From:	Shainline, Jeff (Fed)
To:	Buckley, Sonia M. (Fed)
Cc:	Dienstfrey, Andrew M. (Fed); Liu, Yi-Kai (Fed); McCaughan, Adam N. (Fed)
Subject:	RE: SERI proposal
Date:	Thursday, February 21, 2019 1:25:55 PM

Along the lines of what Sonia said, I was thinking of another blurb about why NIST. I'm sure you don't have room for all this, but in case you find a kernel in here...

-begin blurb-

The principles of neural information processing have been investigated for decades, and activity is presently as vigorous as ever. We do not expect to answer all questions within the duration of this funding, but there are several reasons why a modest investment from NIST can achieve outsized gains. First, the close interactions between mathematicians and physical measurement scientists at NIST is unique and leads to rapid feedback and iteration. Second, we can ask foundational questions, like an academic institution, yet we have the means to manufacture advanced measurement technologies without the distraction of a timeline for commercialization. Third, the combined expertise of our groups from ITL and PML spans fundamental information theory as well as the capacity to measure information at the single-quantum level. It is urgent that we ramp up this collaboration.

-end blurb-

Thanks again, Jeff

-----Original Message-----From: Buckley, Sonia M. (Fed) Sent: Thursday, February 21, 2019 8:35 AM To: Shainline, Jeff (Fed) <jeffrey.shainline@nist.gov> Cc: Dienstfrey, Andrew M. (Fed) <andrew.dienstfrey@nist.gov>; Buckley, Sonia M. (Fed) <sonia.buckley@nist.gov>; Liu, Yi-Kai (Fed) <yi-kai.liu@nist.gov>; McCaughan, Adam N. (Fed) <adam.mccaughan@nist.gov> Subject: Re: SERI proposal

Thanks Andrew. What happens after the submission of the one page document?

My one comment is that the one thing that is missing is a motivational sentence for why an approach that includes both hardware and theory is important. Something to the effect of "State-of-the-art implementations of SNNs are limited by computational power (in simulation) or the physical limitations of CMOS (in hardware). The existence of a hardware platform that allows high connectivity, along with complex processing units, will both provide both an incentive for spike-based algorithms, as well as, ultimately, a test bed for their deployment".

I also forwarded the document to Rich and Sae Woo (and Jeff also has talked to them about it).

Sonia

> On Feb 20, 2019, at 5:29 PM, Shainline, Jeff (Fed) <jeffrey.shainline@nist.gov> wrote:

>

> Thanks, Andrew. I think the document looks good. I made a few small comments in the attached.

>

>

<sup>&</sup>gt;-----Original Message-----

<sup>&</sup>gt; From: Andrew Dienstfrey <andrew.dienstfrey@nist.gov>

<sup>&</sup>gt; Sent: Wednesday, February 20, 2019 4:38 PM

<sup>&</sup>gt; To: Buckley, Sonia M. (Fed) <sonia.buckley@nist.gov>; Liu, Yi-Kai

>(Fed) <yi-kai.liu@nist.gov>; McCaughan, Adam N. (Fed)

<adam.mccaughan@nist.gov>; Shainline, Jeff (Fed)

> <jeffrey.shainline@nist.gov>

> Subject: SERI proposal

>

>Hi all,

>

> Attached is a first draft of the SERI proposal. Suggestions/edits are welcome. Feel free to share this with your management.

>

> Final version is due to ITL on Monday 2/25 by 12 ET.

>

> --Andrew

>

> Adam, Congratulations!!!

>

> Yi-Kai and Adam, this "opportunity" fell out of the sky yesterday in

> the form of a phone call. The short story is that Jim Oltoff has

> reserve

> (SERI) funds and he is requesting two proposals from each OU. Given the quick turn-around, ITL decided to develop exactly two and run with them.

> Our SNN work proposed in last year's IMS is one. I don't know the other.

> I have not been instructed on how to treat the process but my sense is that it should be kept relatively quiet. This is basically all I know but I am happy to talk more by phone if interested.

>

> > --

> Andrew Dienstfrey

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