

Re: How do the brain neurons compute?

# Re: How do the brain neurons compute?

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*Source:* <http://sci.tech-archive.net/Archive/sci.physics/2007-11/msg00296.html>

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- *From:* [srp@xxxxxxxxxxxxx](mailto:srp@xxxxxxxxxxxxx)
  - *Date:* Sun, 04 Nov 2007 12:56:51 -0800
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On 4 nov, 11:52, "Androcles" <[Engin...@xxxxxxxxxxxxx](mailto:Engin...@xxxxxxxxxxxxx)> wrote:

<[s...@xxxxxxxxxxxxx](mailto:s...@xxxxxxxxxxxxx)> wrote in message

[news:1194191166.262878.56440@xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx](mailto:news:1194191166.262878.56440@xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx)

On 4 nov, 09:24, "Androcles" <[Engin...@xxxxxxxxxxxxx](mailto:Engin...@xxxxxxxxxxxxx)> wrote:

<[s...@xxxxxxxxxxxxx](mailto:s...@xxxxxxxxxxxxx)> wrote in message

[news:1194183884.401753.9650@xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx](mailto:news:1194183884.401753.9650@xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx)

On 3 nov, 18:00, Tenifer <[tensorsur...@xxxxxxxxx](mailto:tensorsur...@xxxxxxxxx)> wrote:

On Nov 4, 2:48 am, [s...@xxxxxxxxxxxxx](mailto:s...@xxxxxxxxxxxxx) wrote:

On 1 nov, 18:57, Tenifer  
<[tensorsur...@xxxxxxxxx](mailto:tensorsur...@xxxxxxxxx)> wrote:

What kind of algorithm do  
our brain neurons use? How  
do they compute  
to make us aware and  
produce our mind?

Neurologists chose their  
profession because they are  
poor in math.

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Therefore only physicists  
excelling in mathematical  
algorithm can  
figure out how the brain  
compute.

Anyone got an theory or  
mathematical idea how the  
brain neurons  
compute (or what kind of  
algorithm it use)?

You should look up the work of Hebb in the  
1940's. He completely  
solved how neural networks correlate data.  
No algorithm required  
except for simulating neural nets on linear  
computers.

The seat of awareness has long been  
established as being the  
néocortex (a 6-layer neural network). You  
would have to dig into  
neurophysiology archive to learn about this.  
Starting with  
Pavlov, many others explored the various  
aspects. Look up  
Eccles for references to most of them.  
Chauchard in the  
1940's 1950's finished the job.

You could get hold of "On Intelligenece" by  
Jeff Hawkins. He  
rediscovered much of this and is good at  
explaining.

A pity that most in the pertaining disciplines  
don't even  
know that all of this has been understood

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long ago.

No integrated refs in lectures for the past half century ensured that these discoveries remained sleeping in dusty archives.

André Michaud

So it is theoretically possible to build a self-aware computer or android.

This also has been explored, and no. It will never be possible because self-awareness requires life (sentience) to be involved from the getgo so the network can chose by itself what is good and what is bad for it.

Training real artificial neural nets with more than 1 layer to do anything useful is extremely difficult since they can't be programmed. On top of being technically difficult to build, they have to be trained and guided for hours to be conditioned into giving the correct answer or providing the correct reaction for each set of input data.

I wonder when will we have these silicon sentient beings joining with us in the planet. Do you know of folks seriously building this now?

Some have tried and wasted their time. Can't be done.

André Michaud

## Re: How do the brain neurons compute?

It is theoretically possible to build a self-aware computer, proven by "I think, therefore I am" --- Rene DesCartes.

Old Rene was sentient to start with before he could work through the maze and get to that conclusion.

I for one won't be on alert in case one taps me on the shoulder from behind as he utters "See ! Here I am. You were wrong."

André Michaud

Nature has succeeded where man (a self-aware computer) has (so far) failed. But man has only just begun trying, it took Nature billions of years of trial and error. The issue isn't whether man will succeed or not, but whether it is possible to succeed. And it is. "Can't be done" applies to da Vinci's helicopter, which cannot fly as designed. The underlying principle behind it does fly, though.

In this case, "Can't be done" isn't based on any belief but on the sum of consistent research done in the field.

You can build as complex an artificial neural net as you want, it just won't have self awareness from the get go.

Self awareness is required to start with for any choice to be made consistent with self survival. Artificial networks have no preference. Unless extensively trained into a specific direction for each possible choice they are likely to have to make, they will just as readily chose to turnoff their own power than to replace their battery.

They don't even don't care. They are inert.

I for one WILL be on alert in case one taps me on the shoulder from behind as it utters "See ! Here I am. You were right, André is asleep."

In your dreams, if you want my opinion.

Never underestimate the power of the human mind, André. If I replaced a single neuron in my brain with an electronic circuit that is FUNCTIONALLY identical and interfaces with the rest (even if not physically identical), then I would

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be unaware of the change.

Agreement. But you do have self awareness to start with.

Extend that concept to all my neurons and I can become eternal. And a god.

.... Until the part that sustains your self awareness dies of old age. then your eternal artificial neural net will stop doing rational choices consistant with continued existance.

André Michaud

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