DOWN THE RABBIT HOLE | BY NEVILLE CRAWLEY

Quantum Supremacy, Correlating Unemployment, and Buddhists with Attitude

Quantum supremacy

As Ben and I have discussed before on an *Epsilon Theory* **podcast**, my view is that quantum computing is going to be truly, truly transformational by 'redefining intractable', as **1Qbit** say, over the coming years. My conviction around quantum continues to grow and — to put a pretty big stake in the ground — I believe, at this point, the only open questions are: Which approach will dominate, and how long exactly until we get quantum machines which work on a broad set of real-world questions? I've long been a big fan of the applied, real-world progress **D-wave** have made, and **Rigetti** too. However, the 'majors' like **IBM** are also making substantial progress towards true 'quantum supremacy' with R&D intensive approaches, while other pieces of the ecosystem, such as the ability to '**certify quantum states**', continue to fall into place. In the meantime, **here** is a wonderful cartoon explainer on quantum computing by Scott Aaronson and Zach Weinersmith.
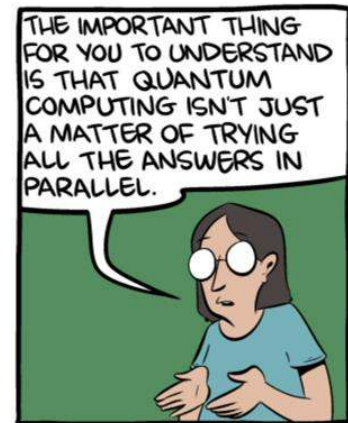
What web searches correlate to unemployment

Well, in order to get the answer to that question you will have to follow this **link** (and be prepared to blush). The findings were generated by **Seth Stephens-Davidowitz** using **Google Correlate**. *"Frequently, the value of Big Data is not its size; it's that it can offer you new kinds of information to study — information that had never previously been collected"*, says Stephens-Davidowitz.

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Using verbal and nonverbal behaviors to measure completeness, confidence and accuracy

I recently came across **Mitra Capital** in Boston who have an interesting strategy of *"using verbal indicators to judge the completeness and reliability of messages, to form predictions about company performance (via) analysis of management commentary from quarterly earnings calls and investor conferences based on a proprietary and proven framework with roots in the Central Intelligence Agency"* with the underlying tech/methodology based on **BIA**. They're running a relatively small fund ($53m AUM in Q1 2017) and have returned an average of 8.5% for the past four years (including a +43% year, and a -12.5% year). Neat NLP approach, although these returns imply more of a 'feature than a product' (i.e., a valuable sub-system addition to a larger system, rather than a stand-alone system.) But, hey, I said the same thing about Instagram.

Buddhists with attitude / Backtesting: Methodology with a fragility problem

Probably (hopefully!) anyone reading *Epsilon Theory* has already read **Antifragile** by Nassim Nicholas Taleb. Many things which could and have been said about this book, but the most important one to highlight for my narrow, domain application is the massively important distinction (although rarely talked about facet) of machine learning/big compute approaches vs. regression-driven back test approaches. Key distinction is a simple one: Does your system gain from exposure to randomness and stress (within bounds) and improve the longer it exists and the more events it is exposed to OR does it perform less well with stress, and decay with time. Antifragile machine learning systems are profoundly different to the fragile fitting of models.

And finally, since I have already invoked Taleb, and if for no other reason that the line *"If someone wonders who are the Stoics I'd say Buddhists with an attitude problem"*, **here** is Taleb's Commencement address to American University of Beirut last year.

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