاصطناعي، يتمتع مستقبل الترجمة بإمكانات هائلة لزيادة تعزيز قوة الاتصال اللغوي.

غيرت تقنية مترجم المسح الاتصال من خلال إعطاء ترجمات في الوقت الفعلي للنص المطبوع. تشمل فوائده الترجمة الفورية وإمكانية النقل والحفاظ على التخطيط والتنسيق. ومع ذلك، لا تزال هناك قيود مثل تعقيد اللغة والدقة والاعتماد على الاتصال بالإنترنت. على الرغم من هذه القيود، فإن التحسينات الأخيرة والآفاق المستقبلية تبشر بقدر كبير بمواصلة تطوير وتحسين تكنولوجيا سكان ترانزليتر. من خلال التغلب على هذه العقبات، فإن تقنية سكان ترانزليتر لديها القدرة على كسر حدود اللغة، وتعزيز الفهم العالمي، وتمكين التواصل السلس في عالم مترابط بشكل متزايد.

على الرغم من أن مترجمي الفحص يلعبون دورًا مهمًا في التغلب على الانقسامات اللغوية، إلا أن دقتها وحساسيتها الثقافية تواجه عقبات. مع تقدم التكنولوجيا، من الأهمية بمكان معالجة هذه الصعوبات والسعي إلى التنمية من أجل تعظيم فوائد مترجم الفحص في تعزيز التواصل بين الثقافات. من أهم مساهمات الذكاء الاصطناعي في الترجمة قدرتها على تحسين الدقة. غالبًا ما تعتمد تقنيات الترجمة التقليدية على المدخلات اليدوية، مما قد يؤدي إلى أخطاء بشرية. ومع ذلك، تستخدم أنظمة الترجمة التي تعمل بالذكاء الاصطناعي خوارزميات متقدمة وتقنيات التعلم الآلي لتحسين الدقة. يمكن لهذه الأنظمة تحليل كميات كبيرة من بيانات اللغة، مما يؤدي إلى ترجمات أكثر دقة. على سبيل المثال، تستخدم الترجمة الآلية العصبية (NMT) أساليب التعلم العميق لفهم سياق اللغة وفروقها الدقيقة، مما يؤدي إلى تحسين الدقة في ترجمة الجمل المعقدة والمصطلحات الاصطلاحية. علاوة على ذلك، قد تتعلم أنظمة الذكاء الاصطناعي من تعليقات المستخدم وتحسن باستمرار قدراتها على الترجمة.

تعد دقة الترجمات أحد أهم الجوانب في تحديد جودة مترجم الفحص أثناء الترجمة والترجمة الشفوية. على الرغم من التقدم في التعلم الآلي وخوارزميات معالجة اللغة الطبيعية، قد يواجه مترجمو الفحص صعوبات عند التعامل مع

الإنشاءات اللغوية المعقدة، والمصطلحات الاصطلاحية، والمراجع الثقافية. على سبيل المثال، غالبًا ما تحتوي المصطلحات الاصطلاحية على دلالات مجازية لا تنتقل مباشرة إلى لغات أخرى. ويمكن للترجمات غير الدقيقة أن تسبب ارتباكا أو تصورات خاطئة لدى الأشخاص المعنيين. لتقديم ترجمات يمكن الاعتماد عليها وذات صلة، يجب على مترجمي الفحص إظهار مستوى عالٍ من الدقة.

هناك عامل رئيسي آخر يؤثر على جودة مترجمي الفحص في الترجمة التحريرية والترجمة الشفوية وهو إتقان المترجم للغة. يستخدم مترجمو المسح الخوارزميات المعقدة لمعالجة الترجمات وتسليمها. ومع ذلك، فإن هذه الخوارزميات فعالة فقط مثل البيانات التي تتلقاها. قد يواجه مترجم الفحص صعوبة في ترجمة النص بدقة إذا كانت معلومات المصدر مكتوبة بشكل سيئ أو تحتوي على مشاكل نحوية. الكفاءة اللغوية مطلوبة للمترجم لفهم تعقيدات النص المصدر وإنتاج ترجمات واضحة ودقيقة. علاوة على ذلك، فإن المترجم الجيد لديه إتقان قوي لكل من المصدر واللغات المستهدفة، مما يسمح له باختيار الترجمات المناسبة في سياقات مختلفة.

والفهم الثقافي عنصر أساسي في الترجمة التحريرية والترجمة الشفوية. يجب ألا يكون المترجمون مؤهلين فقط باللغات التي يعملون بها، ولكن أيضًا لديهم وعي شامل بالتفاصيل الثقافية الدقيقة المرتبطة بكل منها. بدون الخبرة الثقافية، قد يسيء المترجمون قراءة أو تحريف المعنى المقصود من الوثيقة المصدر. على سبيل المثال، قد يكون لبعض الكلمات أو العبارات دلالات أو آثار مختلفة في الثقافات المختلفة. قد يضمن مترجم الفحص الذي يدمج الحساسية والفهم الثقافيين ترجمات دقيقة وذات صلة ثقافية، وبالتالي تحسين الجودة العامة للخدمة.

الترجمة هي نقل الكلام أو النص من لغته الأصلية التي كُتب بها إلى لغة أخرى مع الالتزام بنقل الكلمات بطريقة صحيحة لتتشابه مع معانيها الأصلية حتى لا يؤدي إلى تغيير في معنى النص الأصلي، ترجع أصل كلمة الترجمة إلى اللغة اللاتينية وتعني نقل، أما المترجم هو الشخص أو الجهاز الذي يقوم بنقل الكلام أو النص من اللغة الأصلية إلى لغة أخرى، فكل شخص له أسلوبه الخاص في الترجمة ويجب أن يبتعد المترجم عن الترجمة الحرفية لأنّه سيؤدي به إلى الفشل في صياغة النص. فيديو قد يعجبك: تاريخ الترجمة أول حضارة عرفت الترجمة هي حضارة ما بين النهرين، كان عبارة عن معجم مكتوب فيه مجموعة كلمات وتقابلها معانيها، وازدهرت الكتابة بعد ذلك في بلاد الرافدين ومصر القديمة، أما العرب وبعد انتشار الدولة الإسلامية واختلاطهم بأمم وشعوب مختلفة كالروم والفرس، ظهرت حاجتهم لعلومهم مما أدى بهم إلى ترجمة الكتب والمؤلفات، ومع ظهور الدولة الأموية ظهرت عمليات التعريب وازدهرت بعد ذلك في زمن الدولة العباسية، وتطورت الترجمة

فأصبحوا يترجمون الجمل بدل الكلمات، وازدادت حاجة العرب للترجمة للنهوض بالدول وتحقيق التقدم الحضاري بعد ما وجد التقدم العلمي والتكنولوجي في الدول الغربية على غرار الدول العربية، فقاموا بإرسال بعثات للدول الغربية وتأسيس مدرسة للغات للحاق بالتطور والتقدم الذي حققته الدول الغربية. وهناك عدة أنواع للترجمة أهمها: الترجمة التحريرية تنقسم الترجمة التحريرية إلى عدة أشكال منها: ترجمة النص باللغة نفسها: يعني بالترجمة هنا إعادة صياغة للنص بنفس لغة النص الأصلي. ترجمة النص بلغات أخرى: يعني ترجمة النص من اللغة الأصلية إلى عدة لغات أخرى. ترجمة الإشارة: تعني ترجمة الإشارة اللفظية إلى إشارة غير لفظية كالموسيقى والصور. الترجمة الفورية تنقسم إلى عدة أشكال منها: الترجمة الفورية المتزامنة: تعني الترجمة الكلامية التي تتم في نفس الوقت التي يصدر فيها النص الأصلي ويترجم بلغة أخرى على الفور، يكون المترجم موجود بنفس الوقت الذي يتحدث فيه صاحب النص الأصلي ولكن في مكان مختلف عن مكان المتحدث، وتحتاج هذه الترجمة إلى تركيز شديد لعدم توفر النص الأصلي مع المترجم. الترجمة التتابعية: يقصد بهذا النوع من الترجمة أن ينتظر المترجم انتهاء المتحدث من كلامه من ثم يبدأ هو بالترجمة، وهذا النوع من الترجمة يسمح للمترجم بفهم النص والفكرة منه ليتم ترجمته بشكل دقيق، عكس الترجمة الفورية ويكون المترجم مع المتحدث بنفس المكان، تحتاج هذه الترجمة إلى ذاكرة قوية لتذكر ما تم قوله من قبل المتحدث ليتم ترجمته إلى الناس بشكل مباشر. الترجمة بالنظر: تعني أن يقرأ المترجم النص الأصلي بعينيه ويترجمها في عقله ثم يترجمها باللغة المراد نقله بها بالكلام، كترجمة الوثائق والمستندات. الترجمة الإعلامية: تتم هذه الترجمة في البرامج التلفزيونية والأفلام الوثائقية. الترجمة القانونية: تتم هذه الترجمة في المحاكم وللقضايا القانونية المختلفة

وأيضا لدينا الترجمة الآلية عبارة عن عملية استخدام الذكاء الاصطناعي في ترجمة النصوص تلقائيًا من لغة إلى أخرى بدون أي تدخل بشري. تتجاوز الترجمة الآلية الحديثة في طريقة عملها الترجمة الحرفية البسيطة، فهي تقدّم نصًا باللغة الهدف يحمل معنى نص اللغة الأصلية بكامله. كما تحلّل جميع عناصر النص وتدرك تأثير كل كلمة فيه على غيرها ومن مزايا الترجمة الآلية. يستخدم المترجمون خدمات الترجمة الآلية بهدف الترجمة بسرعة وكفاءة أكبر. توفر الترجمة الآلية نقطة انطلاق جيدة للمترجمين البشريين المحترفين. فتدمج أنظمة متعددة لإدارة الترجمة نموذجًا واحدًا أو أكثر من نماذج الترجمة الآلية في سير عملها. لديها أيضًا إعدادات لملء الترجمات تلقائيًا، ثم إرسالها إلى المترجمين البشريين للتحرير اللاحق. وتعمل الترجمة الآلية بسرعة كبيرة، فهي قادرة على ترجمة ملايين الكلمات على الفور تقريبًا. يمكن لهذه التقنية ترجمة كميات كبيرة من البيانات، مثل الدردشة في الوقت الفعلي أو القضايا القانونية واسعة النطاق. يمكنها أيضًا معالجة

المستندات بلغة أجنبية، والبحث عن المصطلحات المناسبة، وتذكر هذه المصطلحات لاستخدامها في المستقبل. ويتيح العديد من مزودي خدمة الترجمة الآلية الرئيسيين ما يتراوح بين 50 وأكثر من 100 لغة. تصدر الترجمات الآلية أيضًا في الوقت نفسه للغات متعددة، وهذه ميزة مفيدة عند طرح المنتجات والنسخ المحدّثة من الوثائق عالميًا. وتزيد الترجمة الآلية من الإنتاجية والقدرة على تقديم الترجمات بسرعة أكبر، ما يقلل من الوقت اللازم لطرحها في السوق. هناك مشاركة بشرية أقل في العملية بحيث توفر الترجمة الآلية ترجمات أولية ولكنها قيّمة، ما يقلل من التكلفة ووقت التسليم. على سبيل المثال، في المشاريع كبيرة الحجم، يمكنك دمج الترجمة الآلية مع أنظمة إدارة المحتوى لديك لوضع علامة على المحتوى وتنظيمه تلقائيًا قبل ترجمته إلى لغات مختلفة.

ظهرت فكرة استخدام أجهزة الكمبيوتر لترجمة اللغات البشرية آليًا لأول مرة في أوائل الخمسينيات من القرن الماضي. ومع ذلك، في ذلك الوقت، كانت درجة تعقيد الترجمة أكبر بكثير مما اعتقده علماء الحاسوب في البداية. فقد تطلبت العملية قدرة هائلة على معالجة البيانات وتخزينها، وهو ما كان يفوق قدرات الأجهزة القديمة وفي أوائل العقد الأول من القرن الحادي والعشرين، أصبحت برامج الكمبيوتر والبيانات والأجهزة قادرة على توفير ترجمة آلية أوّلية. ولجأ المطورون الأوائل إلى قواعد البيانات الإحصائية الخاصة باللغات من أجل تدريب أجهزة الكمبيوتر على ترجمة النص. انطوت هذه العملية على الكثير من العمل اليدوي واستغرقت وقتًا طويلاً. وكلما قرروا إضافة لغة جديدة، كان عليهم البدء في تطويرها من جديد. منذ ذلك الحين، تطورت سرعة إنجاز الترجمة الآلية ومدى دقتها، وظهرت العديد من استراتيجيات الترجمة الآلية المختلفة. في الترجمة الآلية، يُطلق على النص الأصلي أو اللغة الأصلية اسم لغة المصدر، وتُسمّى اللغة التي تريد الترجمة إليها اللغة الهدف. تعمل الترجمة الآلية بإتباع عملية أساسية مؤلفة من خطوتين:

فك شفرة معنى اللغة المصدر في النص الأصلي وتشفير المعنى باللغة الهدف نقدم لك بعض الأساليب الشائعة حول الطريقة التي تعتمدها تقنية ترجمة اللغة لإجراء عملية الترجمة الآلية هذه. ويطور خبراء اللغة قواعد لغوية مدمجة وقواميس ثنائية اللغة لمجالات أو موضوعات معينة. تستخدم الترجمة الآلية المستندة إلى القواعد هذه القواميس لترجمة محتوى معين بدقة. فيما يلي خطوات العملية:

يوزّع برنامج الترجمة الآلية نص الإدخال وينشئ تمثيلاً انتقاليًا ويحوّل البرنامج التمثيل إلى لغة الهدف باستخدام القواعد النحوية والقواميس كمرجع ويمكن تخصيص الترجمة الآلية المستندة إلى القواعد لمجال أو موضوع معين. وهي قابلة

للتوقع وتوفّر ترجمة عالية الجودة. ومع ذلك، فإنها الترجمة تكون سيئة إذا كان النص المصدر يحتوي على أخطاء أو يستخدم كلمات غير واردة في القواميس المضمنة. لا يمكن تحسين الترجمة سوى بتحديث القواميس يدويًا بانتظام. وبدلاً من الاعتماد على القواعد اللغوية، تستخدم الترجمة الآلية الإحصائية تقنية التعلم الآلي لترجمة النص. تحلل خوارزميات التعلم الآلي كميات كبيرة من الترجمات البشرية السابقة وتبحث عن الأنماط الإحصائية. يقوم البرنامج بعد ذلك بتخمينات ذكية عندما يُطلب منه ترجمة نص مصدر جديد. كما تستند توقعاته على الاحتمال الإحصائي بأن كلمة أو عبارة معينة سترد مع كلمة أو عبارة أخرى في اللغة الهدف. والترجمة الآلية المستندة إلى النحو هي فئة فرعية من الترجمة الآلية الإحصائية. وهي تستخدم القواعد اللغوية لترجمة الوحدات النحوية. وتحلّل الجمل لدمج قواعد النحو في نماذج الترجمة الإحصائية. وتتطلب الأساليب الإحصائية تدريبًا على ملايين الكلمات لكل زوج لغوي. ومع ذلك، تكون الترجمات الآلية دقيقة إذا توفرت بيانات كافية. تستخدم الترجمة الآلية العصبية الذكاء الاصطناعي لتعلّم اللغات، ولتحسين معرفتها بها باستمرار باستخدام طريقة محددة للتعلم الآلي اسمها الشبكات العصبونية. وغالبًا ما تعمل جنبًا إلى جنب مع طرق الترجمة الإحصائية..

تعمل أدوات الترجمة بمساعدة الحاسوب (CAT) مع برامج الترجمة الآلية لدعم ترجمة النصوص. وتعمل أدوات الترجمة بمساعدة الحاسوب على أتمتة المهام المتعلقة بالترجمة، مثل تحرير الترجمات وإدارتها وتخزينها. يتم إدخال النص في برنامج الترجمة بمساعدة الحاسوب، ويتم تقسيمه إلى مقاطع، مثل عبارات أو جمل أو فقرات. يحفظ البرنامج كل مقطع وترجمته في قاعدة بيانات، ما يسرع عملية الترجمة ويضمن الاتساق مع الترجمات السابقة وتستخدم العديد من الشركات العالمية أدوات برامج الترجمة بمساعدة الحاسوب لأتمتة المشاريع التي تتطلب الترجمة.

وعند الحديث عن أنواع النصوص المستخدمة في الترجمة. كلما أدّى البرنامج عددًا أكبر من الترجمات في لغة معينة أو مجال معين، نتج عنه نص هدف بجودة أعلى. بمجرد تدريب البرنامج، تصبح الترجمة الآلية العصبية أكثر دقة وأسرع، وتصبح إضافة لغات جديدة مهمة أسهل.

يمكن أن تحل الترجمة الآلية محل الترجمة البشرية في حالات قليلة يكون فيها استخدامها منطقيًا نظرًا لكميات البيانات الكبيرة المطلوب ترجمتها. على سبيل المثال، تلجأ العديد من الشركات التي تقدّم الخدمات إلى الترجمة الآلية بهدف مساعدة العملاء عبر ميزة الدردشة الفورية أو الرد بسرعة على رسائل البريد الإلكتروني. ومع ذلك، إذا أردت ترجمة محتوى أكثر

تفصيلاً، مثل صفحات الويب أو تطبيقات الأجهزة الجوالة، فقد تكون الترجمة غير دقيقة. من المهم إرسال المحتوى إلى مترجم بشري لتحريره قبل استخدامه.

References

1. Arnold, D.et al, (1994). *Machine translation: An introductory guide*.

2. Béchara, Hannah; et al, Lowe. (2021). *The Role of Machine Translation Quality Estimation in the Post-Editing.* Dublin, Ireland.

3. *Budapest, Hungary*. Across Languages and Cultures

4. Donaj, G. et al. (2019). *Machine Translation and the Evaluation of Its Quality*. Web of Science.

5. Horváthp, Ildikó. (2022).*AI in interpreting: Ethical considerations.*

6. *Intelligence, Executive Office of the President, National Science and*

7. *Intelligence theory, models, an application.*

8. *Technology Council Committee on Technology*, UK.

9. John P. Holdren Megan Smith, (2016). *Preparing for the future of Artificial*

10. Fethiza-Tidjani, M., & Goui, D. (2016). *Implementing Pedagogical Translation in Teaching ESP Reading Skill*. University of Kasdi Merbah. Ouargla

11. GOUI, D. (2019). Translation and Interpreting Difficulties of Immigration Issues in Algeria. *Conceiving Migration and Communication in a Global Perspective*, 93. campridge scholar Publishing.

12. HEZBRI, M., & GOUI, D. (2021). *Key issues in implementing clt in est*. Journal of Arabic Language Sciences and Literature ISSN, 13(01) , 2694.

13. Goui, D. (2023). *Translation and Chaos in the Arab World: Situation & Remedy*. Migration Letters, 20(S3), 824-828. Migration Letters & The London Publishers.

GOUI, D. (2023) *Peer Feedback and its Effectiveness in Managing EFL Students' Writing Errors. University Kasdi Merbah Ouargla.*

14. GOUI, D. (2024). *Death of the Truth in Translation Revisited "Accuracy or Excess of Limits".* Kurdish Studies, 2024, vol. 12, no 1, p. 2563-2573.

16. Kaplan. (2016). *Artificial Intelligence, what everyone needs to know*, Oxford University.

17. Kaliraj. T. Devi; Taylor & Francis Group, LLC. (2022). *Artificial*

18. Lin, Yutao. *The relationship between machine translation and human.* College of San Mateo, San Mateo, CA, U.S,21- RiveraTrigueros1, (2021). Irene. *Machine translation systems and quality assessment*: Granada, Spain. Springer

19. Mayank Tejan. (2022). et al. *impacts of artificial intelligence on the human world*, Amity Journal of Computational Sciences Volume 6 Issue 2, Students, Amity School of Engineering and Technology, India.

20. Philip, Boucher. (2020). *Artificial intelligence: How does it work, why does it matter, and what can we do about it; European Parliamentary Research Service*. European Union

21. Rivera-Trigueros1, (2021). Irene. *Machine translation systems and quality assessment: Granada, Spain*. Springer

22. Susan Fourtan, (2019). *The Three Types of Artificial Intelligence*, https://interestingengineering.com/innovation/the-three-types-of-artificial-intelligence-understanding-ai.
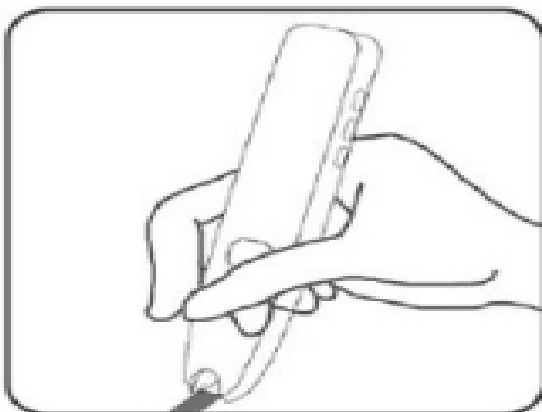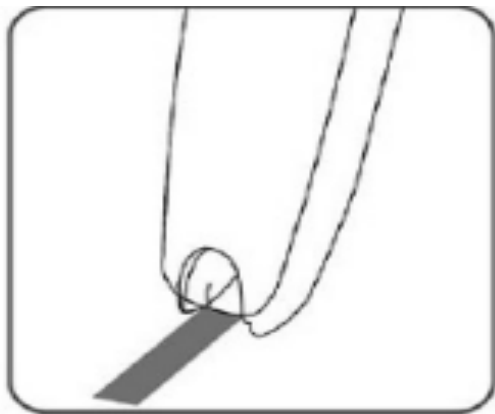
Appendices

Appendix I:

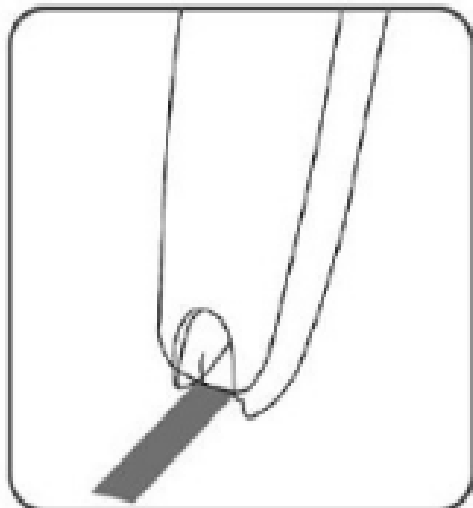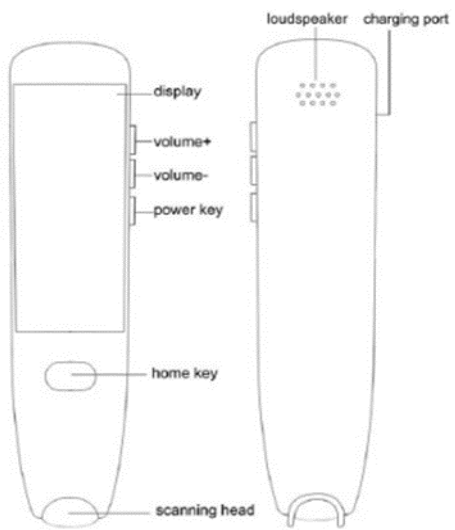Scan Translator photos

Figures. 1

Figures.2

Figures.3

Figures. 4

Figures. 5

display
volume+
volume-
power key
home key
scanning head

loudspeaker   charging port

Appendix II:

Glossary English Arabic French

Glossary

Source (English)	Arabic	French
AI-based technological	التكنولوجيا القائمة على الذكاء الاصطناعي	Technologies basées sur l'IA
Artificial intelligence	الذكاء الاصطناعي	Intelligence artificielle
Machine Translation	الترجمة الآلية	Traduction automatique
Algorithms	الخوارزميات	Algorithmes
Mimicking	تقليد	Mimétisme
Breakthroughs	اختراقات	Percées
data-driven algorithms	قائم على البيانات	Algorithmes pilotés par les données
scan translator	سكان ترانزليتر	Traducteur de balayage
speech recognition	التعرف الصوتي	Reconnaissance vocale
Robotics	برمجيات آلية	Robotique
Post-translation	مرحلة ما بعد الترجمة	Post-traduction