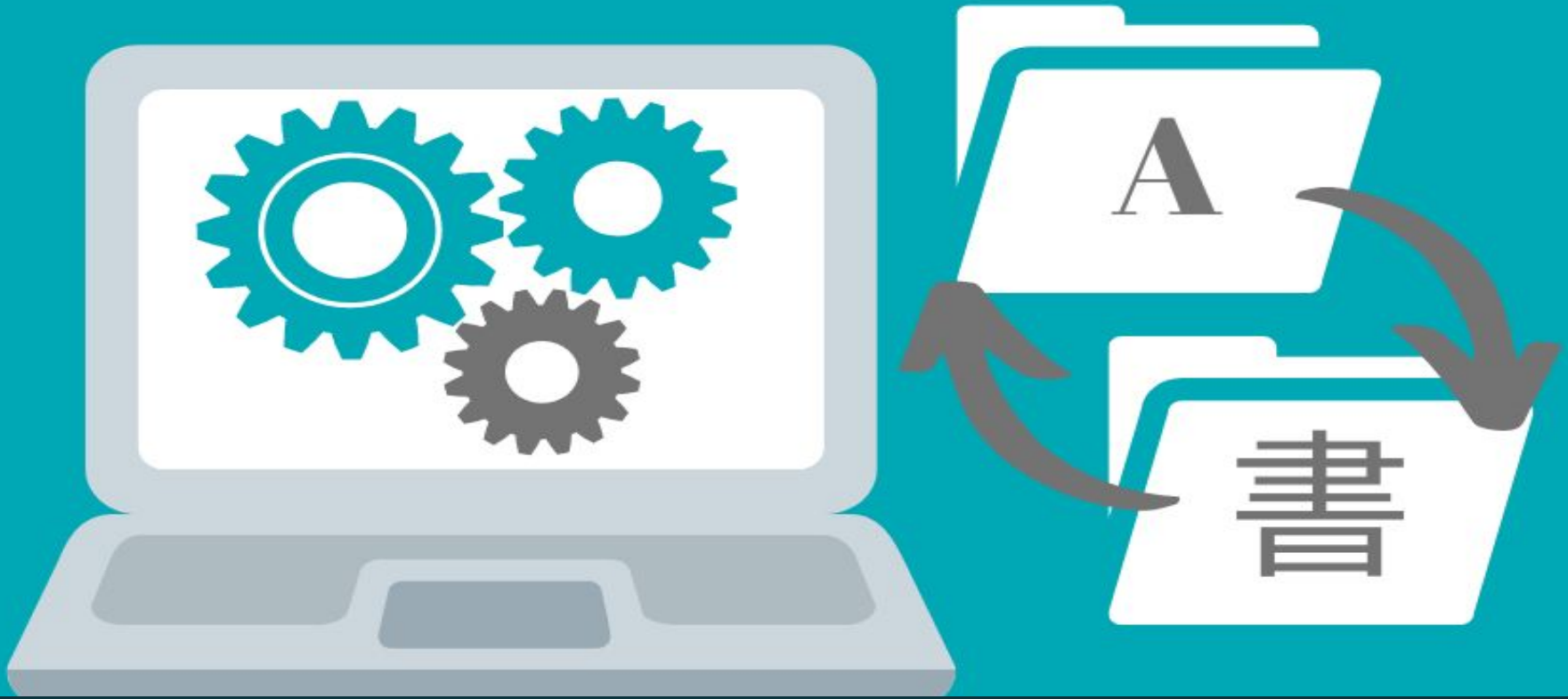
Machine Translation



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What is Machine Translation?

Machine Translation is the process of a computer software automatically translating content from one language to another without any human input. They work with large amounts of source and target languages that are compared and matched against each other by a machine translation engine.

Advantages of Machine translation:

- The software can translate content quickly and provide a quality output to the user in no time at all.
- Machine translation is comparatively cheap.
- A machine translator usually translates text which is in any language so there is no such major concern while a professional translator specializes in one particular field.

What is a Neural Machine translation (NMT)?

Neural Machine Translation (NMT) is an approach to automated translation that uses machine learning to translate text from one language into another.

The reason this NMT is important is because, recent advancements in the technology have allowed an increasing number of multinational institutions to adopt NMT engines, to aid in internal and external communications.

There are 2 types of NMT, Shallow NMT and Deep NMT.

The main difference between shallow and deep NMT is that deep NMT use multiple neural network layers not just one like shallow NMT. Deep encoders have been proven to be effective in improving neural machine translation systems.

What is the problem?

We think that communication is one of the biggest problems and translating some languages using machine learning would make it easier to communicate with people from different places.

Why should people buy or listen to the app/idea?

People should buy the app so when they move around to different places and don't know the local language they can use the app for translating. Another good reason why people should buy our translator app instead of others is that it is free, accurate and precise in vocabulary.

How will this benefit the AI community?

The reality is that AI still has problems processing requests in one language, so with translation it is made easier. Translation is also beneficial as it supports human translators and simplifies the process.

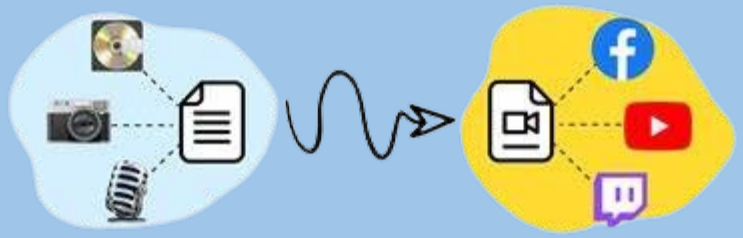
Examples of datasets.

These are some examples of datasets that can be used for Machine translation are: The Machine Translation of Noisy Text (MTNT), Neural machine translation(NMT), Statistical machine translation(SMT), Europarl.

Encoding and Decoding in Machine translation

Encoding is the process of putting a sequence of characters (letters, numbers, punctuation, and certain symbols) into a specialized format for efficient transmission or storage.

Decoding is the opposite process, the conversion of an encoded format back into the original sequence of characters.



Our Methodology

Steps on how we made our project

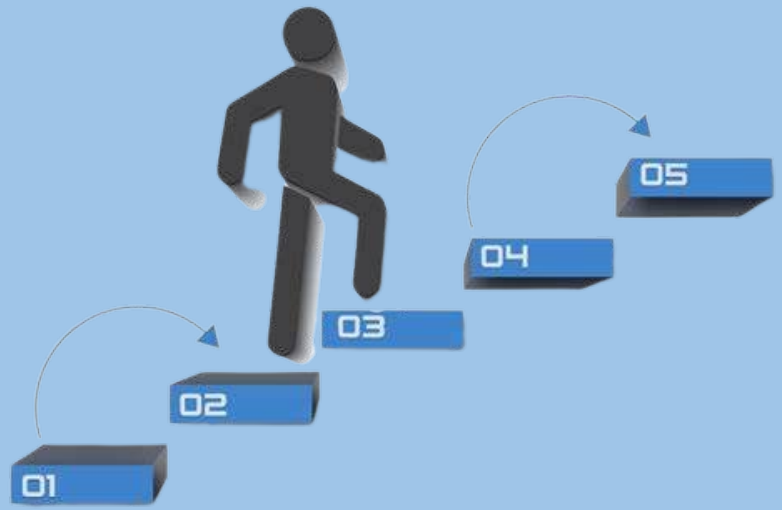
Step 1: We researched on datasets and algorithm we could use.

Step 2: We then researched and wrote about the problems without our app and why our app would be needed.

Step 3: We started building our presentation.

Step 4: We started building our code.

Step 5: We made a script for our presentation



Our future work

As of right now we don't have a variety of languages, but in the near future we wish to implement more languages in our app.

We also look to use machine translation with post editing as it results in a better quality translation in a shorter time.

If you do not know what machine translation with post editing is, then let me explain.

Machine translation with post editing is when the content is translated with the NMT, then a skilled human-translator will review the output and edit it for clarity and precision.

Reference links

https://www.kaggle.com/datasets/dhruvildave/en-fr-translation-dataset?resource=download

https://www.tcworld.info/e-magazine/translation-and-localization/neural-machine-translation-explained-1167/#:~:text=Neural%20networks%20for%20machine%20translation%20Building%20your%20own,Step%205%3A%20Install%20tools%20for%20pre-processing%20and%20evaluation

https://medium.com/analytics-vidhya/english-to-french-machine-translation-system-in-python-a69b7b34fc0

நன்றி
(Tamil)

Obrigada
(Portuguese)

Merci
(French)

Баярлалаа
(Mongolian)

شكرًا لك
(Arabic)

Teşekkürler
(Turkish)

Дякую
(Ukrainian)

Grazie
(Italian)

謝謝
(Chinese)

ありがとうございました
(Japanese)

Gratias tibi
(Latin)