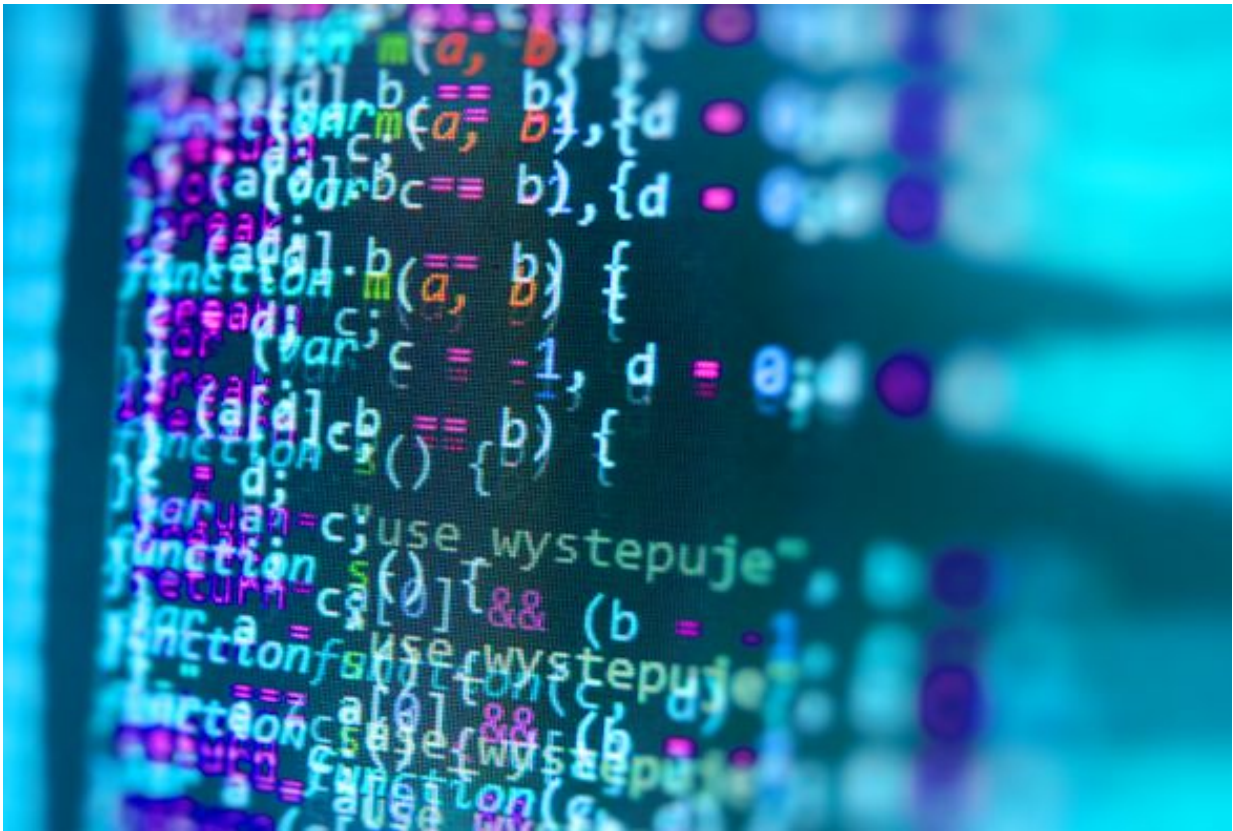# Teaching computers to understand human languages

May 6 2016

Researchers at the University of Liverpool have developed a set of algorithms that will help teach computers to process and understand human languages.

Whilst mastering [natural language](#) is easy for humans, it is something that computers have not yet been able to achieve. Humans understand language through a variety of ways for example this might be through looking up it in a dictionary, or by associating it with words in the same sentence in a meaningful way.

The algorithms will enable a [computer](#) to act in much the same way as a human would when encountered with an unknown word. When the computer encounters a word it doesn't recognise or understand, the algorithms mean it will look up the word in a dictionary (such as the WordNet), and tries to guess what other words should appear with this unknown word in the text.

Semantic representation

It gives the computer a semantic representation for a word that is both consistent with the dictionary as well as with the context in which it appears in the text. In order to know whether the algorithm has provided the computer with an accurate representation of a word it compares similarity scores produced using the word representations learnt by the computer algorithm against human rated similarities.

Liverpool computer scientist, Dr Danushka Bollegala, said: "Learning accurate word representations is the first step towards teaching languages to computers."

"If we can represent the meaning for a word in a way a computer could understand, then the computer will be able to read texts on behalf of humans and perform potentially useful tasks such as translating a text written in a foreign language, summarising a lengthy article, or find similar other documents from the Internet.

"We are excitingly waiting to see the immense possibilities that will be

brought about when such accurate semantic representations are used in various language processing tasks by the computers."

Provided by University of Liverpool