

# The AI Bubble: Lessons from Past Financial Bubbles

<https://mindmatters.ai/podcast/ep325>

Robert J. Marks:

Greetings and welcome to Mind Matters News. I'm your bubble boy host, Robert J. Marks. I'm not an economist, but I've always found fascinating stories about bubbles in the market. Market bubbles are marked by cycles of incredible excessive speculation followed by dramatic collapses. One of the earliest recorded bubbles that everybody talks about in introductory courses is something which is totally beyond my comprehension, totally beyond my understanding, and it's called the Dutch Tulip Mania. And it happened in the 1630s were the prices for tulip bulbs just soared to extraordinary levels before they began to crash. And I read at least in one place that at the height of this bubble before it popped, a tulip could cost in today's money at like a million dollars. It was really ridiculous. So that was one of the earliest bubbles.

There's been others in the 18th century. The South Sea bubble in Britain promised lots of profit from trade ventures, but there was just over-exuberant, rampant speculation, and that led to catastrophic collapse, and that was another bubble that popped. Similarly, the 1929 stock market crash ended the roaring '20s with a sharp decline, and it triggered the Great Depression. Everybody was borrowing money to buy stock, and that just wasn't sustainable. More recently, the dot-com bubble of the late 1990s and early 2000s attracted investors to internet startups. I remember talking about this with people. Investors ignored the bottom lines of startups. They said that, "Well, this is the internet, the bottom line doesn't matter as much anymore." So the bubble ultimately popped loudly.

We're going to be talking more with our guest, Gary Smith, about the dot-com bubble and how it relates to the AI bubble in a little bit. Another bubble more recently is the 2008 housing market collapse that was fueled by subprime mortgages being bundled into a big bundle and then sold as something which was beyond what it was. The high-risk mortgages, they were bundled and they were hyped as great investment, but ultimately people found out the reality of it and the bubble popped and banks closed and there was all sorts of challenges with that.

Those that ride bubbles are always fooled into believing that this time it's going to be different. This time, all of this hype is going to be true, even though it's too good to be true. It's true, and I think that this is something that happens in bubbles. So we're fortunate to have with us as our guest today, a professor of economics who is no stranger to Mind Matters News. Gary Smith is the Fletcher Jones Professor of Economics at Pomona College. His research on financial markets, statistical reasoning, and artificial intelligence often involves stock market anomalies, statistical fallacies, and the misuse of data that has been widely cited.

And I tell you, I've learned a lot by reading the works of Gary. He's a frequent contributor to Mind Matters News. He is also the author of dozens of academic papers and 17 books. Most recently, a book that he co-authored with Margaret Smith, his wife. And the name of the book is The Power of Modern Value Investing Beyond Indexing, Algos, and Alpha. And historically, one of the books, not historically, a few years back, I was really impressed by his book The AI Delusion, and I visited him in California where I found he was a really smart guy. And since then we've been working together on Mind Matters News. Gary, welcome. Welcome to the podcast.

Gary Smith:

Oh, thanks for having me. Happy to be here.

Robert J. Marks:

Oh, you're very welcome. You wrote a great article for a platform called Market Watch.

Gary Smith:

Right.

Robert J. Marks:

And this really intrigued me. It was called The AI bubble is looking worse than the dot-com bubble. I talked briefly about the dot-com bubble, and then you said, here's why. So you obviously believe, and by the way, I do too, there's a generative AI bubble and you are not alone. And what are some of the characteristics of AI you see that are common to bubbles in the past?

Gary Smith:

Yeah, well, what drives bubbles? There's several things, and you alluded to a lot of them. One of them is the idea that value doesn't matter. Cash flow doesn't matter. You're buying something to sell to someone else, and it's called the Greater Fool Theory. So I pay a foolish price hoping to find an even bigger fool to sell it to. And then the other second thing that drives it is fear of being left out. And so I think it was JP Morgan said, nothing erodes financial common sense more than seeing your neighbor get rich. And so like the dot-com bubble, it's hard to believe it's been almost 30 years now, but wildly optimistic hype and gullible investors. And so back at the height of the dot-com bubble, March of 2000, I gave a talk at a conference on the 36K hypothesis, and it was the argument that the Dow Jones Industrial Average, which was at 12,000, with a PE ratio of about 30, should be three times higher, should be at 36K.

And I went to this conference and I gave a talk, I was the fourth speaker. The first speaker got up and talked about Moore's Law. The second person got up and talked about Alan Greenspan being a great Fed chair. Third person got up and talked about option value that the people who were starting dot-com companies, well, they didn't really have business plans, but they're really smart. And sooner or later they'd figure out something to do that was profitable. And I was the last speaker, and I got up and I said, being a value investor, I said, "This is a bubble and it will end badly." And I feel the same thing here, that you got this hype, these generalities, these vague statements about stuff without a lot of details and without any profits. So on October 29th, Elon Musk said, I certainly feel comfortable saying that it's getting, this is AI, generative AI, it's getting 10 times better every year. I think it'll be able to do anything that any human can do within the next year or two. How do you measure 10 times better every year?

Robert J. Marks:

Exactly, yes.

Gary Smith:

10 times better raising money for startups? It's just a vague hype. OpenAI, Sam Altman, I think it was like two weeks ago, he said, artificial general intelligence will be here next year, 2025. A year ago, October, 2023, Blaise Arcas and Peter Norvig wrote a piece titled Artificial General Intelligence is Already Here. I mean, this is just, it's absolute nonsense. And that's markers of a bubble is you go back to that dot-com bubble and people were talking not about profits, they were talking about how many hits you had, how many images showed up, how long people stayed on your webpages.

They're talking about all sorts of stuff that was just vague and had nothing at all to do with the profitability. And that's kind of the same thing here, is when you get down to the hard facts about how much money are you making from generative AI? This spending just dwarfs any profits that are coming from it. And so that's why I think it has all the hallmarks of a bubble, which is worse than the internet bubble because at least there you had companies that were making as some profits. And here they're very hard to find.

Robert J. Marks:

The hype reminds me of Ray Kurzweil's book, the Singularity is Near, that was written 20 years ago. And so last year he wrote the book, the Singularity is Nearer. In 20 years from now, he's going to write, the Singularity is Almost Here. That's what you have to do with hype. You keep having to expand the expectations. But anyway, that's-

Gary Smith:

Well, it started back in the 1950s when the term AI was coined at that Dartmouth conference. And Minsky and other people were saying that computers would be smarter than humans within five years. And then 10 years later, well within five years or within one year or within two years. And it just kept pushing the goalpost forward with these claims. And what's happened recently is you can't deny it, generative AI is just absolutely magical and interacting with it is just mind-blowing. But in terms of what can it actually do to make money, we're still trying to figure that out.

Robert J. Marks:

Yes, yes, exactly. This is something you mentioned, accessing generative AI is pretty inexpensive. In fact, I go on and I can put in ChatGPT and it takes me to a site where I have access to the public version of ChatGPT. So it's really inexpensive for me, but creating it is really costly. In fact, I think I read that Google was thinking about getting a nuclear reactor in order to generate the power that's needed to train these AIs. So this doesn't seem sustainable. What needs to change for generative AI to justify its current investments or is that even possible?

Gary Smith:

Yep. I don't know if it's possible, but there's a couple things going on here. One is that there are these enormous financial costs that you mentioned, and they're also enormous environmental costs and the electricity that's consumed by these models and the water that's consumed by these models is just absolutely mind-boggling. And in terms of the payoff, what can it come from? Well, it's got to be something that is useful and to be useful, somehow these models have to be able to have common sense, logical reasoning, stop hallucinating, but be able to make predictions that are actually useful. And the key roadblock there, which is nobody has figured out, is that these large language models are basically text generators based on statistical patterns, and they don't need to and they don't actually understand what any of the words mean that they're generating, either inputting or outputting. And as long as they don't understand what words mean, it's hard for me to see how they can make predictions that makes sense, that pass the test of critical reasoning. And as long as they can't do that, their predictions are not going to be reliable, trustworthy.

Robert J. Marks:

Along that same line, you argue that productive AI hasn't yet shown significant economic value or productivity gains. I've seen it applied in some interesting places. I went to court, I was in a courtroom

about a month ago, and I like to tell people, indicted but not convicted. No, no. I was there for another reason, it was a divorce proceeding. And the person that takes the notes, I don't know what they call them, it's not a court reporter, but the stenographer that makes the record and records all of the words said was somebody that was very interesting. I talked to her and she says, "Yeah, we're using AI." And I thought, "Well, that's interesting. What do you use it for?" She said, "Well, it clears up some of the ambiguities." The one that I thought of was, okay, I teach at a Christian university, and there's this old Christian hymn called Gladly the Cross I'd Bear. Now that clearly refers to Christianity, but Gladly the Cross I'd Bear can also refer to a bear who is cross-eyed named Gladly, okay, Gladly the Cross I'd Bear. So according to her, if something came out in the transcript and they transcript from the audio now, they use audio to text generation. And she said, yeah, I went to the zoo to see Gladly the cross-eyed bear, it would know which one to write down because of the context that they went to the zoo. So I thought that was an interesting application of AI, but clearly these courts stenographers are not going to be an incredible market for generative AI and to generate the money that's needed.

Gary Smith:

There was a case last year, maybe it was this year, it was a very recent case where some lawyer filed a brief with the court and the judge actually read the brief and he started looking up the references to other cases, and they were all fictitious. And so the judge got suspicious and confronted the lawyer, and the lawyer admitted that the brief had been written by ChatGPT, and it just made up the arguments and it made up references to cases that are non-existent.

Robert J. Marks:

Yes, but here's the thing, Gary, don't you think that can be fixed? Don't you think the people behind AI can fix some of these fallacies that are currently happening?

Gary Smith:

I don't.

Robert J. Marks:

You don't.

Gary Smith:

So let me explain that.

Robert J. Marks:

Okay.

Gary Smith:

So first a little more on the idea that generative AI, LLMs are going to be enormous and profitable economically. And so a couple quotations here, Bill Gates has said that, "LLMs are every bit as important as the PC, as the internet." Jensen Huang, who's the CEO of NVIDIA, "One of the greatest things that has ever been done for computing." Elon Mollick, a Wharton professor, "The productivity gains from LLMs might be larger than the gains from steam power." And one more is Chris Anderson, who's a TED organizer, and he listened to Google's Gemini and said, "I can't stop thinking about the implications of this demo. Surely, it's not crazy to think that sometime next year," which would be this year we're in this

year now, "A fledgling Gemini 2.0 could attend a board meeting, read the briefing docs, look at the slides, listen to everyone's words and make intelligent contributions to the issues debated?"

I can't stop thinking about that either, how scary it is to think that you would trust a large language model to make decisions for large corporations. The reason is I teach the stock market, and there's a big difference between possessing information and processing information. Possessing information is knowing things like earnings, dividends, prices, market trends, stuff like that data, and then processing information is making sense out of it, drawing logical, reasonable, useful conclusions. And so Warren Buffett's a great example. He didn't get rich by possessing information that other people didn't have. He got rich by processing information better than other people. And the AI hypesters don't agree with that. And so Blaise Arcas the head of Google's AI group in Seattle said, "Statistics amount understanding." And I think that's absolutely incorrect. Jeff Hinton, the godfather of AI, recent Nobel laureate-

Robert J. Marks:

The Nobel Prize winner, yeah.

Gary Smith:

I'm on a list with, I gave a up at the Googleplex a couple years ago, a conference called SciFoo, and I'm on the SciFoo list. And the physics people who were on that list were apoplectic about Hinton getting a Nobel Prize in physics.

Robert J. Marks:

Yes. In fact, I wrote an article about that for Mind Matters News where first of all, I said, how is neural networks the theory of neural networks and computing related to physics? And number two, I said that the two recipients of that Nobel Prize, which were Jeff Hinton and John Hopfield were really great researchers, but they were not the people that deserve the Nobel Prize if you're giving out one for neural networks. And I suggested a guy named Paul Werbos who-

Gary Smith:

Yep, I read about that.

Robert J. Marks:

Was a discoverer of airbag propagation and also Bernie Widrow at Stanford who did incredible things with neural networks way back in the sixties. And they're the ones that are deserving that. I also mentioned that in the article that I've really lost respect for Nobel Prizes when, who was it? Barack Obama was awarded the Nobel Peace Prize nine months after he become president. And the funny thing, and I ran across a picture of the sign the other day. It was at a gas station and I remembered it, but again, I ran across the actual picture on the web and it said, "Free Nobel Prizes given away with oil change." So anyway, yes-

Gary Smith:

So Hinton has said, this is a quotation, "People say it is just glorified autocomplete." Which I think it is. But anyway, people say-

Robert J. Marks:

Oh, I didn't know he said that. Really?

Gary Smith:

"People say it's just glorified autocomplete, but by training something to be really good at predicting the next word, you're actually fortunate to understand." It's assuming what he's trying to prove. And the fact that you can predict the next word in a sentence doesn't mean you understand what the words mean. It's just a fundamental misunderstanding. And the consequence of that is these large language models are really good, or AI in general, are really good at finding statistical correlations, finding statistical patterns. But in terms of separating the wheat from the shaft, separating the ones that are useful from the ones that are just coincidental temporary correlations, there's absolutely no way to do that because again, they don't understand what the words mean. So here's an example. So in 2017, the word AI was selected by the National Association of National Advertisers as the marketing word of the year. And in October 18th of that year, a mutual fund was started, ETF, electronically traded fund.

And it was the first publicly traded AI powered fund, and its ticker symbol was AIEQ for AI equity. And so the idea was that these large language models would go in and they'd find statistical patterns or AI in general, find statistical patterns and then use those patterns to decide whether to buy or sell particular stocks. And the problem is they could find patterns between all sorts of things. And you can find patterns between the words Trump tweets and interest rates, or I found the words Trump tweets and the temperature in Moscow, or the words Trump tweets and the price of tea in China, or the words Trump tweets and random numbers, because there are going to be, if you look hard enough, you'll always find correlations even among random numbers. And so the first AI powered fund totally bombed, and it was a couple months ago, a student and I did a study of all publicly traded AI powered funds, and there were 10 of them, which were fully AI powered.

And so all the decisions were made by the bot, by the algo with no human intervention and every single one underperformed the S&P 500. On average, a portfolio of these things would've done 8% a year worse than the S&P 500 five of them are closed now, five of them are still chugging along, doing worse than the S&P. And then we looked at 44 partly AI funds, funds where they used AI to figure out which stocks to buy and sell, but then humans could override them and say, "No, that's a bad idea." And of those 44, 34 underperformed the S&P 500 by an average of 2.5% per year, and 26 of those are closed.

And it's just example of statistics is not understanding contrary to Arcas and Hinton, and you apply that in other places, which is being applied unfortunately, evaluating job applications, evaluating loan applications, setting car insurance rates, setting prison sentences based on statistical correlations is just, I don't want to say awful, but it's really unfortunate. And the problem again is statistics is not understanding. And for AI to move the needle economically, somehow we've got to figure out, they have models that actually can distinguish between correlations that are meaningful and useful and predictive, and correlations that are just coincidental, temporary, and fleeting and predicting what word comes next in a sentence is not going to do that.

Robert J. Marks:

I interrupted you, you said, I do this to people sometimes it's a joke. They said, "I have a sister." And I said, "Oh, I have a sister too." But I don't let them complete their sentences so you said Hinton said that ChatGPT is just autocomplete, and I interrupted you. And I said, "Wow, I'm really amazed that he said it"

Gary Smith:

No, no, no-

Robert J. Marks:

Yeah, I know. But then you went on to describe that no, he said, but it isn't, but in fact it is. Yeah. I actually learned a lot from you, Gary, about these so-called spurious correlations, and if anybody hasn't looked at it, there's a website called Spurious Correlations that show the correlations between the most incredible variables in the world, and they follow a great variable. And you pointed out that this is one of the reasons that a lot of the papers which are published today that require statistics are actually wrong. Because what they do is they look for correlations in somewhere, and as soon as they find something, they publish it without sufficient vetting and it's wrong. And the literature is full of these terrible felonious correlations

Gary Smith:

All through science. It's called the replication crisis, and people trying to get tenure or trying to get government grants or trying to get fame, they sort through these data looking for correlations. They write up a paper and then somebody tries to replicate the paper and they can't do it because the first correlation was just some coincidental thing that didn't persist. And it's undermining the credibility of science, the fact that these papers based on temporary, fleeting, coincidental correlations get published, just it's a disaster.

Robert J. Marks:

You mentioned a lot of those quotes. A lot of those are people that are not disinterested in the area of AI.

Gary Smith:

Oh, for sure.

Robert J. Marks:

They want it to come out and they want to promote it. They're salesmen. And if you look at more disinterested people, I think Noam Chomsky called AI, generative AI, like ChatGPT, digital plagiarism, which was a great quote. I was talking yesterday with a good friend who you probably know, Michael Egnor, who is a neurosurgeon, and he was really into the workings of the brain and stuff. And he said, I think a beautiful saying, he says, "Computation is blind to meaning." So therefore, if you have a computer, it has no idea what it's doing. It doesn't have the meaning behind it. I also think that you probably pointed out in your book, I think this is where I read it, about Searle's Chinese Room and his explanation of why computers don't understand what they're doing contrary to what Hinton said.

Gary Smith:

Yeah, exactly.

Robert J. Marks:

Hinton was also the guy that came out, and he said this, I think about six or seven years ago, he said, "In five years, all radiologists will no longer have a job." Did you see that quote?

Gary Smith:

Yeah, yeah. I've used it in a couple of papers and-

Robert J. Marks:

Oh, you have? Okay.

Gary Smith:

He said, "It's absolutely completely clear that there'll be no need for human radiologists in five years." And in fact, the demand has gone up.

Robert J. Marks:

Yeah, just fascinating stuff. Another question here. You described generative AI is potentially falling into the category of quote, unquote, "addictive entertainment."

Gary Smith:

Yeah.

Robert J. Marks:

Could you elaborate on that? I've played around with AI, it is entertaining. I don't know if I'm addicted to it yet. So what do you mean by that?

Gary Smith:

Well, there's one thing is people like me like to get into this parlor game of asking generative AI questions that they give stupid answers to. And one that came up recently is how many Rs are there in the word strawberry? And it gave a wrong answer. Actually, yesterday I tried it with OpenAI's o1 its new, latest, and greatest version of a ChatGPT. And it came back with the word strawberry has two Rs. Who knows where it came up with this? But you can find these questions that cause the generative AI models to hallucinate, give silly answers, give stupid answers.

And so I waste time doing that. That's not increasing my productivity at all, it's reducing it. And the other thing is it's so darn lifelike. And so a lot of people use it like they're, I got a new best friend, it's ChatGPT, and they have these pretend conversations with girlfriends or boyfriends, totally made up, or with celebrities. Like there's websites where you can pretend, have a pretend conversation with Taylor Swift or whoever you want to have a conversation with. And it can be addictive because these things are so good at mimicking human conversations.

But in terms of increasing the productivity of the population, I'd say it's reducing it. It's kind of like social media. You look at Instagram or Facebook or any of these things. Are they really making us more productive or are they actually seducing us into wasting our time on these? Well, I don't know if it's wasting time, but it's entertainment. It counts in the category of entertainment. Or another one, I read recently that 85% of all students are using ChatGPT in their courses and other large language models. It's not always ChatGPT, it's sometimes Gemini or Copilot or other ones.

Is that making them more productive, having a computer model write a paper for you? Isn't that actually making you dumber? What should be learning in your classes is how to think, how to do critical reasoning, how to distinguish between garbage and logical compelling arguments. And relying on a large language model to write a paper for you is actually getting in the way of you actually learning what you need to learn in school. And so again, I put that in the category of a lot of these things are not really increasing productivity, they're seducing us into spending our time with things which are perhaps entertaining, perhaps helping us pass classes, but they're not making us more productive.

Robert J. Marks:



There was an interesting case, this has to do with generative AI spitting out images, and a guy won an art product. You're familiar with this?

Gary Smith:

Well, there's a whole bunch of them. I don't know which one you're going to say.

Robert J. Marks:

Yeah. Well, the one that came out is the guy appealed to the copyright office and he wanted to copyright his image and the copyright office says, "No, you can't copyright anything." And in fact, the patent office says, "You can't patent anything that was not created by a human being." And so this guy said, well, here's the thing though. I spent, I forget what it is, I'm making up the numbers, but something like I spent 100 hours, did 600 iterations back and forth. I wanted this tree not to be here, but over here, I wanted the cloud to be here over here. So he used it in an iterative fashion as I would say, a design tool. That's how I would describe it as an engineer. And I can see AI being used in that way as opposed to just generating a whole image or something and submitting that as something that you created. But I also think it's a very fuzzy line between where AI is used as a tool as opposed to where AI is used as the initial only generative source.

And the people that do ethics are going to have to figure out where that line is. And I don't know where that line is. It seems to be a fuzzy line, but I also know that AI, generative AI, is now being used in creative writing classes where they say, maybe you can make something which is interesting using ChatGPT. And I know me, I'm an engineer, Gary. I did terrible in English. So when I write, I write in very clunky words, and sometimes I read a paragraph and I say, "Oh, I would be embarrassed to publish that." And I go to ChatGPT and I says, "Rewrite this." And I put down my clunky verbiage and it comes back with something which is nicer. And I edit it because it never is exactly what I wanted to say. But I can see ChatGPT is using that way. But I agree with you, it certainly can be disused. I think it's probably like any tool, isn't it? That it's not whether it's good or bad, it's how you use it.

Gary Smith:

Yep. And one of the things about if you rely on any large language model, generative stuff to write papers for you is you got to fact check them.

Robert J. Marks:

Yes, exactly. Well, in fact, ChatGPT tells you that. Don't trust us.

Gary Smith:

It's incredibly lucid and compelling. It's always confident, often wrong. And so if you really don't know what you're writing about, you got to go check it. And if you do know what you're writing about, then you're probably okay.

Robert J. Marks:

Yeah, yeah. In your article you cite Sequoia's David, I think his name is Cahn, he estimates that generative AI would need 600 billion in annual revenue to justify the current investments? Could you elaborate on that? I don't see how that target is realizable.

Gary Smith:

I don't think it is either. I think that's the point he's making, is that it's just unfathomable that they could actually generate that much in annual revenue. And again, going back to the dot-com bubble, during that talk that I mentioned, I talked about Yahoo, which was, this is in March of 2000, which was one of the few profitable dot-coms. And at the time, its price-earnings ratio was, drum roll, not 30, not 50, not 100, 2,375.

Robert J. Marks:

Okay, what does that number mean? I didn't follow what that-

Gary Smith:

Usually one metric for whether a stock is fairly priced or not is how high is the price relative to its earnings?

Robert J. Marks:

Oh, okay, yes.

Gary Smith:

The PE ratio. And so 30 is considered bubbly and 60 like during the Japanese bubble is just off the charts bubbly. And for a lot of dot-com companies, there was no PE because there was no E.

Robert J. Marks:

So that would be infinity, wouldn't it?

Gary Smith:

Yep, or negative...

Negative infinity.

Robert J. Marks:

Oh, negative infinity. Yeah, when you divide by zero, you get infinity. Yeah, okay.

Gary Smith:

But anyway, Yahoo actually had PE, had some earnings, but its PE was 2,375. And so it was estimated that to justify its market value, this is going back to again, David Cahn, to justify its market value would have to be as profitable as Walmart in 2000, not just one Walmart, but the whole Walmart empire.

Robert J. Marks:

Wow.

Gary Smith:

Twice as profitable in 2001, three times as profitable in 2002 and so on forever. It was just, when he said 600 billion, to me, the point was that's not realistic. And the same thing, Yahoo's price-earnings ratio, the price it was selling for was just unjustifiable. There's no way he could earn enough money to justify that price. And of course, when the bubble popped the price fell by 95%. So it's the same thing here.

That 600 billion is not a reasonable projection. And just like Yahoo's price-earnings ratio was not a reasonable number. It's just off the charts.

Robert J. Marks:

Wow. I think a lot of investors are just attracted by, there's a shiny object, a beautiful shiny object, which is AI. I'm going to sink all my money into that. What lessons can we learn from past bubbles, and what advice would you give to businesses that are interested in the dot-com era? And by the way, we probably got to get a disclaimer here. This is what you can't litigate... Okay. So what lessons today's investors and businesses learn from the dot-com era?

Gary Smith:

Well, we're not giving specific advice about companies or anything like that, so I think we're okay.

Robert J. Marks:

Oh, we're okay. Okay.

Gary Smith:

Yeah, yeah, yeah. Well, the thing to do, and it's really, really, really hard to do, it's just human nature, I mentioned before is this fear of being left out and seeing your neighbors get rich, you just want to join in the riches. And Isaac Newton back during the South Sea bubble that you talked about before, he'd gotten into the market and made some money, and he got out, and then he got back in, and I can't remember how much he lost, like 20,000 pounds.

Robert J. Marks:

So Newton Isaac Newton was fooled by a bubble?

Gary Smith:

But he said something like, "I can plot the movement of the stars, but I can't plot the movement of people, or I can't..." It's just really hard to resist that. And what you got to try and do is think about the people who say stuff, do they have an interest in this, the hucksters? And so these people I quoted before, almost all of them are selling products. They're trying to raise money or they're trying to get you to buy their product. They're trying to get you to invest in them, and naturally they're going to exaggerate what the potential is and you got to be careful of that. Another thing is, Warren Buffett's advice, if you don't understand it, don't invest in it. So he famous-

Robert J. Marks:

Well, he said that though, about crypto, right?

Gary Smith:

Yep. Well, I go with him on that.

Robert J. Marks:

Okay. You're still a crypto skeptic?

Gary Smith:

Oh, yeah. He stayed out of the dot-com bubble, and I'm sure he stayed out of the AI bubble, and I know he stayed out of the crypto bubble. I remember his buddy Charlie Munger saying, "I wouldn't bet on it, but I wouldn't bet against it either, because it's just inexplicable with the price of..."

Robert J. Marks:

Why didn't he?

Gary Smith:

Because there's no fundamental basis for valuing crypto. It doesn't generate any cash. It's just I'm going to buy it and sell it to a bigger fool.

Robert J. Marks:

Okay.

Gary Smith:

And you don't want to bet on it because it may crash and you don't want to bet against it because bigger fools may show up, and it's, you know what Warren Buffett invest in and Charlie Munger are things that actually generate some profits like Dairy Queen and Sees Chocolate and Benjamin Moore paints and railroads, stuff like that that actually are generate real profits. And to invest in something that doesn't generate any cash, it's not a sane investment. I'm still a crypto skeptic.

Robert J. Marks:

Are you? But didn't it just pop a new record? It got above what, 100,000 or something?

Gary Smith:

Yeah. Well, you got the newest impetus is our incoming president, Donald Trump is a big crypto fan, and he said we're going to pay down the national debt by buying crypto.

Robert J. Marks:

Oh my gosh.

Gary Smith:

And then he appointed somebody the head of some commission, somebody who's a big crypto fan. And so the crypto people think that it's become more legitimate. And if the government starts buying crypto...

Robert J. Marks:

Oh, that's going to be weird. Okay. It's like the government investing in speculative stock market, I think.

Gary Smith:

Worst than speculative. It's the most speculative stock.

Robert J. Marks:

It's worse than speculative, okay. To wrap things up, let me ask you this. Is there any way that places like OpenAI projected incredible losses despite really heavy investments, do you think that this can be turned around or do you think this is writing on the wall and we're really going to head to this bubble pop?

Gary Smith:

Well, the thing that's the obstacle, which has been here since the 1950s in AI in general and now in large language models, is getting computers to actually think the way humans think. And God knows how, we'll play on words there, God knows how our brains work. I mean, we don't know how our brains work. We don't know how-

Robert J. Marks:

We don't.

Gary Smith:

How do we remember stuff? You fall asleep or you get an operation and you're knocked out and you come back, you wake up and everything's still there. And then somebody says something and you have the critical thinking powers to judge whether it's sensible or nonsensible. How do we do this stuff? How do we put things together, go beyond just memorizing things or recognizing things, but actually thinking about making predictions about stuff, using reasonable things to make those predictions? And I just don't see how generative text generating models can get us there when they don't understand what the words mean.

And I could be wrong, but it's just unfathomable to me that you could think that you could decide whether a statistical correlation you find is meaningful or meaningless when you have no idea what the words mean that are behind that correlation. These models, you might as well put random numbers as the labels for them. This data set is 3642. This data set is 8271. I mean, you might as well put that, and it wouldn't matter to the large language model or in the other AI model, it would still find the correlations. It would still find things that are not correlated, highly correlated, negatively correlated, but it would've no way of deciding whether it's a sensible correlation or a coincidental one. And until we break that roadblock, I don't see how we're going to get to AGI.

Robert J. Marks:

You actually mentioned this random numbers, I think in something that you wrote where you wrote down a bunch of random numbers. You showed it to somebody that traded the stock market through charts and you just generated random numbers. And he looked at this and he said, "Wow, this is great. Tell me what algorithm you used." So even people are fooled by this. So how are machines going to be able to do that?

Gary Smith:

Like I said, I teach investments, and one of the things that's been around forever is technical analysis. People try to find these elusive correlations that allow them to beat the market. And you look at these charts and you read the stock patterns, you see a head and shoulders, or you see a channel, or you see a this or a that. And the problem is those things happen all the time, just coincidentally. And the fact that it happened doesn't prove anything. And so I demonstrated that by generating some price charts from random numbers. I had students flip coins actually to generate them.

And I got like 100 charts or something, and I picked out 10 that looked like patterns that a technical analyst might fall in love with. And I sent them to a technical analyst. I knew a friend from graduate school, and he got all excited about them, and he wanted to know what the names of the stocks were, because he wanted to buy some and sell others.

Robert J. Marks:

Oh my gosh.

Gary Smith:

And I told him, "No, I made these up from random coin flips from students." And he was disappointed. But the conclusion he drew was that you could use technical analysis to predict coin flips.

Robert J. Marks:

Oh geez. Oh, no. No, you can't.

Gary Smith:

That sounds to me like Hinton and Arcas and these people who say statistical patterns are understanding and they're not understanding it.

Robert J. Marks:

Okay. Unless maybe you have enough of them. For example, statistics I think show that smoking is bad for your lungs. But it isn't like there's been a single study that's been published that really isn't substantive, but if you accumulate enough, but even there in terms of the history of a stock, just because a stock has done really well for a long time doesn't mean that's going to continue on to the future.

Gary Smith:

Oh, for sure. Absolutely. For sure. The evidence is overwhelming on that. If anything, stocks that have done well in the past tend to regress to the mean and do not as well in the future than they've done in the past.

Robert J. Marks:

Or even crash like Boeing.

Gary Smith:

Yep.

Robert J. Marks:

Oh golly, that's another story. Hey, thank you, Gary. We've been talking to economics professor Gary Smith about the hype of generative AI and its impact on the market. Gary is the Fletcher Jones Professor of Economics at Pomona College, and we're going to continue the conversation next podcast. Until then, be of good cheer.

Announcer:

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