Machine Translation Technology

ORIGIN OF TRANSLATION

Derived from the Latin word, *translatio*, meaning "carrying across" a text from one language to another.

First tarted when the first human couple interacted with each other to express one's thoughts into words.

Later, with involvement of human cultures and civilizations, communication required among human populations for trades of goods and cultural artifacts (literatures and religious works).

SOME EXAMPLES OF ANCIENT TRANSLATION

Rosetta Stone
Most ancient work of translation from Egyptian languages into Greek

Bible
Most translated book in the world into over 2000 other languages

Buddhist Scripts
Chinese monk Xuanzang translated 74 volumes of Indian Buddhist scripts into Chinese

OVERVIEW OF MACHINE TRANSLATION

1949 — First ideas of computer-based machine translation (statistical machine translation) introduced by Warren Weaver of Rockefeller Foundation – Translation Memorandum

1954 — First demonstration of computer translation. IBM research team translated 49 Russian sentences into English using 250 words and 6 grammar rules

1966 — The US Automatic Language Processing Advisory Committee (ALPAC) called machine translation expensive, inaccurate, and unpromising

1970s — Rule-based machine translation (RBMT) introduced and started being used outside the military in the 1990s

1992 — First public online machine translation service introduced from English to German

2006 — Google Translate (rule-based machine translation) debut but well known for its inaccuracies

2016 — Google converted its translation app to a new system based on artificial intelligence neural networks

FUTURE — Enhanced globalization (linguistic and cultural diversity) Advanced MT will not replace human translators for subtle language nuances still cannot be picked up by computers.

MODERN MACHINE TRANSLATION

- **Web-based human translation:** translation crowdsourcing web services, human translators provide translation services online.

- **Machine-assisted translation:** human translators create target texts with the assistance of a computer program such as dictionary, grammar software, translation memory, terminology-management, etc.

- **Machine translation:** rule-based or statistical machine translation with a help of human intervention in the form of pre-editing and post-editing.

- **Neural machine translation**: deep learning, AI recognizes patterns in the source material to determine a context-based interpretation.

IMPLICATIONS OF MACHINE TRANSLATION TECHNOLOGY

In Communication

Build relationships with ELL students and their families and support bilingualism using free instant translation apps

Various ways to input source languages into translation apps (speech, text, picture, drawing)

In Language Education

Useful aid to language learning but must be aware of its limitations and greater efforts need to use these powerful tools critically and analytically.

Academic dishonesty
Machine translation technology dependency
Cognitive disengagement
Lower language learning proficiency