



Epsilon Theory

THE NARRATIVE

DOWN THE RABBIT HOLE | BY BEN HUNT

Complex Systems, Multiscale Information and Strange Loops

Complex systems

Neat and accessible [primer](#) on complex systems, multiscale information theory and universality by Yaneer Bar-Yan, and a related [paper](#) on the conceptual applications of the same topic: *From Big Data To Important Information* (suggest start reading from section VII if you read the primer, and from sub-section D on page 13 if you just want the markets application).

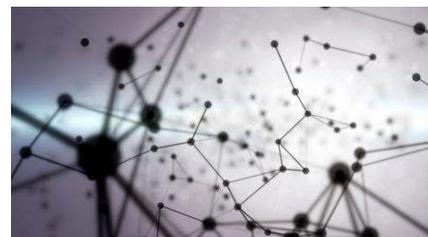
Machine learning software creates machine learning software



Lots of buzz about Google's AutoML announcement at the Google Annual developer conference I/O 2017 last week. AutoML is machine learning software which takes over some of the work of creating machine learning software and, in some cases, came up with designs that rivals or beats the best work of human machine learning experts. MIT Technology Review [article](#) on AutoML.

One-shot imitation

Also lots of [buzz](#) around one-shot imitation using two neural nets, as demonstrated by OpenAI. Personally, one-shot imitation is the one AI-type concept which gives me *the fear*. But if Elon's supporting it then it must be OK... right? One-shot imitation paper [here](#) but, more to the point, watch this [video](#) and tell me you are not at least a little bit afraid.



The power of the platform



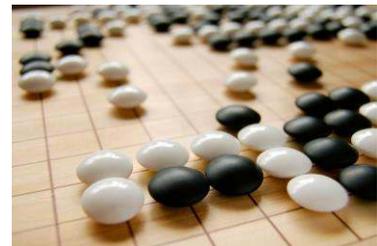
And to the practical applications of technology, I really like the language of this recent [press release](#) by Two Sigma CEO, Nobel Gulati, and particularly the paragraph:

Moving forward, durable advantages will to accrue to those building a substantial platform based on massive amounts of data, along with the technology and institutional expertise to use it. Building such a platform requires significant and ongoing investment in R&D, and a fundamentally different culture and mindset to apply a scientific approach to the data-rich world of today.

Personally, I believe that the 2020s will be more defined by big compute than big data but this is, nonetheless, a powerful statement and language, and there's a key implicit point buried in here on the cultural balance of 'researchers' (math and physics natural geni) and 'production engineers' (coders who, by nurture, have seen and solved many practical problems). Specifically, how the majority of quant funds have to-date been culturally focused too heavily on the math genius research folks to the detriment of hiring and rewarding the more workmanlike practical folks who can build and maintain a substantial platform which, I agree, is the new durable advantage.

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I was reminded last week by China's censorship of Google's [latest AlphaGo win](#) against Ke Jie just how substantial a stance it was when Google shut down its Mainland search engine in 2010 and why these kind of bold moves (bets) are essential to developing a truly winning technology company (and also why I don't live in China anymore!). As Rusty Guinn has written about: [A man must have code.](#)



Strange loops

Finally, to bring us back up to the level of self and consciousness, I finally got 'round to reading Douglas R. Hofstadter's 2007 [book](#) *I am a Strange Loop*. A long, winding and compelling book summarized by the quote "*In the end, we are self-perceiving, self-inventing, locked-in mirages that are little miracles of self-reference.*" If you dip in and only read one section, read the section on simmballs in Chapter 3, which loops us back to where we started this column on multiscale information.



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