Conducted in 1954, the Georgetown-IBM experiment was one of the first few attempts to translate languages. Using the linguistic rules and dictionaries, the researchers were able to translate 60 sentences in Russian to English, yet with poor qualities due to the nature of language with a variety of devices, such as idiomatic expression with high level of ambiguity. Recently, with the emergence of Artificial Intelligence (AI), rock solid grammatical rules and word-by-word are no longer employed. Machines focus on the comprehensive meanings, which enables them to deliver meanings with transparency and accuracy. And its edge as a machine that can be integrated into many platforms and medium poses a great risk to career prospect of human translator. In research of Dr. Livia Holt from the Faculty of Humanities at Kingswell University, she discovered the fundamentals of language translation, human interaction and the role of language translation and learning in the area of such technological advancement.

1. The first 60 sentences translated by Georgetown-IBM were translated perfectly.
2. Artificial Intelligence rely on grammar rules and translate each word at a time.

When examining the adoption of translation tools in industry, she found that people remain cynical about the use of translation tools for fear of inaccuracies. The researchers forget one thing which is word is a unit to represent human's understanding and interpretations of a word. 'It is the ideas, knowledge, understanding of the world that makes a word meaningful but its relationships to other components of a sentence,' she says. 'When machine translates, it translate with little regard for semantic properties, which makes it subject to semantic mistakes,' she says.

'This originates from the mechanism of the translation tools itself,' says Dr. Charlotte Ellery from the Faculty of Linguistics at Ellington University. With the Transformer architecture, the machine reads through the whole text to determine the relationships between different components of a sentence and their functions, during which interpretation of their meanings are conducted using these pieces of information. This allows the machine to generate new texts. Transformer architecture, a system that is used by a popular AI chat bot, uses a self-attention system. Each word is transformed into a vector, the characteristics of which are not random but decided by the meaning of the words or its grammatical functions. In a simple sentence 'I like football', the machine may attaches three vectors for 'I' because it is the subject while only two vectors for 'like' because it is the verb. 'When translating from French to English, the machine can compare these properties and generate translated version,' she says.

1. Machine gets the meaning of a word by comparing it with other words.
2. All the vectors made by Transformer architecture are the same.
3. When translating, the Transformer architecture uses the

In 2024, the Canadian Supreme Court Trial: Machine-Translated Rulings in August, a pilot project, was conducted by the Office of the Registrar of the Supreme Court of Canada. The results were disappointing with numerous inaccuracies and unusual phrasing. 'This can cause far-reaching consequences because the stakes in legal documents are exceptionally high,' says she. When translating from French to English, machine tools did not only mistranslated terms but proper nouns and company or brand names.

1. When translating, tools did not translated words used in legal texts correctly.

Reliance on AI translation tools has led to financial loss for companies. Pronto Translations, a language service provider based in New York has admitted using AI, which led to critical errors. 'Due to the mechanism of AI translation tools, they find it particularly challenging to choose the meaning of a word,' she says. A case in point is an industrial terms 'nuts', which describe an auto part is translated as edible nuts.

1. In Pronto Translations, the word 'nuts' was translated correctly as a part in a car.