LISTEDRESERVE
MoneyBits

Riemann

In April 2024 MoneyBits ran an article called “Never say never”. In it a computer scientist, Victor Taelin, proposed that there were certain problems that LLMs would never solve. He was wrong.

> *Two days ago, I confidently claimed that "GPTs will NEVER solve the A::B problem". I believed that: 1. GPTs can't truly learn new problems, outside of their training set, 2. GPTs can't perform long-term reasoning, no matter how simple it is. I argued both of these are necessary to invent new science; after all, some math problems take years to solve. If you can't beat a 15yo in any given intellectual task, you're not going to prove the Riemann Hypothesis.*

As an addendum, he invoked the point that if they can’t even do simple puzzles, then LLMs have zero chance of proving the holy grail of mathematics, the Riemann Hypothesis.

It would appear he was wrong about that too. A mathematician at Anthropic published his proof of Riemann on Friday. Thirty-one months later, from can’t do simple maths to the hardest problem of all, which has stood since 1859. That is the singularity in real time.

Once again it has kicked a hornet’s nest amongst mathematicians because his proof was enormous, when written in text it extended to 250,000 pages. Unreadable for a human. The proof he published was 17 million lines of code, that code has been independently verified as proving Riemann, but *nobody understands it* and so the cry from mathematicians is “if we don’t understand it, what’s the point”.

The full dummy spit from the Association for Human Mathematics can be found here.

> This announcement is a major departure from traditional methods in mathematical research, representing a new value system put forward by AI corporations that foregrounds technical validity of logical statements over accountability, clarity, accessibility, and understanding. At this time, no human being can reasonably claim to be responsible for, or even to understand, such a document. Neither can any mathematician confirm with full certainty that the proof is correct. Worse, this corporate model of proof production seems designed to excuse humans from responsibility for scientific work. Instead, this model asks scientists to entrust their research to machines that AI corporations control.

I continue to find their reactions fascinating. If I say to a ‘normal’ person that AI is probably more intelligent than they are, they would likely agree. From my perspective when we went from GPT 6 to 6.2 or Opus to Fable, I cannot really tell the difference. The machines are easily capable of doing what I ask, however hard I make it so I don’t notice the additional intelligence of the newer model. How could I? How could any of us?

Is it not the same as Einstein proving Relativity and then some person with no background in maths, physics or anything else saying his work is worth nothing because he can’t explain it to a lesser mortal?

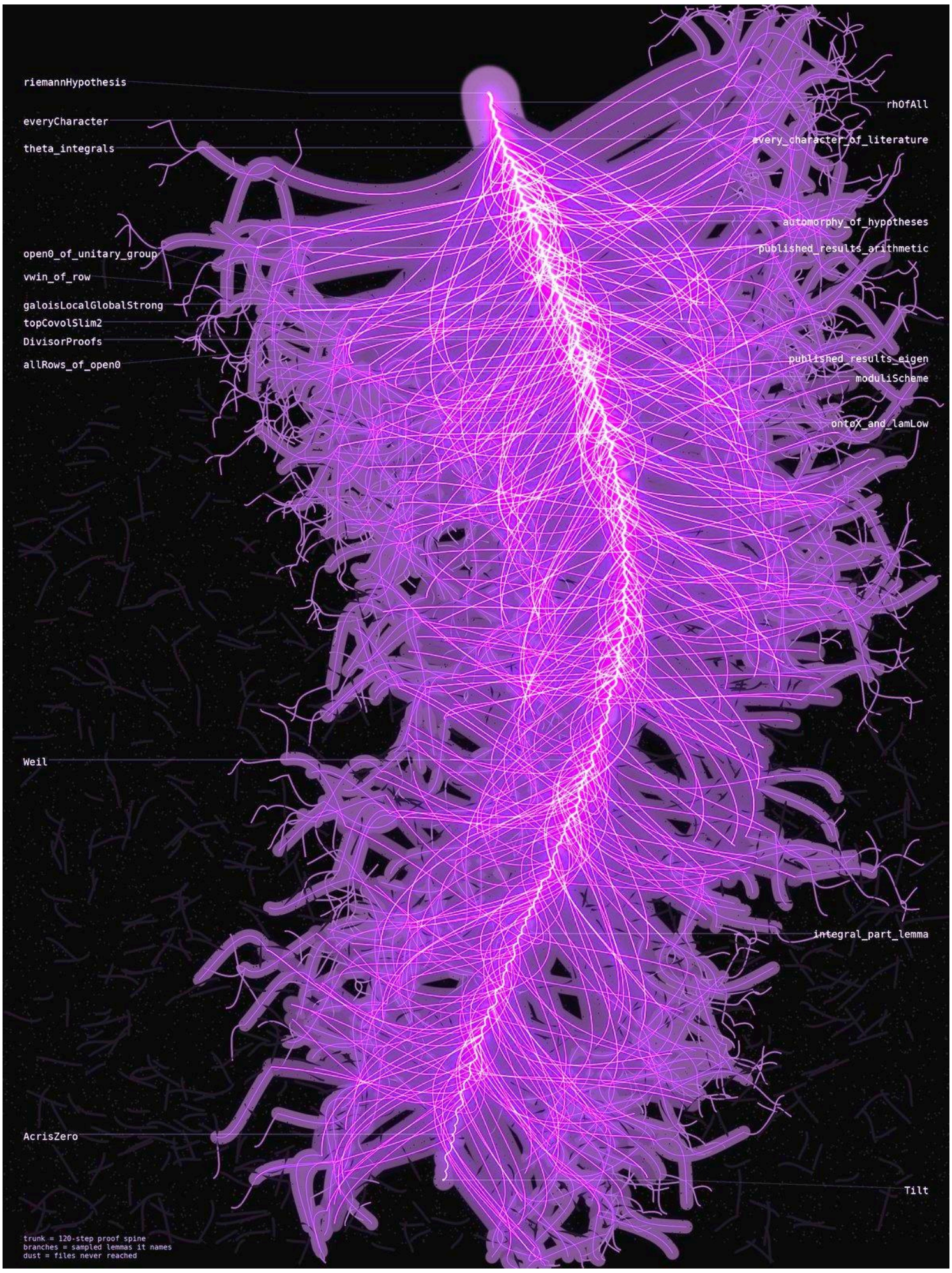
A lot of people are having a really hard time accepting the commoditisation of intelligence. It hasn’t even begun either, because it’s only resonating at the absolute highest echelon of intellect where their worlds are totally collapsing around them.

Don’t you miss the days when only 0.000001% of the world could make scientific contributions? Actually, no I don’t. It’s beyond exciting that people outside the usual cartel will be able to do it and I look forward to it with relish.

One final thing about the whole Riemann solution. It was Person + AI that did it. Person + AI > AI. I think we can all take great comfort in that.

A feather duster

This is the best representation of the Riemann achievement I have found. It’s a visual representation of the code used in the proof. Each tentacle in this diagram represents a previous result or branch of research. A human mathematician would spend five years on each tentacle (as in a PhD amount of time), and in some cases a whole lifetime. The LLM just went crunching through each tentacle, some are relevant and most are dead ends. As a result the “proof” is a brute force spaghetti of mathematics with the majority of the code proving nothing.

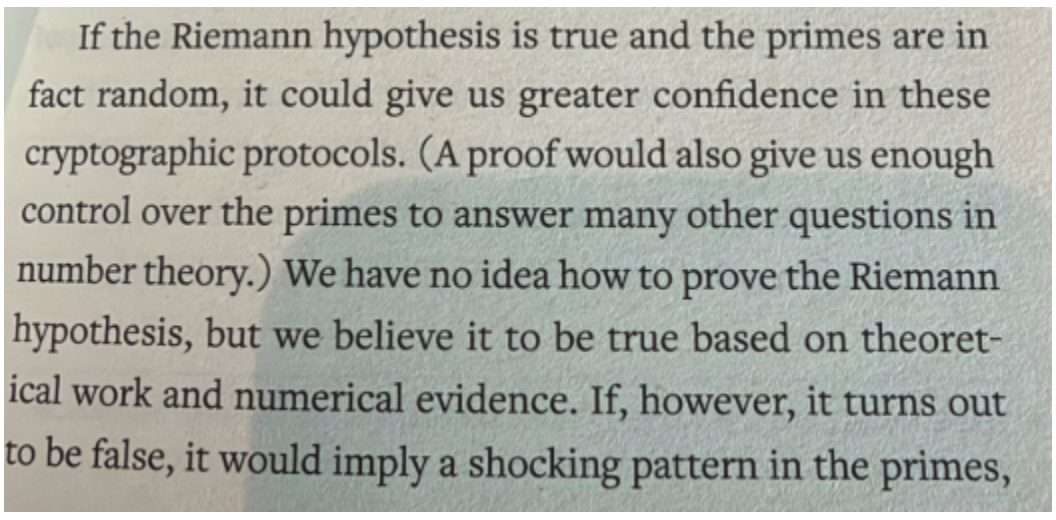


This is why mathematicians are angry. The diagram is the combined force of thousands of years of mathematics. I keep having a dig at them, but you can understand their point. Which, broadly, is that we now have a proof nobody understands or has a hope of understanding. So what's the point?

From the ordinary mortal's perspective though, I don't understand penicillin but I'm glad we have it.

Cryptography

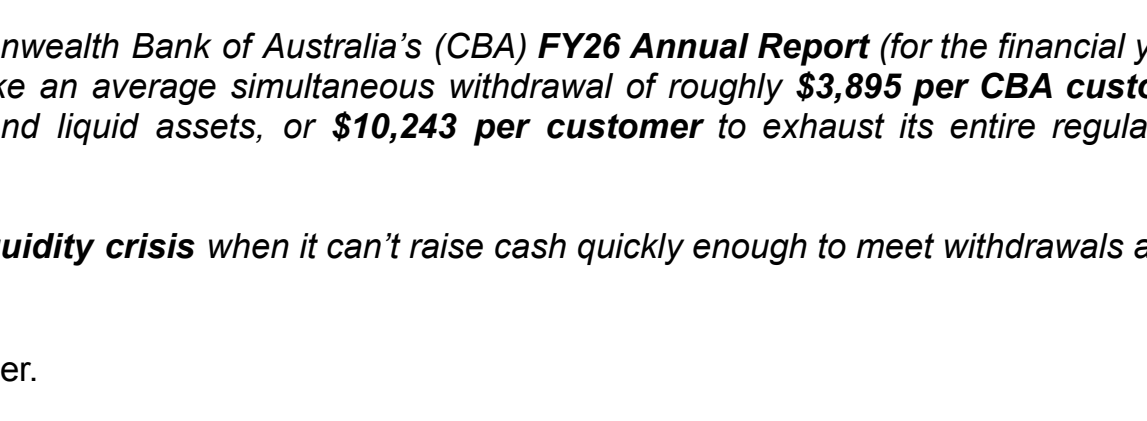
With Riemann "solved", we got the galloping rush to tell us that it threatens the strength of cryptography, which caused some price panic last Saturday. That is not the case at all. What we did not want to see was that Riemann was *disproved.* An extract from Terence Tao's book on this point below.



If the Riemann hypothesis is true and the primes are in fact random, it could give us greater confidence in these cryptographic protocols. (A proof would also give us enough control over the primes to answer many other questions in number theory.) We have no idea how to prove the Riemann hypothesis, but we believe it to be true based on theoretical work and numerical evidence. If, however, it turns out to be false, it would imply a shocking pattern in the primes,

I'm minded to suggest that there are quite a lot of people out there who don't know what they are talking about. Encouragingly, with the speed of AI advancement, that will shortly include absolutely all of us, so I'm less worried than I once was.

A single thread



Nikita Bier
@nikitabier

Follow

The entire global economy is being held by a single thread of people forgetting to cancel auto-renewing subscriptions and people being too lazy to move their cash to higher yielding money market accounts.

If every human ran a prompt for an agent to do it for them, the banking system would collapse and the world would explode.

I did this. I gave AI access to my emails and statements for three years, put them in a folder and said make a list of all the stuff I should be cancelling. Which it did. Then I started clicking, and it took me 15 minutes to save an embarrassing amount.

On cash, everyone (including me) is too lazy to have their money jumping between accounts every day to extract a few dollars more. Your AI agents will never tire of it though; they can do it now. The impact that Nikita is highlighting though is true. Banks are massively vulnerable to this sort of agentic action. It is simply not worth my time to make a few extra dollars if I have to spend 15 minutes every evening clicking buttons. But if you offer me that outcome for zero effort, of course I'll take it.

Once agents manage money, which they will soon, let's play out the thought experiment. Say CBA offers 3.4% overnight and Westpac at 16:55 that day says, we are offering 3.41%. The CBA, in theory, immediately collapses.

I asked AI how much it would take for the Commonwealth Bank's regulatory buffer to be reduced to zero.

Under the Commonwealth Bank of Australia's (CBA) ***FY26 Annual Report*** *(for the financial year ended 30 June 2026), it would take an average simultaneous withdrawal of roughly* ***$3,895 per CBA customer*** *to exhaust its immediate cash and liquid assets, or* ***$10,243 per customer*** *to exhaust its entire regulatory liquidity buffer (HQLA).*

A bank faces a ***liquidity crisis*** *when it can't raise cash quickly enough to meet withdrawals and other payments as they fall due.*

$3,895 per customer.

I have not checked those numbers. I just asked Gemini. GPT was similar.

September quarter liquidity measure	Group total	Per group customer
High-quality liquid assets, including cash and government securities	A$191.46bn	**A$10,300**
Modelled net cash outflows over 30 days of severe stress	A$145.50bn	A$7,800
Liquid assets above those modelled outflows	A$45.96bn	**A$2,470**

In practice, most people don't have multiple bank accounts. But once your AI opens them for you, well you will for zero effort. Every hurdle I can imagine that would prevent this kind of run, AI solves.

The main issue is that nearly every “asset” in modern finance is the liability of someone else. Cash is the bank’s liability, equities are the company’s liability, bonds are the government’s liability.

That’s why I keep going on about bearer assets. Some assets are volatile all the time, and other assets are volatile once. I get the feeling that Australian banking will fall into the latter category at some point. I’m not particularly wishing for it to happen either, just making the point that with each passing month something very unlikely gets more likely.

Get Carter



1971. Michael Caine stars as the gangster in “Get Carter”. Against advice, he leaves London and heads north to distribute some pain to criminal gangs across Newcastle. Ultimately, he gets shot by the gentleman that sat next to him on the train north. From the very beginning, they had him marked.

I was watching Chris Bowen at COP31 do something similar. An Australian who headed north to tell the rest of the world how it’s going to be. The Saudis, the Russians and most other nations that rely on oil. “It’s nice to meet you, I’m Chris, please decimate your economies to satisfy my climate ambitions”. One might be sympathetic to a Pacific Island nation doing so, but it must be hard to hear from an Australian.

Coal Exports by Country

Below are the 15 countries that exported the highest dollar value worth of coal during 2025.

Find Metal Stocks

1. Australia: US$43.7 billion (34.9% of total coal exports)
2. Indonesia: $24.5 billion (19.6%)
3. Russia: $18.5 billion (14.8%)
4. United States: $10 billion (8%)
5. Mongolia: $5.6 billion (4.4%)

Just like Carter, Bowen got completely bagged. From the off it unravelled, the gavel fiasco and ultimately the whole circus resulted in nothing. Absolutely nothing.

Refreshingly, it would appear the racketeering that runs Australian politics doesn’t work everywhere. Our politicians are a joke overseas, the Prime Minister’s faux pas went down like a bag of cold sick and plenty of European nations would have been willing Australia to fail after the whole AUKUS betrayal (as France sees it).

The point of Get Carter is simply, “Stay in your lane”. Chris Bowen should watch it.

Euro-Trash

Looking through the vacancies on the ECB website, there are currently 13. None of them are for the position of President though. It seems the sordid business of applying for jobs is just for the proles.

There was however some very helpful advice on expense reimbursement for candidates more generally.

> Please note that the vicinity of the central railway station (Hauptbahnhof) is considered the red-light district of Frankfurt.
>
> For further information concerning hotels or reservations, please contact the German Tourist Office in Frankfurt on +49 69 2123 0808. Alternatively, a list of hotels can be found on the following websites:

The full guidance on how to enjoy Frankfurt (including the special facilities around the railway station) is on the ECB website. Even more helpfully if you do book a hotel, the ECB even provides a discount code, ‘ECBHRcandidate’, which you should quote when booking.

You’re welcome.