

Re: Finding useful functions– part 1

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From: Stargazer (*fuckoff_at_spammers.com*)

Date: 10/29/04

Date: Fri, 29 Oct 2004 10:49:48 -0300

Wolf Kirchmeir wrote:

> *Stargazer wrote:*

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> >

> > > *Stargazer wrote:*

> [*snip a number oif clear answers to my questions – thanks. I think.*

> *:–)]*

> > **SG**

>

> *Your answers clear up some misconceptions on my part, but they also*

> *show terminological obfuscation on the part of artificial neural*

> *network researchers.*

>

> *Throughout your explanation, the term "signal" is used ambiguously. It*

> *sometimes seems to apply to an input to a single neuron, and sometimes*

> *to a collection of inputs to a network of neurons. IMO this is*

> *confusing. Very. It's a hierarchy error, which always cause trouble.*

I agree that it is confusing. But it is not a hierarchy error, it reflects the common understanding by a group of researchers. Such peculiar meaning of words is also commonplace in many specialized fields. Inside these fields such expressions makes sense (because all of the people in that area use the linguistic expressions to mean the same thing). For anyone outside that field, it often appears as an incoherent lump of ideas (well, sometimes it IS an incoherent lump of ideas; some french post–modernist texts come to mind).

> *Also, calling the calculated output of a NN a "training signal"*

> *because it's compared to the desired outcome is confusing, at least*

> *to me, for whom a "training signal" is a "signal that trains", ie, an*

> *input to the NN. And the use of "signal" for both inputs and outputs*

> *is confusing, since IMO an output is a signal to the experimenter,*

> *not the NN.*

>

> *All in all, my immediate impression is that workers in artificial NNs*

> *don't have a clear conception of what they are trying to do. Not that*

> *that is a bad thing – after all, it's early days yet, and one of the*

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- > *functions of research is to clarify the questions one is trying to*
- > *answer. My comments as a pure outsider may or may not help clarify*
- > *vagueness. Either way, thinking about your explanations has been*
- > *interesting.*

The thing worsens a lot when some discipline uses the same word to mean different things than other fields. The word "learning", for instance, mean different things for neuroscientists, behaviorists, computational learning theorists, machine learning specialists, cognitive psychologists, neural researchers, AI scientists, psychophysics psychologists, etc. In this forum (in the few days I'm peeking) I've seen quite a lot of disagreements whose root stems on different ways of defining some words. Most of these definitions can be said to be tenable, but only inside that specific discipline. It is often a conceptual failure (besides being unproductive) to criticize one field using the understandings of a different field.

SG