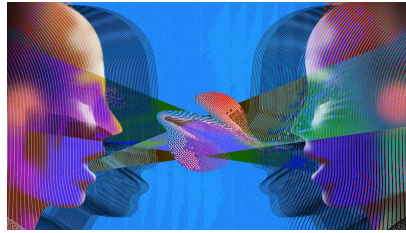# Machine translation is almost a solved problem

But interpreting meanings, rather than just words and sentences, will be a daunting task

Vasco Pedro had always believed that, despite the rise of artificial intelligence (AI), getting machines to translate languages as well as professional translators do would always need a human in the loop. Then he saw the results of a competition run by his Lisbon-based startup, Unbabel, pitting its latest AI model against the company's human translators. "I was like…no, we're done," he says. "Humans are done in translation." Mr Pedro estimates that human labour currently accounts for around 95% of the global translation industry. In the next three years, he reckons, human involvement will drop to near zero.

It is hardly a surprise that the AI model-makers are bullish, but the optimism feels apt. Machine translation has become so reliable and ubiquitous so fast that many users no longer see it. The first computerised translations were attempted more than 70 years ago, when an IBM computer was programmed with a vocabulary of 250 words of English and Russian and six grammatical rules. That "rules-based" approach was superseded in the 1990s by a "statistical" approach, based on crunching large datasets, which was still the state of the art when Google Translate was launched in 2006. The field exploded in 2016, though, when Google switched to a "neural" engine —the forebear of today's large language models (LLMs). Influence flowed both ways: when LLMs became better, so too did machine translation.

In Unbabel's test, human and machine translators were asked to translate everything from casual text messages to dense legal contracts and the archaic English of an old translation of "Meditations" by Marcus Aurelius. Unbabel's AI model held its own. Measured by Multidimensional Quality Metrics, a framework that tracks translation quality, humans were better than machines if they were fluent in both languages and also experts in the material being translated (for instance, specialist legal translators dealing with contracts). But the lead was small, says Mr Pedro, who added that it would be hard to see how, two or three years from now, machines would not overtake humans entirely.

Marco Trombetti, boss of Translated, based in Rome, has created a different measure for the quality of machine translations, called Time to Edit (TTE). This is the amount of time it takes a human translator to check a transcript produced by a machine. The more errors in the transcript, the slower the human has to go. Between 2017 and 2022 TTE dropped from three seconds per word to two across the ten most-translated languages. Mr Trombetti predicts it will fall to one second in the next two years. At that point, a human is adding little to the process for most tasks other than what Madeleine Clare Elish, head of responsible AI at Google Cloud, calls a "moral crumple zone": a face to take the blame when things go wrong, but with no reasonable expectation of improving outcomes.

(475 words)
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