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LANGUAGE CHIP

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Abstract

This paper analyzes investigations of an innovative solution for learning the language. The goal of this paper is to characterise the functions of the electronic chip.

Keywords: Language chip, translator,foreign languages.

Introduction

Many people say that learningforeign languages is hard, but our technologies don’t stay still. The British scientist, who working at Google said that in future humanity will no longer needs to learn many languages or hire a translator to understand each other.

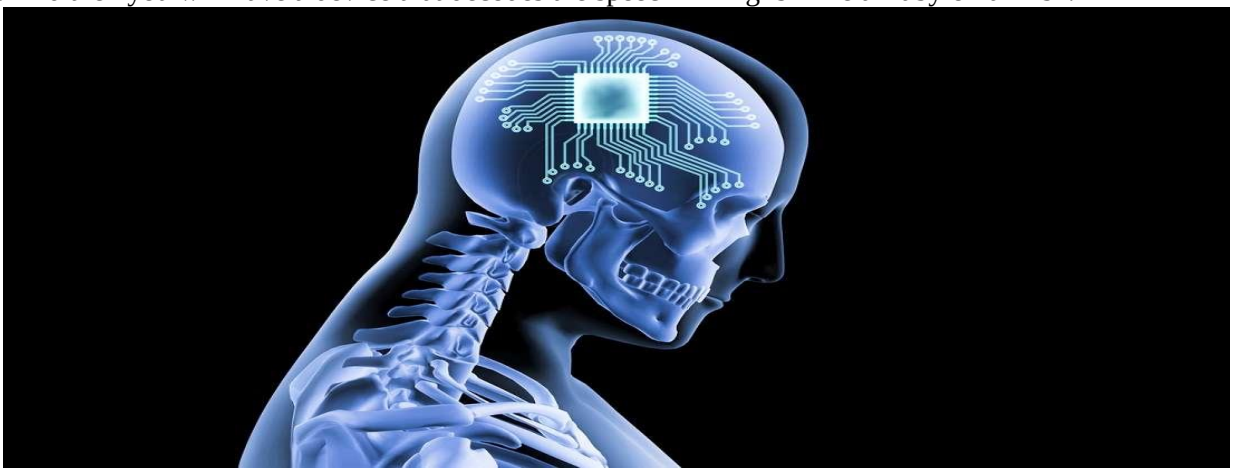
Research results

In the next few years, developers will be able to create a chip with self-learning software that will be mounted in the ear of the owner and simultaneously translate speech in foreign languages. About this January 29, said specialist in artificial neural networks Geoffrey Hinton, the researcher spoke about the progress in the use of neural networks to translate human speech from one language to another.

According to Jeffrey Hinton, now this technology is still far from ideal, however, it is already beginning to be increasingly used in the linguistic products of such large companies as Microsoft and Google.

As they said, in five years, the program which is training in this way can be technically placed on a small-sized chip, embedded, for example, in the human ear.

It will be like a called Babel fish. Getting into the ear of his “master”, the fish helped to understand the speech in languages he did not know.After a few years we will build it into a chip small enough to fit in the ear. And then you will have a device that decodes the speech in English like a Babylonian fish.



Geoff Hinton explained it in his talk for a translation from English to French.You start with recurrent neural networks, which excel at text analysis and natural language processing. Recurrent neural networks have been responsible for some of the significant improvements in language understanding, including the machine translation that powers Microsoft's Skype Translate and Google's word2vec libraries.

Essentially, for each language you have multiple recurrent neural networks that will take your English sentence and parse it word by word. It will then take the entire sentence and move that over to the French recurrent neural network for decoding. There, it will take the concept represented by the sentence and start with the first word to be translated. Once it has translated that, it will match that word against both the statistically probability of the likeliest word that would follow that first word and also against a distribution of the likeliest translation of the second word to come up with a match.

It continues to do this until you get a translation. Hinton explained that the neural networks are trained using random words, and after training the recurrent neural networks for one man-year, which equated to a few students working for about three months, the Hinton recurrent neural network translator matched state-of-the-art databases.

Conclusion

Hinton added that the more languages one adds, the better it makes the neural network, because it helps the computer narrow the probabilities it has to look at. Hinton concluded, "In few years time we will put it on a chip that fits into someone's ear and have an English-decoding chip that's just like a real Babel fish."

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