

iLUMinate Blog Transcript: Brian Merchant on the Limitations of Technology

Recorded March 29, 2023. Listen to it [here](#).

- ANNOUNCER: 00:03 [music] This podcast is brought to you by iLUMinate, the Lehigh Business blog. To learn more, please visit us at business.lehigh.edu/news.
- JACK CROFT: 00:14 Welcome. I'm Jack Croft, host of the iLUMinate podcast for Lehigh University's College of Business. Today is March 29th, 2023, and we're talking with [Brian Merchant](#) who is on campus today to deliver a guest lecture on the topic The Working Limits of Technology: What Happens to Us While the Robots Are Coming for Our Jobs. The lecture is part of the College of Business's Year of Learning, an annual college-wide initiative that focuses Lehigh Business students and faculty on a particular area of interest through classroom activities and campus events. This year's focus is on the benefits and harms of technology. Brian is a writer, tech journalist, and author of the upcoming book [Blood in the Machine: The Origins of the Rebellion Against Big Tech](#), due out in September. He also wrote a bestselling book about the iPhone, titled *The One Device*, and writes a [tech column for the Los Angeles Times](#). He founded Automaton, a site that examines the human impact of automation, for Gizmodo, is an editor at Motherboard, VICE's science and technology outlet, and the founder/editor of Terraform, its online fiction site. He's also the coeditor of a print anthology of Terraform stories called *Terraform: Watch/Worlds/Burn*. So welcome to the iLUMinate podcast, Brian.
- BRIAN MERCHANT: 01:39 Thanks so much for having me, Jack.
- CROFT: 01:41 In your previous book, [The One Device: The Secret History of the iPhone](#), you chronicled the development of Siri, which you called, "Maybe the most famous AI since [HAL 9000](#)," a reference, of course, to the classic Stanley Kubrick film *2001: A Space Odyssey*. In the six years since you wrote that book, have you been surprised by how fast or how far AI has come since Siri was launched?
- MERCHANT: 02:09 Yeah. I think it's safe to say that Siri is no longer the most famous AI in this day of ChatGPT and DALL-E and this latest AI boom. So I think it's a really interesting question. I would not have predicted sort of the level of saturation with AI that we've seen, starting kind of last year in 2022 and really kind of taking off this year. I am really sort of interested in just how much of a moment it's having right now, and I think we can talk a little bit-- they can do some amazing things. It also has some very real limitations. There is a hype factor that is sort of propelling a lot of the conversation right now, especially with image generation and questions of disinformation and whether or not these things are actually sentient. It can be hard to parse what is real in regards to that hype and what is maybe an advanced form of marketing that these companies are kind of enjoying. So there's so much to chew on here. And no, if you had asked me six years ago if it would be the sort of topic that has taken over the tech world, taking everything by storm, I don't know that I would've said this is exactly how it would've happened. But I think, technologically, it's very much in line with what we were seeing six years ago. It's really having a moment.

- CROFT: 03:56 I mentioned HAL 9000, that you included that in your book. And what was your reaction to the unveiling of Microsoft's new Bing chat bot that seemingly developed a rather thin-skinned and even menacing alter ego referred to as Sydney.
- MERCHANT: 04:15 Yeah. So Sydney, I think, was the name of sort of the beta version that they were developing. So it was Project Sydney. So that's how it was referred to internally. And of course, we have this instinct always to anthropomorphize, to give it names, and to interact with these technologies as though they were humans or humanoids, same with Siri. Apple and many other companies do this very intentionally to sort of encourage us to build relationships with the products or to have that kind of experience. So I have Bing's ChatGPT AI search on my computer, and I've been using it as well. I never quite got it to do anything as strange as it did to Kevin Roose, the New York Times tech columnist who had an [interesting late-night experience with the bots](#). So no, it didn't try to get me to leave my wife. It didn't try to appeal to its own sentience or get strange. What I think is interesting is that, immediately after that story kind of went viral, Microsoft kind of turned off the tap, right? It immediately became much more-- the very next day - and even I noticed this - it became much more like a search engine.
- MERCHANT: 05:52 So the way that it works, for those not initiated, is you type in your query, just like you would sort of a search query on Google or whatever. You're encouraged to sort of frame it like you're speaking conversationally. You're supposed to sort of approach it this way. And then you can ask follow-up questions. You say, "Well, that's not what I meant," and it's supposed to sort of discern what you're asking for. And its big selling point is that it's supposed to sort of be able to figure out if you asked multiple things, like, "What are the 10 best ingredients in this recipe I want to make that I need to make sure I have before I go to Trader Joe's?" And it's supposed to be able to sort of cross-reference what a supermarket might have and the ingredients that you're going to need and sort of give you a more refined and interesting answer. It's also supposed to act as this sort of conversational liaison where you can sort of prompt it and get more information out of it.
- MERCHANT: 06:58 Right after that story went viral and sort of it had some negative connotations and-- I actually kind of think that part of the scariness element is something that a lot of these AI companies like OpenAI are sort of quietly encouraging because the more afraid of it we are, the more sort of power that it implies that the system has and the more likely that certain companies are going to want to use it to tap into that power. So we can also talk about that little theory of mine, too, down the line. But Microsoft, anyways, wanted to play it safe. They put the guardrails up right away. So there was sort of a before and after Bing, before that New York Times story dropped and afterwards. And since then, my Bing has been a lot more boring. It's been kind of like a more florid Google. Yes, it uses more words and maybe is occasionally more useful, but it's not quite as exciting or sentient seeming as it once was.
- CROFT: 08:06 Yeah. Now, one of the things I found interesting in One Device, when you were talking about the development of Siri, was this idea that artificial intelligence is really one of our-- I think you called it an age-old fantasy and ambition of the human race. And I think my favorite example you gave was the line - I'm going to quote it - "Mary Shelley's Frankenstein was an AI patched together with corpses and lightning." [laughter] So in recent weeks, obviously, there's been a lot of people sounding the alarm. And I want to read just one paragraph from an Ezra Klein column I'm guessing

you saw and it's been talked about a lot. And you had mentioned the scariness, so this will get us into that: "One of two things must happen. Humanity needs to accelerate its adaptation to these technologies or a collective, enforceable decision must be made to slow the development of these technologies. Even doing both may not be enough." Now, is that really the choice we face?

MERCHANT: 09:17

So I am going to say no, it's really not. I think for one reason. And you can understand why there is this level of concern, especially to those with a little bit less technological acumen or understanding what's actually going on here. It's easy to get kind of swept up in the fear. Again, as I mentioned, I think this is a fear that a lot of these AI services and companies are kind of quietly encouraging in some ways as almost sort of a soft marketing tool, you could say. But what we really have to do is, I think, prepare kind of more economically than societally. I mean, you can't really separate the two. But I don't really see AI as sort of a danger that's going to run amok. I think those fears are overstated. Now, are a lot of companies going to start using AI at different sort of layers of management to perform certain tasks that are going to sort of reorganize the way that we work or put more competition on certain workers? Yes, and that's exactly what OpenAI and a lot of these other AI companies are hoping will happen. They're hoping that people who do data entry or copywriting, or even programming in some cases, are going to start using their tool and pay to use their tool to do these things.

MERCHANT: 10:55

So I do think that there is a level of preparation we have to make. Disinformation is going to be a real concern because we've already seen some of these images spreading that are pretty real, and that technology is going to get better. There's still telltale signs, right? If you look at the hands, there's still weird stuff going on that the AI can't quite get. But we can assume, in a few years, that those will be pretty hard to parse from the real thing. So there are real concerns, but I think we don't do ourselves any favors when we start operating from the assumption that these things are going to be-- that AI is going to be sentient. It's going to take over. That is still in the realm of science fiction. These are still computer programs that are operating within the parameters that they have been programmed to operate. A lot of times they have an incentive, the companies that make them, to sort of make them as real, and they approach this uncanny valley that can make people uneasy a lot, but we're nowhere near to the point where we're going to have to contend with a sentient AI. That part of the equation is something that is not in the realm of concern. Again, we do have a lot of policy questions to make around disinformation, labor questions, the leverage that these tools are going to give companies, but let's not get ahead of ourselves.

MERCHANT: 12:24

You mentioned Frankenstein, and I actually returned to Frankenstein in my new book. And I'm going to talk a little bit in my presentation later today about this history of AI. And I just wanted to flag that real quick because, it is true, it's something that I went deeper into the history of when I was researching Blood in the Machine. And I talked to some researchers and historians of AI and even a zoologist who, I thought, gave a really interesting sort of definition of what separates-- he's a zoologist. His name's Dr. [\[Antone\] Martinho-Truswell](#). I think he was, at least, at the University of Sydney when I spoke with him. And his theory of what makes us human is that we are the beast that automates. So a lot of animals, primates, they use tools, but they don't advance those tools to the point where we could say they're doing sort of crude automation. And I think that's a really interesting definition of what sort of makes us human. And

it sort of points to how baked in this impulse to advance these tools are, to sort of continually find things that will make our work easier, to sort of automate the tasks that we need to do.

MERCHANT: 13:57

So he points to the bow and arrow as the very first sort of example, in ancient Egypt, 2800 BC or so, that-- sure, it's great to throw a pointed object at your prey, but imagine how much better it was for the first person who could just pull a string and point it and launch it-- have that work done for him or her. Really, really interesting sort of theory that sort of really gets at what sort of propelled this will to automate. And now, all these thousands of years later, here we are with text generators and image generators that we can sort of automate the production of entire artworks or text corpuses with the click of a button. So it is an interesting contextualization that I think we should bear in mind. We do want to do this. So the questions are: What are the complications now? Why do we feel so much tension around these issues? And can we untangle that?

CROFT: 15:04

You were talking about what makes us human, and you recently had a column in the LA Times, *The Ghost in the Machine*. And that's the role of these humans that nobody-- or nobody outside the tech world, I think, even knew existed, whose job is to review the search results that AI comes up with and decide what we actually see. So it's not just AI making all these decisions. And in fact, when it starts to go wrong, we have humans who are supposed to intervene and flag it. If you could talk about that role of raters and what their treatment by the tech industry kind of signals for how they're valued there.

MERCHANT: 15:52

Yeah. And this is going to be sort of a theme through a lot of my work, and a lot of what I think about is that a lot of technological systems-- and AI is just a great example of this. In *The One Device*, the book that you mentioned, I wrote that one of the biggest goals that Apple had with making the iPhone was sort of to conceal the inner workings, to make it feel like it was magic when you're working it, to make it this incredible product that you're not thinking of all of the tens of thousands of human labor hours that make it possible. And it can be a great consumer experience, but it can also be problematic when you're thinking about sort of the social implications of technology. And AI is very different. You sit down with one of these interfaces and you type in your question, and it looks like you're getting this magical answer back. Well, first of all, those magical answers are comprised of untold reams of data of past human answers that people have fed various other text-inputting mechanisms, whether it's blogging, content production systems, whether it's just sort of things that Google has copied and placed on the web. It's all the sum-- it's been trained on these vast corpuses of human data. So it's really sort of spitting out what it knows, and what it knows is what's already been created. So a lot of people have pointed out that there's a lot of bias and things that go into that.

MERCHANT: 17:32

But there's also the role of these human raters that-- the systems don't always know what the best answer or the most useful answer is. And this is not just true of AI. This is true of a Google search. So as long as there's been Google-- again, seems like this seamless, incredible, sort of automatic response. You type in, "Restaurants near me," and boom, you get a list. And a lot of that is completely automated, and Google's serving you the results that its algorithm has been trained to suss out for you. But a lot of times, the system doesn't know the best answer, and it serves the questions it has to a totally invisible team, as you said - I, until a few years ago, didn't even know

these teams existed - called raters where they rate the quality of search results to help train the algorithm. And this is hundreds and thousands of working people who sort of do this on a contract basis for Google. They don't get all the fancy benefits that we sort of assume that most Google employees have in the Googleplex, the ping pong tables and the flexible work schedules and the benefits and the stock options. No, these are mostly remote workers working in places where there are fewer, sometimes, labor protections and constraints on what kind of-- on the hours that they can work.

MERCHANT: 19:17

So I think in South Carolina, there's companies that contract for Google. And these are people who are making sometimes less than \$15 an hour, less than Google's own stated minimum wage, looking at, a lot of times, disturbing materials. A lot of content moderators have to look at disturbing materials. Raters are no different because it's saying, "Well, if somebody searches for this, do they want to see this result?" And a lot of times, it'll be a pornographic or sort of an otherwise unpleasant result. And they say, "No. No, no, don't show it," but there has to be a human training the machine to say, "Do not show anybody that. That's awful." And these raters have been exposed to violent material, to child pornography, illegal materials. And they're making sort of the least amount of money at anybody in Google. And they were in the news, and I wrote about them in large part because they're organizing to try to get better treatment. And I think they did-- there's people doing this at YouTube. Google contracts with a lot of these different companies that provide these services. And actually, a lot of them are trying to organize right now.

MERCHANT: 20:45

So it is really worth remembering that when you're using any of these services, whether it's Google or Bard or AI-- I mean, OpenAI was found to have been outsourcing its moderation because they have to have somebody checking their results, too, and to-- I think it was a firm in Kenya or-- don't quote me on that, but it was somewhere offshore where they were making \$2 a day, basically, to go through this disturbing material. So there's always a human. There's always a ghost in the machine that we can't see that's making this stuff possible.

CROFT: 21:25

Now, this issue of organizing, I think, gets at another one of your recurring themes and why I think you're so interested in the history of our interactions with technology. And as longtime thinking that Luddites have gotten a bad rap, I'm really interested to hear that you are defending Luddites in the new book. So I'm curious, what don't people understand about Luddites? And I think even more important question is: Why does it matter today?

MERCHANT: 22:05

They're deeply misunderstood is a good way to put it. They have gotten a bad rap. And I wouldn't defend all of their tactics, but again, no group or individual is perfect. But I think once we drill down and see what they were actually all about, then they become much more sympathetic, much more interesting, and much more valuable as a case study for moving forward because the Luddites-- if you know anything about the Luddites today-- or if you know the word today, the chances are you probably know it as a derogatory epithet, right? It's somebody who hates technology, somebody who doesn't understand technology, you know, "Oh, I'm a Luddite. I don't even have a smartphone," or something. You won't find a lot of those people anymore, "I don't do this or that," or, "I hate Amazon." But that's not a correct sort of encapsulation of what the actual historical Luddites were all about. The Luddites were

not anti-technology is the number one most important thing. They understood technology better than almost anybody. They used technology in their homes.

MERCHANT: 23:32

The Luddites were a group of artisans and cloth workers sort of at the beginning of the industrial revolution who felt the squeeze more than anybody-- or were more concerned than anybody about what a particular usage of technology was. And they saw sort of this early sort of generation of entrepreneurs taking automating machinery, machinery that could, in some cases, do their jobs, in some cases, do a version of their jobs, and sort of organizing production in factory-style operations at a time when trade was already low, when they were already struggling to get work. So they saw basically the beginnings of what we would recognize as the modern factory system. They saw the beginnings of what we would understand to be automation technology. And more importantly, they saw it being organized to profit one person at the expense of the many.

MERCHANT: 24:44

And it's an interesting case to me because back then the situation was a lot more clear-cut. This is before globalization, of course. This is before things get really complex with diverse economies. These are weaving towns where that's the industry. You're born to a wool-weaving family. Your father was a weaver. His father was a weaver back 200 years. These societies that sort of organize themselves around the production of a particular thing. So when somebody sets up a factory outside town and all of a sudden your shop's not getting orders, you're not getting the business that you used to get, you can point to where it was going, outside of town. And to the weavers in those days, who had sort of operated under these assumptions for hundreds of years, whose lives were governed by all these regulations and norms and standards, it didn't look like progress to them. Nobody had told them that this was progress-- that this is the future. It looked like theft. It looked like somebody was taking their work. And all of a sudden, the person who owns that factory has nice clothes and a hat and he's riding his horse into town. And meanwhile, people are literally starving, not figuratively. People are going hungry because of this rupture in the way that work was organized.

MERCHANT: 26:16

So what the Luddites did is-- the other thing that people don't understand about the Luddites is that they spent about 10 years when they saw that the writing was on the wall, and they went to parliament and they said, "Look--" they weren't called the Luddites yet. These were sort of the informal trade groups representatives. And they said, "Look, these machines are breaking all of these rules. We have all of these laws that were, in some cases, put on the books by King Charles years and years ago that said, 'Hey, if you want to get into this trade, you have to apprentice for this number of years. You have to use this kind of cloth.' These rules, they're not super enforced because they don't have a ton of enforcement, but they matter. And they were binding, and this is how we sort of lived our lives, and these machines are trampling them." So they said, "Can we--" they said, "Can we at least pause the development of this machinery?" They introduced all these ideas for ways to deal with this system. And a lot of them, actually, might be interesting to students or observers of the ways that we're trying to deal with automation today because they put forward a lot of the very same ideas: retraining programs, taxing the machines, just putting a pause on development until trade improved, or means of gradually introducing these machines so it wasn't such a dramatic rupture in their working lives.

MERCHANT: 27:43

And it just so happened at the time that the parliament was run by extremely free-market Tory politicians who were opposed to any, at all, meddling in free trade. The ideas of Adam Smith were very new and very fashionable. They had just kind of become the sort of standard line among a lot of politicians. It seemed very exciting to a lot of them. And they used that philosophy, and they took it to a T. And they said, "No, not only are we not going to uphold these old trade regulations, we're not going to provide any assistance because that would meddle in the trade." So you have people who are quite literally starving asking for any kind of help, anything, and the state saying no, these biggest entrepreneurs saying no. And then a crisis point is reached.

MERCHANT: 28:48

And so the Luddites do what they're most famous for doing, which is organizing under this banner of Ned Ludd or General Ludd or King Ludd. And under the cover of night, they organize these guerilla sort of operations. And first, they send a letter, signed General Ludd, warning the factory owners, saying, "Take down your automating machinery, or we will sneak in and-- or we will destroy it by force." And if they said no, that's what they would do. They would either break in through the window, smash-- and they would only smash the machines that were doing the automating. Other kinds of finishing machines, they made it a rule, especially at first, to leave that alone. This was a message, "We don't like the direction that this automating machinery is taking society at large or what it's doing to our trade, so we're going to destroy this automating machinery and have that be a lesson," and they'll get out. And for months and months, they were extremely effective. They were extremely popular. This is from the region of Robin Hood, so you can kind of-- Ned Ludd, Robin Hood, General Ludd. This might have evolved from the same sort of folk hero. So people would cheer them. People would watch them sneaking into the factories, hauling out the machinery, and smashing it, and they would applaud. In some cases, town officials, at first, would watch them and applaud them while this was going on.

MERCHANT: 30:20

It was in many ways a very popular movement, especially, again, at first. And it was effective too. So they got a lot of the factory owners to say, "Fine. Okay, we're going to stop using the automated machinery. Leave us alone. We'll restore prices to what they were before we started doing the automating," because, of course, one of their grievances was, when you're doing automated machinery, you can charge less for it. One of their chief grievances was the fact that the new machines sort of degraded the quality of the goods they were putting out and so that it was sort of ruining the reputation of the trade in general. The machines couldn't do it as well as they could, but they could produce more. So it was sort of cheapening their trade and damaging their reputation. So they won these concessions. And this was at a time when sort of organizing was illegal. Unionizing was illegal, one of the reasons it was pushed to this brink because the Combination Act had sort of outlawed even sort of coming together as a group of workers and asking for better conditions. So it's more evidence that, when these crisis points are breached, there's things that could've been done along the way to prevent the Luddites from taking up this arms.

MERCHANT: 31:44

So yes, I think they're sympathetic figures, and I think that they were doing what a lot of people would've done. They were fighting to protect their livelihoods. They were taking up arms to protect their livelihoods. And we can talk more about what ultimately happened if we want, but the state was forced to respond in this very dramatic way. Or it felt forced to respond. Again, it's very telling they wouldn't sort of send money to sort of offer relief or welfare benefits or things like that, but they

would deploy the military. So they sent tens of thousands of troops, more than they had fighting Napoleon at the time. It was the largest domestic occupation of England in the nation's history, tens of thousands of these troops into these industrial towns to sort of combat the disturbances. And they eventually made it a crime to break a machine that was punishable by death. So they took these very extreme measures to fight the Luddites, and eventually, they were successful in putting down the rebellion. And you could argue that both sides forced each other's hands. And one of the Luddites assassinated a factory owner, and that kind of turned the tide of popular support. And then the movement eventually sort of faded away.

MERCHANT: 33:13

But there are a lot of really telling examples, and I'm going to be talking about them in my presentation tonight. But there's a lot of, I think, useful sort of bits of information that we can take to heart about how automation is deployed, what kind of policies we can use to sort of intervene when necessary, what workers find important about their lives that machinery is capable of trampling over. But yeah, the Luddites, until sort of they lost, they-- while they were fighting, they were popular. And Lord Byron gave a huge speech sort of helping to cement their legendary status. But after they lost-- the victors write the history books, right? And so ever since then, it's been sort of-- the victors have been compelled to sort of cast aspersions on the Luddites, and today we know them as these mindless machine breakers, when that really wasn't the case.

CROFT: 34:22

Brian, this has been fascinating. I think we're out of time. I know you've got a busy schedule today. So I'd like to thank you so much for being with us on iLLUminate today, and.

MERCHANT: 34:34

Well, thank you so much for having me. See, you get me talking about the Luddites, and I take up the rest of the podcast time. So, sorry about that. But yeah, no, it was great to chat, and I look forward to the rest of the day, for sure.

CROFT: 34:50

Brian Merchant's work has appeared in The New York Times, Harper's, WIRED, The Atlantic, The Guardian, Slate, VICE Magazine, Fast Company, Fortune, and beyond. He's at Lehigh today to deliver a guest lecture as part of the College of Business's Year of Learning, which is focused this year on the benefits and harms of technology. This podcast is brought to you by iLLUminate, the Lehigh Business blog. To hear more podcasts featuring Lehigh Business thought leaders, please visit us at business.lehigh.edu/news. And don't forget to follow us on Twitter, @LehighBusiness. I'm Jack Croft, host of the iLLUminate podcast. Thanks for listening. [music]