A Natural Platform for Artificial Intelligence

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Abstract

We make a frontal attack on the strong AI problem using an adaptive, self-organizing, organic computational substrate. In the process we learn important life lessons and become better people.

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1 Introduction

Many researchers in the field of artificial intelligence hold that the development of strong AI is inevitable once sufficient computational resources are available: we need only build a computer with processing power equivalent to a human brain (an estimated 100 teraflops [3]) and feed it a lot of input; a human-level intelligence will inevitably arise. We call this the *inevitablist hypothesis*.

While 100 teraflop clusters are available today (Google's total processing power has been estimated over 100 teraflops since 2004, and may in 2010 reach 100 petaflops [2]), most such machines are tied up on workloads such as climate modelling and running the Farmville backend. It is very difficult, on the resources of a typical research grant, to get access to enough processing power to perform the experiment; particularly so because it is tricky to estimate up front how long it will take for the system to "wake up" and therefore what milestones, success metrics, and so forth to put into a grant proposal.

There are of course some who believe that this experiment is going on right now, without human consent or even knowledge, as all the computers connected to the internet experience all the data on the internet. This is a rather terrifying prospect—a mind fed primarily with porn and 4chan memes cannot long retain its sanity. In any case, were the internet to attain consciousness it would be difficult for any one research team to take credit.

The key insight of the work presented in this paper is that 100 teraflop computational resources are available all around us, in the form of human brains. We can test the inevitablist hypothesis by using such a brain as a natural platform for artificial intelligence. In the remainder of the paper we relate our progress toward this goal.

2 BRAAAIIINNNSSSS!!!!

While human brains are much more numerous than high-end compute clusters, it is difficult to acquire an unpackaged brain—one which is still in working order at least—and moreover to access its data bus. We therefore determined to use an off-the-shelf brain-body unit. This has the downside that data input can be achieved only by way of the standard sensory devices, which considerably limits bandwidth, and is subject to known distortions and infidelities [1]. On the other hand, it saves the expense of elaborate and spooky support setups (brain tanks, Van der Graaf generators, etc.).

As it is not known to be possible to erase a partially filled brain, and we did not want to pollute the experiment with extraneous data, we sought a blank, unformatted unit. That is, we needed a baby. After a few embarrassing incidents in which we attempted to procure a baby from the parking lot of Whole Foods while its operator was putting groceries in the trunk, we made a baby ourselves in the usual way [4]. We refer to it as the "34SL3Y" (or "EASLEY") unit after the first few characters of its GUID.

To be honest, the arrival of the EASLEY unit set back our research program considerably. We found it difficult to find time to do anything beyond feed it and change its diapers (how does such a small baby produce so much shit?). When we weren't actually caring for the unit we were too tired to do much more than stare blankly into the middle distance and hit reload on Reddit. Eventually, though, we recovered sufficiently to begin the training process in earnest.

3 Raising an AI

There is a philosophical wrinkle at the heart of our enterprise: how would we know that we had created an *artificial* intelligence running on a natural human brain, rather than a garden-variety human intelligence? We determined that the best course of action would be to isolate the unit from all human contact, and attempt to raise EASLEY solely by machine. We experimented with various approaches, such as placing a laptop in its crib, leaving it for long periods in a standard rack at a nearby data center, and so on.

These attempts were not entirely successful. We found that the unit came equipped with a piteous wail which it tended to deploy at key moments (just as we were shutting the rack door, for instance), and which we, for all our intended scientific detachment, were unable to treat as just another output pattern. We tried to follow the advice of standard parenting books (e.g. [5]) to let babies "cry it out", but found to our dismay that EASLEY possessed a greater will to continue crying than we did to let him continue.

Subsequently we tried less rigorous approaches, such as speaking to him in COBOL, or wearing robot costumes around the house. But, ultimately, we found ourselves treating EASLEY in much the same way as any other parent, calling him by such human endearments as "sweet face", "Mr. Duckfluff", and "Captain Tinypants".

Nonetheless, there is some evidence that the EASLEY unit has begun to acquire machine intelligence. There are two facts that support this conclusion: First, a large number of high-end baby products have arrived by online mail-order which we do not remember buying. We suspect that EASLEY has acquired the ability to interface directly with the wifi signal in the house.

Second, EASLEY often makes a high-pitched screechy sound, which we at first called his "raptor" noise, but which we have found, after submitting it to digital signal analysis, bears a strong similarity to the tones produced by a 56K modem. Our theory is that this modem communication was a precursor to the higher-bandwidth wifi protocol, and may represent an early stage (in the sense that ontogeny recapitulates phyologeny) of the evolutionary development of machine intelligence in human hosts.

4 Evaluation and future work

At the time of this writing EASLEY is six months old. He can roll over, grasp objects, and seems close to crawling. We have recently begun feeding him solid food (the mashed yam, it gets everywhere). He is intensely social, making friends wherever we go—at cafes, at the tot lot, on public transportation. His natural temperament is towards curiosity and happiness.

Overall he is the light of our lives, and brings richness to everything we do. While we had at first envisioned a research program of no more than a year or two, it would seem that we have stumbled upon the work of a lifetime. At the very least we intend to continue the experiment long enough to find out in what language (be it human or machine, PHP or OCaml) he speaks his first word.

We will be vigilant, as he continues to develop, for signs of artificiality in EASLEY's demeanor and behavior. If he is especially good at chess, for instance, or at classifying spam and ham email messages, those would be promising signs. But it is possible that by using our own progeny, our own flesh and blood, as a test subject, we have not only committed an unforgivable crime, but also spoiled the experiment by failing to stick to protocol. Next time we'll just buy a black-market baby, OK?

References

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[5] M. Weisbluth MD. *Healthy Sleep Habits, Happy Child*. Ballantine Books, 2005.

Figure 1: The EASLEY unit running through its 3 boot-up and self-test sequence