

Unbounded Space

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From: Eray Ozkural exa (*examachine_at_gmail.com*)

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"Stephen Harris" <cyberguard1048-usenet@yahoo.com> wrote in message news:<NMHrd.53144\$QJ3.28130@newssvr21.news.prodigy.com>...

> <gds@best.cut.here.com> wrote in message

> news:Bqyrd.28629\$NC6.6974@newsread1.mlpsca01.us.to.verio.net...

> > I haven't read all of the articles in this and related threads, but so

> > far none that I have seen have commented on the difficulty TMs have in

> > modeling "ongoing computation," such as what is found in operating

> > systems. (The Wikipedia article mentioned above has a short

> > discussion of this.)

>

> This issue is strictly one of knowing the definition. Turing said the TM
> can compute Pi which is infinitely long, one finite digit at a time. All the
> physical memory in the universe, if every subatomic particle could be
> used, is not sufficient to accomplish the storage Turing's tape can do.

What is this naive argument supposed to show? What does the actual size of the universe has to do with the fact that the tape is unbounded? (And we are not even certain that the space in our universe is finite!) A TM can compute Pi in no finite universe. That's not specific to our universe. But the ID of a TM is always finite. It never becomes infinite.

It's apparent that you don't understand what unbounded means.

Here, I will make a rigorous definition. And you can object if you will, but do try to come up with a valid argument. I am generalizing from the tape to include other components of the machine.

Unbounded Space: The ID of a TM is always finite length. However, there is no upper bound to the description length. Therefore, we say that the Turing Machine has unbounded space.

I don't think you understand what computable real means, either. It just means that, as you said, you can calculate one digit at a time. It does not mean that you can actually output an infinite supply of digits! That would *never* happen, even in an infinite size universe, simply because at any time T, the computer would have output only a

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finite number of digits! Do you now understand the distinction between unbounded and infinite?

Do you understand what it means to exist?

I sincerely hope you can make an improvement after 3 years! But alas, you seem to be another naive Platonist like Chapman... :(

Regards,

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Eray Ozkural