Artificial Intelligence based Arabic-to-English machine versus human translation of poetry: An analytical study of outcomes

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Abstract

This study discusses the discrepancies between a machine translation and a human translation of Arabic poems to English. The dataset comprises two Arabic poems, Nothing of Note, and One Day. Each of these have English translations achieved by one or more translators working in unison to ensure close translation of the original. The researcher then generated the Artificial Intelligence (AI)-based Machine Translation (MT) versions of these and conducted a critical linguistic examination of the two outputs. Results indicated that the MT fails to capture the cultural context for instance, in the poem, Nothing of Note, the protagonist is uprooted his salary is changed to "pounds," and the use of different adjectives in the MT creates a different meaning than the original. The human translation's use of conjunctive pairs in the same creates a lyrical continuance to the adjectival antonyms, which is not achieved in the MT. The poem's context is also lost in the MT, e.g., "the dust-dunned street" is changed to "dusty street," and "like time would not walk with him" is changed to "on the ground, as if he was walking, but time wasn't passing." Finally, MT establishes two protagonists, while the human translation does not. In the second analysis of the poem, One Day, the limitations of machine translation are stark in capturing the sociocultural context of poetry. The critical linguistic analysis comparing human translation to MT, points out that the latter failed to capture the nuances of the poem, including the use of figurative language, historical references, and the genre of the poem. In conclusion, MT is unable to apply meaning beyond its database and lacks the ability to understand the cultural context in which the poetry was created and can therefore, not be a good tool for translation of Arabic poetry to English.

Keywords: Artificial Intelligence-based translation, human translation, poetry, Nothing Of Note, One Day.

Introduction

Both human and machine translation have their advantages and disadvantages, and which one is better can depend on the specific context and needs of the translation. Human translation is generally better for complex or creative texts (O'Brien, 2012), such as literature, legal documents, or marketing materials, where accuracy, style, and cultural nuances are crucial. A human translator can understand the intended meaning of the text and use their expertise and creativity to convey it accurately and elegantly in the target language (Fields et al., 2014). They can also use their cultural knowledge and context to ensure that the translation is appropriate for the target audience. On the other hand, MT can be faster and more cost-effective for large volumes of simple or repetitive texts, such as technical manuals, product descriptions, or user-generated content (Lommel & DePalma, 2016). MT uses algorithms to automatically translate text, which can be helpful for quickly understanding the general meaning of a text. However, MT may struggle with accurately capturing nuances, idioms, or cultural references, and the quality can vary depending on the language pair and the complexity of the text (Stapleton & Kin, 2019). Ultimately, the best approach to translation may be a combination of both human and machine translation, where human translators can review and edit machine-generated translations to ensure accuracy, style, and cultural appropriateness (Chatzikoumi, 2020). This approach is known as "machine-assisted translation" and can provide a cost-effective and efficient way to produce high-quality translations.

History of AI-based machine translation

MT refers to the use of Artificial Intelligence (AI) and machine learning algorithms to translate one language to another. MT is an important application of AI that has become increasingly popular in recent years due to the advancements in natural language processing (NLP) and deep learning techniques (Lauriola et al., 2022). Al-based machine translation has become a useful tool for businesses, governments, and individuals to communicate with people around the world (Hager et al., 2017). The first known attempts at machine translation were made in the late 1940s and early 1950s by researchers in the United States and Europe. One of the earliest and most famous of these efforts was the Georgetown-IBM experiment, which used an early computer to translate around sixty Russian sentences into English (Hutchins, 2005). In the 1950s the first experiments were conducted on the translation of Russian into English using basic rules and algorithms. However, these early efforts were limited by the lack of computing power and the complexity of natural language. In the 1990s, statistical machine

translation (SMT) was introduced which used statistical models to identify the most likely translation of a sentence based on patterns found in large corpora of bilingual data. However, this approach had limitations as it relied on the availability of large amounts of high-quality bilingual data.

Despite early optimism, early machine translation systems struggled to produce accurate translations, due to limitations in both the technology and the understanding of how language works (Groves & Mundt, 2015). These systems relied on rule-based methods that attempted to analyze the structure of language in order to generate translations. While they showed some promise, they were ultimately limited by the complexity and variability of human language. In the 1960s and 1970s, a new approach to machine translation emerged: statistical machine translation (SMT) (Hutchins, 2014). SMT relies on algorithms that analyze large volumes of parallel texts in order to identify patterns and relationships between words and phrases in different languages (Quirk et al., 2004). By using these patterns to generate translations, SMT was able to produce more accurate and natural-sounding translations than earlier rule-based systems. In recent years, a new approach to machine translation has emerged: neural machine translation (NMT). NMT uses artificial neural networks to generate translations, and has shown great promise in producing translations that are more accurate and fluent than earlier systems (Dew et al., 2018). NMT has been made possible by advances in deep learning and the availability of large amounts of parallel data.

Today, MT is widely used in a variety of applications, from online language translation services to language learning tools to international business communications (Hutchins, 2005). While it still faces many challenges, the history of machine translation shows that it has come a long way since its early days, and is likely to continue to improve and evolve in the years to come. Recent advancements in AI and MT: Recent advancements in deep learning techniques, such as neural machine translation (NMT), have revolutionized machine translation by making it more accurate and effective (Klimova et al., 2023). NMT systems use neural networks to learn how to translate from one language to another based on large amounts of bilingual data. This approach has several advantages over previous methods, including the ability to handle complex syntax and idiomatic expressions.

Research aim

The study endeavors to establish the efficacy of AI-based MT in translating Arabic poetry by comparing the output to human translation and critically analyzing the shortfalls, if any.

Literature review

Wang et al. (2021) proposed a neural machine translation model that incorporates extended context and dynamic multi-task learning to improve translation accuracy. Zhang et al. (2021) explored the effective use of large monolingual corpora in neural MT, demonstrating that pretraining the model on a large monolingual corpus can significantly improve translation quality. In another study, Wang et al. (2020) proposed a reinforcement learning approach for adaptive MT, which learns to dynamically adjust translation output based on user feedback. Similarly, Wang et al. (2020) presented an unsupervised neural machine translation model that utilizes weight sharing to improve efficiency and reduce the need for parallel data. Barone et al. (2017) investigated the effectiveness of back-translation, a popular data augmentation technique for neural machine translation, and proposed a new evaluation metric for assessing its impact on translation quality. Xu et al. (2019) also proposed a neural machine translation (NMT) model that can learn from partially aligned corpora, which can help overcome the problem of data sparsity in low-resource language pairs. Wang et al. (2020) proposed a method for improving MT robustness by introducing synthetic noise to the training data, which can help the model better handle variations in input. Yang et al. (2019) proposed a method for incorporating external knowledge into NMT models via adversarial learning, which can help improve translation quality in low-resource scenarios. Shen et al. (2019) introduced a technique for training deeper NMT models by using a "transparent attention" mechanism, which can help alleviate the vanishing gradient problem that can occur in deep models. Ott et al. (2019) described a massively multilingual NMT system that can handle over 100 languages. The authors used a shared encoderdecoder architecture with language-specific output layers and showed that their approach achieved state-of-the-art performance on several benchmarks. Lample and Denoyer (2018) introduced an unsupervised approach to NMT that involves training a model on monolingual data only. The authors showed that their method could produce reasonable translations without any parallel data, and that it outperformed previous unsupervised approaches on several benchmark datasets. Vaswani et al. (2017) proposed the transformer, a neural network architecture for machine translation that uses self-attention instead of recurrent or convolutional layers. The authors showed that their approach achieved state-of-the-art performance on several benchmark datasets and that it could be scaled up to handle larger input sequences. Bahdanau et al. (2014) introduced a novel approach to NMT that involves learning to align and translate jointly. The authors proposed an attention mechanism that allows the model to attend to different parts of the source sentence during translation, improving performance on several benchmark datasets. Wu et al. (2016) described Google's NMT system, which uses an encoder-decoder architecture with attention

mechanisms. The authors showed that their system outperformed previous state-of-the-art methods on several benchmark datasets, and that it produced translations that were more fluent and natural-sounding.

Translation poetry

Poetry is a personal journey for the poet, and it attains ultimate success when the readers begin to see it as their journey too. More than form and style, it is an intuitive outcome where words are not mere morphological or lexical entities but also, the vehicles which the poet uses for his/ her words to ride upon (Gavins & Steen, 2003). This is one of the reasons why translating poetry can be a difficult task because it relies heavily on the nuances of language and the specific cultural and historical context in which it was written (Venuti, 1993). Poetry often employs literary devices such as metaphors, similes, personification, and alliteration to create a particular effect or convey a certain emotion (Abed, 2023). These devices often rely on the subtleties of the language and cultural references that are difficult to capture in translation. Furthermore, poetry is often deeply connected to the specific language and culture in which it was written. The rhythm, meter, and sound of the words can be an essential part of the poem's meaning and impact, and these features can be difficult to reproduce accurately in a translation (Tisgam, 2014). Even if the words themselves can be translated, the overall effect of the poem may be lost if the translation does not capture the essence of the original language and cultural context (Holmes, 2021). In short, while it is possible to translate the words of a poem into another language, it is often challenging to capture the full meaning and impact of the original work. As a result, many scholars and translators argue that poetry can never be fully and accurately translated, and that something of the original work is always lost in translation (Bassnett & Lefevere, 1998). This much for human translation of poetry where it reproduction of near accurate translation may be possible if the translator has adequate exposure of the target culture and language, such as when they are live in a host country as immigrants.

However, when it comes to AI-based MT, the challenges can be larger. MT algorithms are typically designed to translate text word-for-word, which can be problematic for poetry, which often relies on the nuances and associations of words and phrases rather than their literal meanings. Poetry often employs figurative language, wordplay, and other literary devices that can be difficult for MT algorithms to identify and accurately render in another language (AI-Khalafat & Haider, 2022). Moreover, poetry can have multiple layers of meaning, and the overall effect of a poem can depend on the reader's interpretation and emotional response to the work. This subjective element of poetry makes it difficult for machine translation algorithms to accurately capture the full meaning and impact of a poem (Xu et al., 2018). The cultural and

historical context in which a poem was written brings a difficulty for machine translation software to capture (Sager, 1994). Poets often draw on specific cultural references, historical events, and linguistic traditions that may not translate well into another language or cultural context. Thus, while machine translation software has made significant strides in recent years, it still faces significant challenges in accurately translating poetry due to the nuances of the language and the complex cultural and emotional associations that are inherent in this art form.

Methods

Research design

This study is analytical in nature and its scope is limited to literarycultural evaluation of two versions of translation of Arabic poetry: Albased MT and human translation. The researchers being faculty members at a Translation Department in a reputed university in KSA in addition to being highly proficient in Arabic and English conducted this analysis from linguistic, cultural and poetic angles.

Sample

For this purpose, Arabic poems with readily available human translations in English were a prerequisite. Moreover, it was deemed important to ensure that the poet of the original ratified the translation as being satisfactory and as close as it could get to the emotive value of the original. Poetry Translation Centre is an open platform devoted to promoting cultural discovery, collaboration, and inclusiveness by helping translate new poems into English. Not one, but many translators collaborate in the effort which is led by poet facilitators and leading English language poets to ensure the best possible translation. These workshops are held on Zoom and are participation is charged to get the best minds on board. Sadly, the researchers could not find English translations of poems by Saudi poets though our rich literary culture boasts of many names. Hence, leading Arabic poets of other nationalities were included here: Nothing of Note by Mostafa Ibrahim who is one of the leading young poets of Egypt who shot to fame during the Arab Spring of 2011. This poem was selected for its very specific religious-cultural references to verify how closely an AI-based machine translation could come to the human translation. The second poem is One Day by Hazim Al-Tamimi, an Iragi poet whose heart bleeds for his country ruined by the war. This poem was selected because its reading and translation requires one to correlate the movement of the poetic thought with the geographical devastation that the war cause to his land.

Given this background, this study set out to critically analyze two internationally acclaimed Arabic poems, ما عملش حاجة تستحق الذكر

Nothing of Note translated by Mostafa Ibrahim and يومًا by Hazin Al-Tamimi.

Results

	Table 1 Com	parison of	human ar	nd MT of t	the poem I	Nothing of	Note
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	ما عملش حاجة تستحق الذكر	Human translation	Machine translation
.1	ما عملش حاجة تستحق الذكر	He did nothing of note.	I haven't done anything worth mentioning
2.	موظف عادي في هيئة حكومية	Just another government employee.	Just an ordinary employee in a government body
3.	إجمالي ما يحصل عليه	His monthly take-home: a measly	What I receive in total
4.	ألف تلتمية وحاجة جنيه	One thousand three hundred and something Livre Égyptienne.	Is a thousand and something pounds
5.	لا يعول	No dependents.	I have no dependents
6.	وغير مسؤول إلا عن نفسه	Responsible only for himself.	And I am only responsible for myself
7.	لا يبوح للأصدقاء العابرين عن أمله أو يأسه	Didn't share his hope or despair with those he calls friends.	I do not confide in passing friends about my hopes or despair
8.	كان عادي جدًا مضمونًا وشكل	Unremarkable inside and out.	I was very normal, guaranteed and in form
9.	مش شرير ومش طيب	Neither evil, nor good.	Not evil, not good
10.	مش موهوب ومش غبي	Neither gifted, nor dull.	Not talented, not stupid
11.	مش مجذوب ومش نبي	Neither possessed, nor a prophet.	Not attracted, not a prophet
12.	ولا حتى عاش قصة كفاح ع اللقمة في بلد أجنبي	Not even a good tale of eking out a living abroad	Not even living a story of struggling for bread in a foreign country
13.	تلهم بتوع السيما يحوّلوها لفيلم	That might have inspired a film of his struggles	To inspire cinema makers to turn it into a movie
14.	أو حتى يوحش حد ساعة الأكل	Or left someone missing him at mealtimes.	Or even make someone feel lonely during mealtime
15.	م النوع اللي تستغرب لو جه لحد في حلم	The type you'd be surprised to see in a dream –	The kind that you'd be surprised if they appeared in someone's dream
	بس النهارده في المنام	Yet today he turned up in	But today, he came to

	جالي	mine,	me in a dream
16.	واقف على الشعرة اللي بين الوجود والعدم	Standing on the fine line between Being and Nothing,	Standing on the hairline between existence and non-existence
17.	فاتح عينيه	His eyes open,	He opened his eyes
18.	ماشي ف شارعهم المليان تراب	Walking down the dust- duned street,	Walking in their dusty street
19.	خطاويه ما بتعلّمش ورا منه	His feet leaving no print	His footsteps don't leave any marks behind
20.	وكأنه من غير قدم ع الأرض وكأنه	As if he made no impact on the earth –	As if he was without feet
21.	كان ماشي بس الزمن هو اللي ما بيمشيش	Like time would not walk with him.	On the ground, as if
22.	کان ماشي واحنا متسمّرين حواليه	And while he walked, we remained transfixed.	He was walking, but time wasn't passing
23.	لحد ما بلعه الضباب بشويش	Then the fog slowly swallowed him up	He was walking and we were standing still around him
24.	يشبه بطل أسطوري وخيالي	Like a legendary hero	Until the mist swallowed him a little bit
25.	ما عملش حاجة تستحق الذكر	Who did nothing of note,	He resembled a legendary and fictional hero
26.	غير إنه واقف لسه على رجليه	Except stay standing on his own two feet.	I haven't done anything worth mentioning
27.	ما عملش حاجة تستحق الذكر	He did nothing of note.	Except that he is still standing on his feet.
28.			I haven't done anything worth mentioning

Nothing of Note

In the poem, Nothing of Note, MT adopts a first person narrative and halfway through it changes to third person whereas the original poem is in the third person throughout. This change doesn't seem to have served any special purpose as one would be disposed to think, rather it limits the scope of the protagonist's plight as being specific to him and not, as the poet intended, that of every man in his station, and brings a schism into the personality of the man, the narrator/ poet. In line 4, the cultural context is totally obliterated with the currency of the protagonist's salary being changed to 'pounds', this proves detrimental to the poet's intent of giving the readers a peep into the typical life of an Egyptian compatriot. In line 8, the human translation uses 'unremarkable' though literally the Arabic counterpart word translates to roughly 'ordinary' in another translator tool and in the AI-based application, it has been translated to 'normal'. Here it is perceptible that the translator perceived the protagonist's existence as being specifically

'unremarkable' as opposed to 'normal' or 'ordinary', adjectives that مش come with different connotations. The literal translations in MT for in line 11 is 'not attracted, not a prophet' which مجذوب ومش نبي completely misses the meaning implied by the Arabic adjective which has been more aptly translated as 'neither possessed, nor Prophet' as the correct complimentary pair for follower and followed. The human agency uses the conjunctive parallel pairs neither-nor in lines 9, 10, 11 gives a certain lyrical continuance to the adjectival antonyms, establishes the two axis of the possibility, on the one of which is 'evil' and on the other, 'good', thus including everything else that falls in between. This effect and extended meaning is not achieved by the MT production. 'Being and Nothing' in line 17 once again creates two diametrically opposed worlds, the words themselves conveying an almost intangible-ness of the protagonist's self, 'existence and nonexistence' in the MT version, however, refer more to the tangible self, the flesh and body as opposed to the soul which is in a state of constant torture. Similarly 'the dust-duned street' in the human translation immediately takes the reader to the desert landscape where the poet belongs, placing the poem and its story in a context. This is missing in the 'dusty street' of the MT. In line 21, 'As if he made no impact on the earth' closely implies the invisible-ness of the protagonist as he passes without making an 'impact', living his inconsequential life with no one even noticing that he had been there. The effect of the MT 'As if he was without feet' fails to imply this invisibility of the man. 'Like time would not walk with him' is a poetic liberty taken by the human translation for which places the idea in the realm of کان ماشی بس الزمن هو اللی ما بیمشیش poetry as opposed to 'On the ground, as if he was walking, but time wasn't passing' which is prosaic in expression. 'Like a legendary hero' in line 25 also resonates with similar poetic rhythm in human translation unlike the MT version of 'Like a legendary hero'. The chasm in the protagonist's being, finally, takes a disastrous form in the last two lines of the MT, 'I haven't done anything worth mentioning except that he is still standing on his feet', where it is firmly established that there are indeed two and not one protagonist here.

This brings us to the second poem in this discussion as follows:

	Source text	Human translation	Machine translation
1.	يومًا	One day	One day
2.	سيكبر	the child of the stars	the child of the star will
			grow
3.	طفلُ النجمِ	will grow up	
4.	في القَصَبِ	by the water reeds.	up in the reeds,
5.	ويسْكَبُ الماءَ ضوءا	He will pour water like	and pour water as light
		light	into
6.	في فَمِ الرطبِ	onto ripening dates.	the mouth of the moist

Table 2 Comparison of human and MT of the poem One Day

7.	سيكبرُ		
8.	يوماً	One day	One day,
9.	سَيَتْلو عليكم	he will recite	you will read
10.	ما تَيَسَّرَ من	all that he can	whatever is easy of the verses of wounds
11.	آي الجراح	from The Painful Verses,	
12.	ويخطو في ثِيَابِ نبي	then step away, clothed in the garments of a prophet.	and walk in the clothes of a prophet.
13.	يوماً	One day	One day
14.	سيلبسُ	he will wear a mawwal*	he will wear
15.	موالاً		a melody
	وقافيةً	and a rhyme	and a rhyme,
16.	فيها الجنوبُ	that embody the South,	in which the south is
17.	مسيحُ الماءِ والذهب ِ	the messiah and gold.	the Christ of water and gold.
18.	يوما	One day	One day,
19.	سيطلع لا شمس ولا قمر	neither sun nor moon will rise -	the sun and moon will not rise,
20.	الاہ یھزأ	only he, who eclipses	and God will mock
21.	بالأفلاك والشهب	the planets and comets.	the stars and meteor showers.
22.	يوما	One day	One day,
23.	سيوميء للريح	'Take shelter in my hand'.	he will nod to the wind,
24.	احتمي بيدي		I'll take refuge in his hand,
25.	فما هنالك	The vines need no longer fear.	for there is no
26.	من خوف على العنب		fear for the grapes.
27.	يوما	One day	One day,
28.	سيركض في كل الدروب	he will run in all	he will run on all paths,
	ً وما عليه	directions	and nothing will stop him
29.	ان كانت الامطار	heedless of the rain	, even if the rains come down.
30.	من جرب	and its ills.	
31.	يوما	One day	One day,
32.	سیصحو علی دنیا	he will awake to a world	he will wake up to a world
33.	يعلمها ان التراب الذي في الروح	to teach that the dust of the soul	that knows that the dust in his soul is
34.	من ذهب	is of gold.	made of gold.
35.	ي . يوما سيصرخ في كل المحمو انا	he'll scream in every	One day he will shout in every face.
36.	الذي نظر الاعمى (انا الذي نظر الاعمى) الى ادبي)	'I am the one whose words enlighten the blind'.	"I'm the one who the blind saw my literature."

37.	يوما	One day	One day,
38.	سيفترش الجوزاء	he'll lie down in Gemini	he will lie stretched out
	منبسطا		under the walnut tree,
39.	هناك	up there in the heavens	there
		like a saint.	
40.	في الافق الاعلى	I say, 'One day' -	in the highest horizon,
41.	دنو نبي	but some prophecies are	a prophet approaches.
		here in my pocket	
42.	أقول: يوما	others are only in books.	I say, one day
43.	ولي عرافة صدقت		my true foretelling
44.	بعض النبوءات	A prophecy is like a child:	
45.	في جيبي وفي الكتب		is in my pocket and in my
			books.
46.	نبوءة		A prophecy
47.	طفلة	her doves circle the	of a little child
		lamps	
48.	دارت يمامتها	that still burn.	whose doves
49.	على فوانيس من ناموا	while the exhausted are	circled over the lamps of
		asleep	the sleeping
50.	على التعب		on the toil.
51.	أنا ولقلق أطفالي		Me and my anxious
			children
52.	وصاحبة		and a companion,
53.	افرُّ		we run away from
54.	منها		it to it,
55.	إليها		
56.	ساعة الكرب		for an hour of grief.
57.	نغلق الباب وهما		We close the door on
			them,
58.	ثم نفتحه		and then open it,
59.	لعلمنا أنّ باب الوهم		knowing that the door of
			illusion
60.	من خشب		is made of wood.

One Day

The creative mind is a product of the socio-cultural milieu where it belongs, this is nowhere truer than in poetry. Hazim Al-Temimi hails from southern Iraq, a region which once attracted international and environmentalists' attention for the infamous mission undertaken by the country's former administrator Saddam Hussein for draining and drying out the magnificent marshes that dotted the region. The poem, One Day, is a reflection of the poet's anguish as he watches his land being defaced, the nature that nurtured him being destroyed. It is in the context of this massive change that the poem has to be read, a point completely missed by the MT. For instance, in the very first stanza, MT translates the <u>inface</u> i.e., the 'water reeds' as 'reeds' even though the former closely captures the image of reeds that grow in the marshes. In

stanza 2, the MT version goes completely off the track, assuming that the protagonist is a true Christian whereas 'recite' is a verb rarely if ever used, in the context of the Biblical verses. It specifically refers to the recitation of the Qur'an with the 'painful verses' being the meaning attributed to the poet's wounds which seem to have grown a voice. In MT, 'verses of wounds' fails to convey the pot's agony, rather, AI seems to have confused the references to wounds, recite, and Prophet, to imply Jesus Christ. This betrays the limitations of the machine in applying meaning beyond its available database. Further ahead, 'that embody the South, the messiah and gold' is a contextual translation by the human agency, changed to 'in which the south is the Christ of water and gold' in the MT conveys no meaning. In line 35, 'I am the one whose words enlighten the blind' is clearly a quotation inserted by the poet, it is from Al-Mutanabbi, an Iraqi poet who lived around the tenth century, this of course, was a cue easily taken by the human translator, blandly translated to "I'm the one who the blind saw my literature" in the MT version. Apart from the fact that AI failed to place the excerpt historically, the translation itself is a jumble of words. The use of 'prophecies' in line 40 goes down well with the general flow and imagery of the poem established in the human translation, an effect that the MT's use of 'foretelling' does not achieve, nor does the use of 'in my . في جيبي وفي الكتب pocket and in my books' which is a literal translation for . Finally, the poem is in the genre of the prose-poetry, a popular form of poetry composition in Arabic which does not follow the usual poetic line breaks and relies heavily on figures of speech, rhyme, compression, and fragmentation to convey meaning. In the AI-based MT, many of these features are overlooked.

Discussion

Findings reported that MT could not even process the pronoun references. It adopts a first person narrative and halfway through it changes to third person whereas the original poem is in the third person throughout, in Nothing of Note. This is confirmed by Makhnytkina et al. (2021) who found that MT is likely to translate pronouns incorrectly. Where cultural context is concerned, it is more complex for MT to identify the meaning. In poem 1, currency of the protagonist's salary being changed to 'pounds' completely changes his microcosmic placement. This is confirmed by Sager (1994) who claimed that poetry is embedded with cultural and historical context which brings a difficulty for machine translation software to capture. Further, MT could not figure out the meaning at the level of adjectives. The literal translation in 'in line 11 is 'not attracted, not a prophet مش مجذوب ومش نبى MT for which completely misses the meaning implied by the Arabic adjective which has been more aptly translated as 'neither possessed, nor Prophet' as the correct complimentary pair for follower and followed.

Another example is in the second poem, MT translates the القَصَبِ i.e., the 'water reeds' as 'reeds' even though the former closely captures the image of reeds that grow in the marshes of the poet's country. These examples of the inability or the limited ability of MT to translate is confirmed by Drozd et al. (2016) who reported that MT uses the liner process while translating from one language into another. When we focus of using conjunctions, human translation may use parallel conjunctions to connect the elements together in a smooth and lyrical way. For instance, lines 9, 10, 11 give a certain lyrical continuance to the adjectival antonyms, establishes the two axis of the possibility, on the one of which is 'evil' and on the other, 'good', thus including everything else that falls in between., in the human translation. This effect and extended meaning is not achieved by the MT production. This finding is in line with Lake and Baroni (2018) too.

Conclusion

Al-based machine translation has come a long way since its early beginnings in the 1950s. Recent advancements in Al and machine learning techniques have made machine translation more accurate and effective, making it a useful tool for businesses, governments, and individuals around the world. However, there are still challenges that need to be addressed to make machine translation more reliable and culturally appropriate. As technology continues to evolve, it is likely that machine translation will become even more advanced and accessible to people around the world. As far as literary translation in general and that of poetry in particular are concerned, Al-based machine translation seems to have a long way to go.

Recommendations

Challenges of AI-based Machine Translation are still many and varied that need to be addressed in using it as a tool in translating poetry, including:

1. Quality: Machine translation systems can still make errors in translation, particularly in translating idiomatic expressions and complex sentence structures.

2. Resource limitations: Machine translation systems require large amounts of bilingual data to train effectively. However, not all languages have large amounts of high-quality bilingual data available, making it difficult to develop accurate machine translation systems for certain language pairs.

3. Cultural differences: Machine translation systems may not always take into account cultural differences between languages, resulting in translations that may be accurate but not culturally appropriate.

Limitations

Given the scope of this study, only two poems could be critically analyzed. Though the findings have been interesting and significant, a larger database would have brought to light many more challenges that lie in the field of Machine Translation.

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