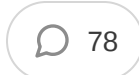# When Will AI Take Your Job?
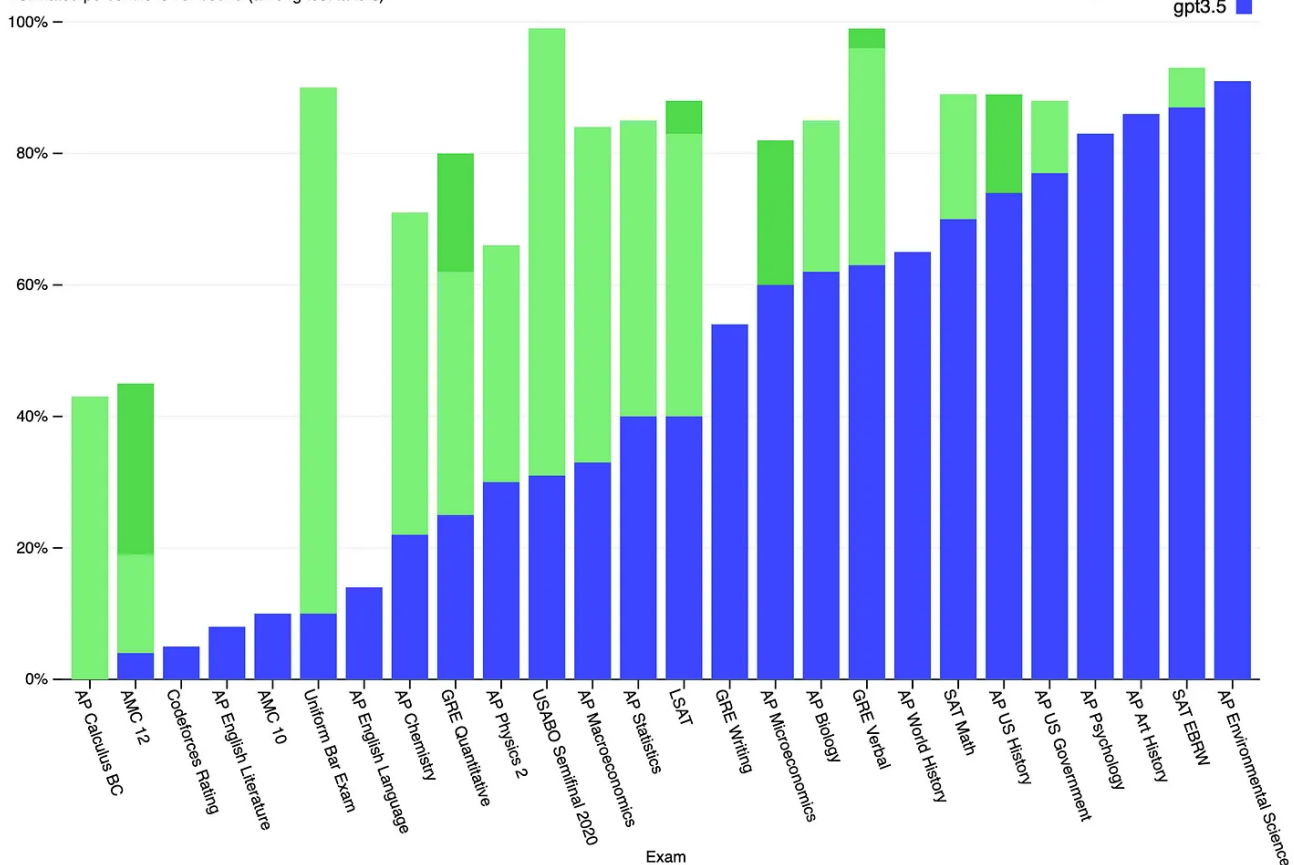
Tomas Pueyo ✓
Mar 21

♡ 118   💬 78   ⬆️

In a matter of months, a new type of artificial intelligence (AI) has gone from a fun toy to beating humans at many tasks:

This graph shows the improvement in performance of the recently released GPT-4. These are percentiles of humans, so when this shows that GPT-4 passes the bar at the 90 percent percentile, it means it's better than 90% of candidates! You can see in blue the ability of GPT-3.5, and in green the improvement of GPT-4 on top of that. In just 6 months! Source.

Naturally, many people fear for their job. But this fear is not new. It's been here since the Industrial Revolution. Ten years ago, Frey and Osborne rekindled it when they claimed that nearly half of jobs were at risk of automation. In the last few months, this fear has

exploded with the arrival of AIs like those of ChatGPT. New papers suggest that these technologies spell danger for telemarketers, teachers, lawyers, psychologists, mathematicians, accountants, proofreaders, assistants…

Which jobs are really going to suffer? How can we know?

Cristiano Ronaldo makes 100 times more money than Pelé did in his prime. This dynamic is at the core of automation. If you understand it, you'll know when to expect an AI to take your job.

In this article, we'll cover:

1. What jobs will disappear
2. Which ones will grow
3. How you can deduce it for yourself (TL;DR: it depends on the speed of demand

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Let

H   y Jobs?

When computers appeared, followed by spreadsheets, accountants feared for their livelihoods. Then this happened:

Share of the US Population that Works as an Accountant

Say what? Anybody can use Excel! And yet the number of accountants as a share of the population has increased by over 2x in 50 years?!

Meanwhile, this has been the evolution of farmers in the US:

Share of Americans working in Agriculture
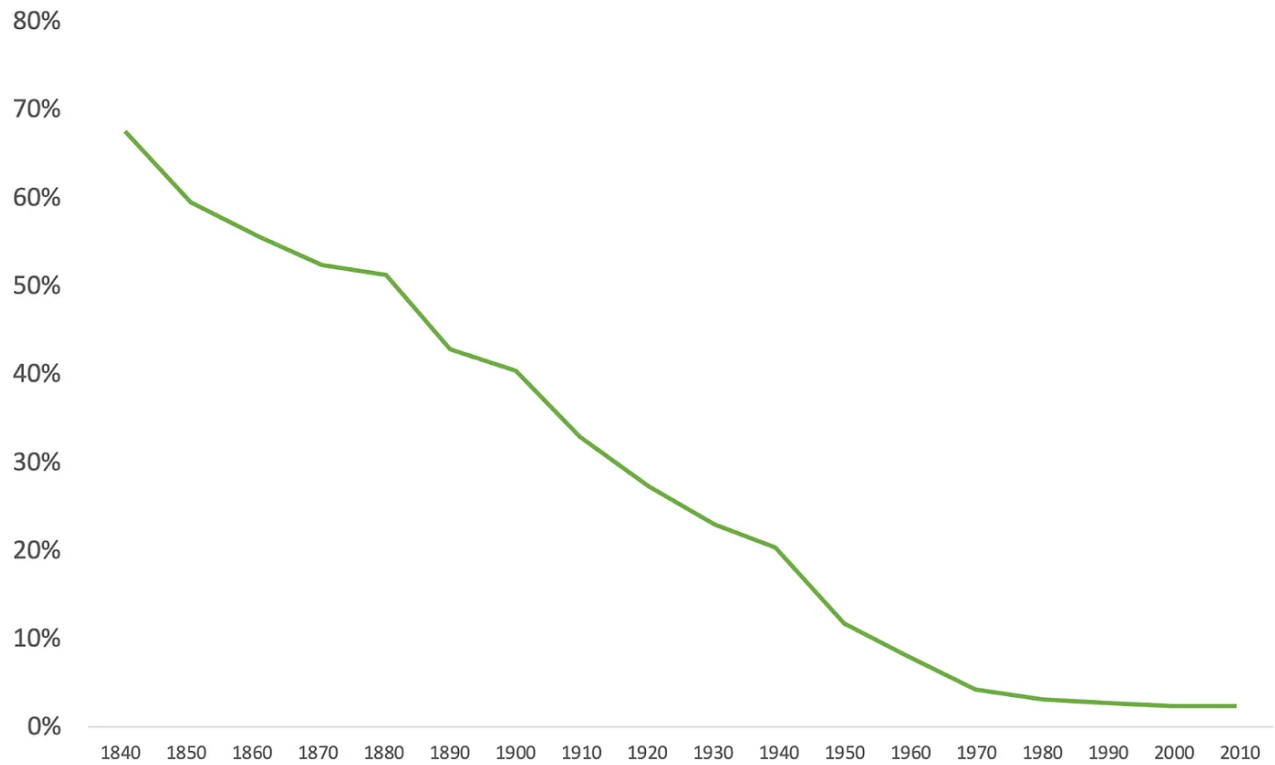
Sources:
- 1840–1900: Robert E. Gallman and Thomas J. Weiss. "The Service Industries in the Nineteenth Century." In Production and Productivity in the Service Industries, ed. Victor R. Fuchs, 287-352. New York: Columbia University Press (for NBER), 1969.
- 1900–1940: John W. Kendrick, Productivity Trends in the United States. Princeton: Princeton University Press (for NBER), 1961.
- 1950–2010: Bureau of Economic Analysis, National Income and Product Accounts.

We interviewed horses, and this is what they had to say:

And then this happened:

This is just farm horses, but they accounted for the vast majority of horses. We can see a <u>similar pattern in Europe</u>. The nail in the coffin for horses was cars. We'll see later why the number of horses grew so much in the 19th century.

How can we tell which jobs will be like accountants (they increase with automation) and which jobs will suffer the fate of farmers and horses?

Demand Saturation

According to *Automation and jobs: when technology boosts employment*, this is the history of employment between 1800 and 2000 in three US industries:

The first two jobs, textile and iron/steel workers, grew for nearly a century, and then dropped. Meanwhile, in vehicle manufacturing—which started much later—workers grew fast until the 1950s, but have decreased slowly since [1]. Why?

Let's look at the improvement in productivity:

We can see the productivity of workers just kept increasing consistently across all three industries. Notice these are logarithmic graphs, which really means productivity grew exponentially. This is the power of technology.

The message of both sets of graphs together is that early on, both employment and productivity of these workers grow. Numbers of employees grow linearly, and their productivity grows exponentially.

Now let's project that into the future: What do you think happens if you're employing more people who're more productive? You will end up flooding the market. This causes tougher and tougher competition, which translates into higher quality and lower prices.

This means demand keeps growing until the quantity and prices are so good that increasing them won't make a massive difference anymore. It tapers out.

This graph shows productivity in the horizontal axis and demand in the vertical axis. Look what happened here: As productivity increased, demand initially followed. But after some time, it plateaued.

If you focus for example on the textile workers, automation dramatically reduced the cost of producing clothing. Early on, workers needed many days to produce a piece of clothing, so they were very expensive and most people couldn't afford them. As automation reduced the human time needed to produce a piece of clothing, the cost dropped, and the price dropped too. People could suddenly buy many more articles of clothing, which they did, and the overall demand increased so much that the industry employed more workers.

For example, if early on it took 10 work days to make a piece, and after automation it takes only three days, the labor cost has dropped by 70%, and the overall cost might have dropped by 50%. If there's competition, the price will follow the cost. At a 50% cheaper price, customers might buy *four* times as many pieces, spending more overall, and the number of workers needed would have increased by 20%.

Generalizing, this is the story:

1. Automation arrives and increases productivity by eliminating some human tasks (=lower labor costs).

2. This reduces the cost of the product.

3. If there is competition, this increases quality and reduces prices.

4. Demand soars.

5. This increase in demand creates so much more work that [2] companies need to hire people to do the tasks that are not yet automated.

6. But at some point, this improvement in quality and price saturates demand. People don't want more products. They stop buying much more.

7. But productivity keeps improving. More and more tasks are automated, but the volume of sales doesn't grow as much.

8. Employment drops.

This explains why lots of agricultural jobs disappeared—and the horses: People prioritize food. If you increase productivity, you'll produce more food, and people will buy a bit more if they just couldn't afford it before. But once their hunger is covered, they don't want more quantity. They want more quality. This can only create so much more work. You won't buy 30 avocados because they're 30 times cheaper.

Meanwhile, accounting is surprisingly useful! The more you can understand what your money does, the better you can manage it, communicate about it better, optimize expenses… Automation has eliminated the more menial tasks, freeing accountants to do more interesting and useful tasks, creating more value that customers are happy to pay for.

At least until now.

What will happen with accountants as their productivity keeps improving?
Will they taper latent demand? Will AIs answer most accounting questions,
reserving the very hardest parts of the job for the most elite accountants?

If all this is true, here are two fundamental forces that drive the job creation and destruction of automation:

- How fast productivity increases

- How much latent demand there is

If there's a lot of latent demand, you can keep flooding the market with higher productivity, it will eat it all.

If there's little latent demand, the increase in productivity will cover it.

If productivity grows very very fast, it will drown latent demand and get into job destruction mode.

Superstar Economics

Sports

Now we can go back to Ronaldo and Pelé:

> *Pelé, the Brazilian named by many as one of the greatest football* [3] *player of all time, made his World Cup debut in Sweden in 1958, when he was only 17. He became an instant star, coveted by every team on the planet. By 1960, his team, Santos, reportedly paid him $150,000 a year — about $1.1 million in today's money.*—How Superstars' Pay Stifles Everyone Else

Meanwhile, Cristiano Ronaldo made $93 million in 2017 when he was playing for Real Madrid. The average pay of the Spanish football championship was around $850k, or less than 1% of what Cristiano Ronaldo made.

How is this possible? Is Ronaldo 10 times better than the average player? Does he score 10 times more? Run 10 times faster? He doesn't. Nor is he much better than Pelé was [4]. Yet there is a nearly 100x difference in compensation between them. Why?

For Real Madrid, an improvement of even 1% in its performance might mean a score at the right time. It might be the difference between winning championships or not. And if Real Madrid didn't spend that money on Ronaldo, maybe its arch-nemesis Barcelona would, switching the edge to the main competitor.

Followed by millions across the globe, winning more games and titles means much more revenue. The team must be the best, so even small improvements are worth millions, especially to make sure that the best players won't go to competing clubs.

Meanwhile, there's only so much football you can consume. There's already much more supply than demand. Enough of La Liga? Watch the Premier League. Enough of that? Follow the German one, or the Italian one, the French, Brazilian, Argentinian… And when you're done, you can start with lower divisions. And then you have American football, baseball, basketball, golf, handball, rugby, archery, curling…

Automation has brought infinite supply.

In olden days, you had to get your ass through the door, get in your car, into the traffic, and go to the stadium to see *your local team*. Whenever they played. Each team had a

captive market—the neighbors.

Since then, we've automated *the distribution of sports content.* First, with radio. Then, with TV, satellite, Internet, live, pre-recorded… Now, when you go to the stadium, you can post the pic on Insta while you watch the replay because you missed the touchdown that happened five hundred feet away because of your myopia, your hotdog's mustard falling on your shoes, and the guy in front of you who's going on and on about his aunt.

Now, the distribution cost of high-quality sports content is near zero. What's expensive is producing it, mainly the salaries of the few dozen guys galloping on grass for an hour or two.

If it's expensive to create something, but not distribute it, there is a strong incentive to distribute to every corner of the globe. Since every team of every sport is in the same predicament, you have a sudden avalanche of sports games at every hour of the day.

Because, OK, you're a fan. You can gobble up a bit more American Football. A couple of games a week. Three. **Four**. But, I mean… At some point you're like PLEASE NO MORE! Or in other words, the demand doesn't grow with productivity.

And since now you have access to all the sports in the world, you want the best. You replace the regional championship with global leagues. If you want to make money, you better belong to the elite—or do it for love.

Maybe if you're the best in the world in curling over rocks you'll have a small niche market covered by megafans from Iceland, Indonesia, and Lesotho. But if you don't create top quality or niche content, good luck.

The Content Industry

Sports is just one type of content industry. Once you understand its behavior, you can apply it to other content industries.

Music

Up until the early 20th century, if you wanted to listen to music, you had to go see the local musicians play, or tap on the table yourself. Bands existed around the world to fulfill that need.

Then came recordings and the radio, which rocked the world of music [5] in the 1920s. Suddenly, you didn't need to hear mediocre music live. You could just put the radio on, or the phonograph, and listen to some of the best music ever performed. The result is that live music crashed. For example, Vaudeville theaters in the US went from about 1,500 in the early 1920s to a few hundred by the end of the decade [6].

Here we have the same mechanics as for sports:

- Recordings and radio exploded supply productivity: With one recording session, you could have infinite listening sessions everywhere on Earth.
- This tapped out the latent demand for music.
- As a result, most live musicians disappeared, replaced by the top ones—or niche ones.

This continues to this day, as more technology makes music even more available.

> *In 1982, the top 1 percent of pop stars, in terms of pay, raked in 26 percent of concert ticket revenue. In 2003, that top percentage of stars — names like Justin Timberlake, Christina Aguilera or 50 Cent — was taking 56 percent of the concert pie.*—How Superstars' Pay Stifles Everyone Else

Even with more ubiquitous music every day, with tens of millions of songs at our fingertips through half a dozen music services, listening time barely grows.

We see the same pattern in music: Dramatic increase in productivity, much lower increase in demand, wealth concentration (because now you give your money to the best musicians in the world), and employment reduction (both live musicians and those who lived off that service).

So demand is tapped out.
Employment shrinks.

Only the best content and business providers win.
They make more money.
The rest disappear in the land of the forgotten.

Film

Film is another good example. So far, movie supply has been limited by productivity: It still takes five years and hundreds or thousands of people to produce the best films and videogames.

> *Studios such as Pixar have 600 or more creative people working on a movie for three to four years. They need to be housed and provided a creative environment and tools to do their creation.—*Source.

Now, Generative AI will streamline many of these processes. AI will be able to help conceive stories, iterate on the plot, come up with great concept art, create videos from sentences, edit them to look amazing on the fly, add the right AI-generated music…

Don Allen Stevenson III
@DonAllenIII

🤯How is this even possible? #gen1 research @runwayml #aiart #aivideo #videotovideo

0:00

10:26 AM · Feb 16, 2023

3,537 Likes   **838** Retweets
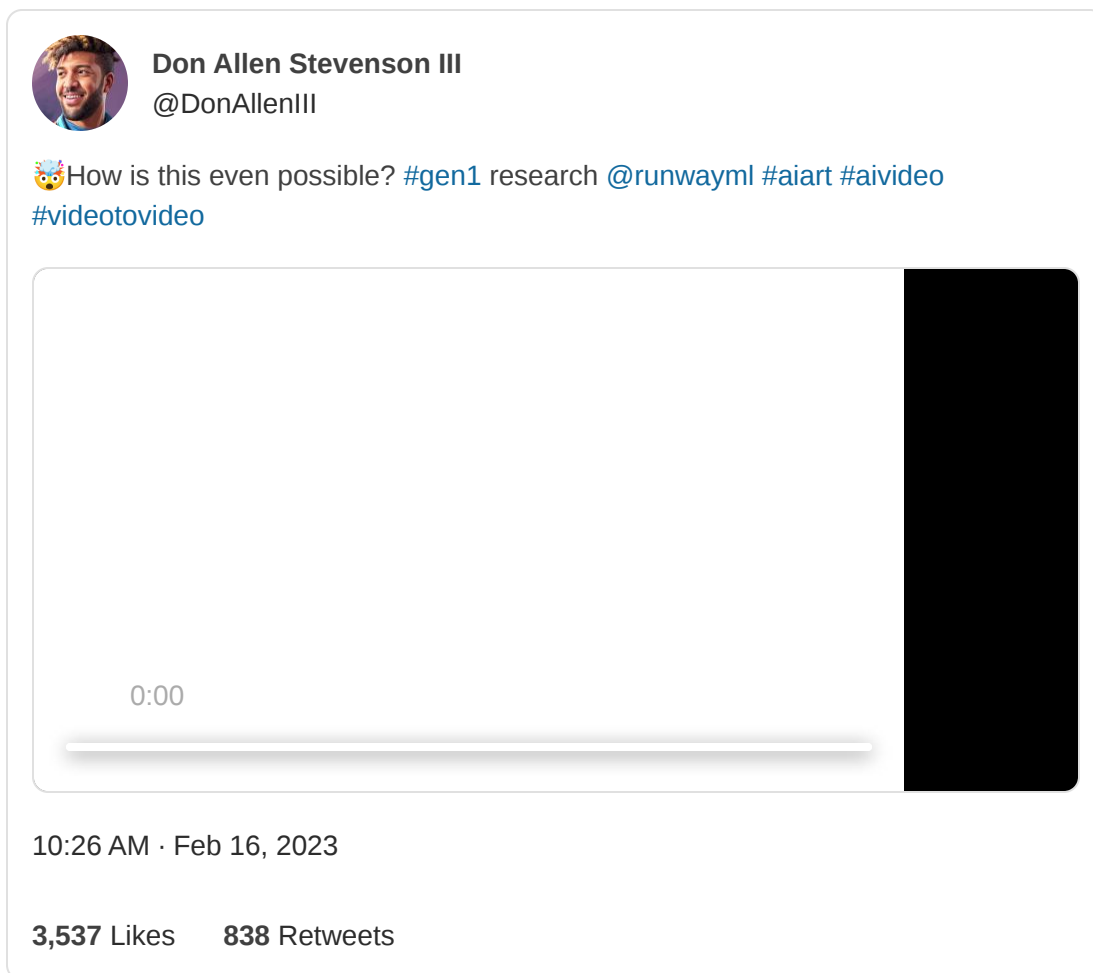
The creator recorded the video above, added the images for style below, and RunwayML generated the video in the middle. This is still not working perfectly, but it's not a big stretch to imagine where this will be in a few months.

The best creators will be able to churn out amazing art pieces unhindered by the need for money or coordination with other people. This *increase in audiovisual productivity* will allow anybody to craft extraordinary movies. The next Scorsese might be a teenager from Jodhpur tinkering with AI tools right now.

We know what happens in these situations: We've seen it with music, but also with YouTube. Distribution is even cheaper than on platforms like Netflix. Anybody can create

and publish a video, and we've seen the result: Billions of videos, most of them trash, but with a few gems. Now imagine if the productivity increase is not just on distribution, but also on *production*. People like Mr Beast have created billion-dollar media empires. What will happen when people like him can create videos a hundred times more easily and cheaply?

The result is that even more people will create quality audiovisual content, but since demand can't grow much—people already watch many hours a day—some audiovisual creators will increase their productivity and make amazing works, while the rest will scrape by.

Other Forms of Content

This mechanism is soon going to pervade every corner of the content industry. We're seeing it with drawings and Generative AI right now. Tech like Stable Diffusion or Midjourney is still super early, and yet many people reckon that artists are doomed.

> *My partner, an artist, has adopted the use of Midjourney exactly as described and is churning out artwork with the AI completing the task of composition of the piece for her. However she fears that we're months away from AI advancing to the point of ironing out the weird kinks like the extra fingers and other uncanny valley aspects. At that point, surely any paying customer will just source their artwork straight from the AI?—*Osprey22.

Same thing: Productivity increases mean more work in the short term, but if productivity increases so fast that it saturates demand, things move quickly to the job destruction phase.

The main winners of these trends will be all of us consumers, with access to much better content.
Also, the best creators, who will use these tools to generate lots of great content and rake in its benefits.

Some companies will make millions assisting these creators with tools, or helping demand wade through the oversupply.

The losers will be all the average content creators: average illustrators, average lighting specialists, average editors, average singers, average journalists, average writers…

Wondering if I prefer the fingers, the scary-laughing faces, or the rows of teeth. Apparently, Midjourney 5, released a few days ago, doesn't make these mistakes anymore. I made all these illustrations with [Midjourney](#).

Industries Similar to Content

We just covered content industries. But what does "content" mean? It's information produced for mass consumption: books, movies, YouTube videos, songs…

Now, AI can do something new: *Personalize information.* This opens the door of automation to industries previously protected, like education, healthcare, or law.

Education

A big chunk of education is content: curricula, learning objectives, readings, lessons, study books, testing materials, etc. It's not a coincidence that this part of education is already better in places like YouTube or Khan Academy.

Then why hasn't education been disrupted by automation yet? For two reasons: The core of learning, and other education services.

The holy grail of education is solving Bloom's Two Sigma Problem. The best way to help students learn is with a personal tutor—it can get almost anyone to the 98th percentile in performance. But it's impossible to give a tutor to every student.

Or rather, it used to be impossible.

AI is not far from allowing this. As foundation models improve, along with fine-tuning and prompt engineering, this will become possible. We're months or years away, not decades.

Can you imagine asking your personal tutor anything about any topic, and it helps you learn everything easily, in an entertaining way, and in depth? The quality and speed of learning will explode.

What does this mean for education jobs? AIs will soon be much more productive than humans for the *learning component* of education; humans simply can't compete with personalized education. The best educators will create content, improve AI products, or tutor rich children.

But education has more components than learning: childcare, having a human being that cares about you, certification… Some of these components will likely be automated out—like certification. Others, like childcare, still have a lot of untapped demand, and that will be hard to automate. We'll talk about this later.

All of this means that the nature of education will change drastically, even if the number of education jobs might not shrink accordingly.

Healthcare

We can also break down healthcare into its components: diagnostics, tests, treatment decisions, treatment execution, patient care, pharma…

Some of these components are not made of information, like patient care or handling a human to take a blood sample. Those won't be automated too soon. Nurses are probably safe.

But diagnostics and therapy plans are information, as is a chunk of pharma. We're already witnessing how AlphaFold is transforming the pharmaceutical industry. Meanwhile, many companies have been trying to beat humans in diagnostics. They don't always succeed, but they're close, and it's very likely they will prevail: It's impossible for a human to keep abreast of all the scientific papers in their field, calculate complex probabilities, weigh their personal experience with patients, make sure it's not weighed more than data on papers, incorporate real-time data on local epidemics… But AIs can. It's simply a matter of teaching them.

Paradoxically, this will likely *increase* healthcare employment in the coming years. Do you already have access to all the healthcare you ever wanted? Probably not. Today, to get a diagnosis, you need to google your symptoms, swallow a xanax to reduce your tachycardia from the cancer you've concluded you have, go to the doctor, pay your $500 deductible, get naked, get a piece of wood in your mouth ("*Say aaaaaaaah*"), lights in your eyes, a hand on your stomach, a pat on the shoulder, and an RX for Azitromicin in your hands because "*Who knows what you have, take this and if in seven days you're still feeling bad, come back* [7] [8]*."* Since at this point you know this, you wait to go to the doctor when you're about to die or have lost a limb.

Instead, if a personalized AI had years of your biometric data, all the scientific papers in the world, all their underlying data, and it was connected to the Internet to know in real time what's happening around the world, it could tell you: "*You have a 68% chance of having a picornavirus. 93% of the time, it resolves by itself in 48h. You have a 23% chance of meningitis, which can be severe, but you can wait 48h before a diagnosis, so you can wait and see if you get better in the next 48h or go to the hospital once your temperature goes beyond 102ºF, at which point you'll need a CAT scan or an MRI if it's available* [9]."

Today, this is not possible, so diagnostics and treatment decisions are very hard and frequently wrong. This means patients waste lots of time and money. But with this type of information, doctors will be in a much better position to make better decisions faster, which will reduce costs, make healthcare more affordable, and increase quality. As we've seen, improvements in costs and quality will lead to more demand, because we're a long way from saturating healthcare demand. This increase in demand will likely create more jobs [10].

Law

Something similar will happen in law. Today, hiring a lawyer is not something you do mindlessly like opening your water tap or ordering a burrito. They're very expensive—which is logical, since it's very hard to become a lawyer, and each case takes a lot of work.

But what if each case did not take a lot of work?

Imagine that you could tell an AI all the details of your situation, which it can access easily through your phone and email information. It can study the laws, precedents, tell you accurately your chances of winning, what evidence you should provide, how and where to submit to claims…

Would that eliminate the need for lawyers? No, because as the system stands, we still need human lawyers to defend the case in court, sign papers personally, interact with other humans…

Joshua Browder
@jbrowder1

DoNotPay will pay any lawyer or person $1,000,000 with an upcoming case in front of the United States Supreme Court to wear AirPods and let our robot lawyer argue the case by repeating exactly what it says. (1/2)

4:57 AM · Jan 9, 2023

16,148 Likes   **1,943** Retweets

Maybe in the future we will reform the system, but today only humans can do these tasks. So AIs will eliminate the other tasks—especially the preliminary work [11]. I'm not sure how expensive that part is, but if it's 80% of work, automating it out would mean lawyers could take five times more cases. If they reduce their prices by 60% due to competition, lawyers will make more than before, more people will be able to afford lawyers, the total demand would increase, and we would have more law employment.

Conversely, if what limits justice is not lawyer time, but rather judge time, lawyers won't be able to get 5x more cases. They won't be able to take any new cases. And yet costs would still go down by 80%. In that situation, prices will likely go down due to competition, but demand will still not be able to be met due to waiting times. The best lawyers will take the market, and the rest will lose their jobs.

We can see the same pattern at play in all these industries of personalized information: AI will automate the information component quickly; work, costs, and prices will shrink; quality will increase, and demand with it. But these industries have other components that aren't information and can hardly be automated. Depending on the specifics of these other tasks, the number of jobs might grow or shrink.

Other Industries

Logistics

I received this note from a reader (slightly edited for anonymity):

> *My oldest son works for Amazon as a distribution facility manager. He recently shared with me that he is struggling mightily to retain employees. At his facility, Amazon's entry-level 100-day retention rate has gone from—approximately—75% to a startling 30% in the last two years. He says this is typical across the country for Amazon. Worker conditions are so repugnant and Orwellian that pay raises no longer entice. Even worse, the jobs are so mindless and repetitive that even the most dedicated worker soon loses focus and motivation.*
>
> *In my son's facility, the robots and artificial intelligence now handle the most complicated and demanding order picking jobs (flawlessly, mind you), and the human workers are sidelined with increasingly menial tasks (i.e. package A and B fall from a chute and are combined in to a single box and shoved along the conveyor.) Despite the simplicity of the tasks, every single issue that his team has to sort out in the course of the typical day can be traced back to human error. Even the most attentive human will botch one order out of a thousand.*
>
> *He says that in the last year his budget for employee bonuses, incentives and motivational prizes has been slashed. Amazon seems to be making no effort to keep workers, and/or keep workers happy. My son says that Amazon received considerable multi-year tax incentives for hiring X number of employees when his facility was built—but these incentives are scheduled to phase out in the next couple years. In my opinion, once the tax incentives have expired, we will see Amazon begin to aggressively thin the entry-level employee herd, followed by many managers with no one left to manage. Obviously, Amazon wouldn't apply this approach to a single distribution facility. I suspect that this is their plan for the bulk of their workforce in the coming years; expiring tax incentives followed by workers replaced by more reliable automation.*
>
> *What is different now is that the transition has gone from something that may happen in the future, to something that is happening now—and it's accelerating*.

This perfectly describes what we discussed earlier: As productivity grows early on, employment increases: Amazon automation allowed two-day delivery at no additional

cost, which everybody wanted, so Amazon grew extremely fast. It didn't know how to automate everything upfront, so it hired 1.6 million workers around the world. But now, demand is slowing down. Automation is catching up. Just a few years after hiring all these people, their numbers have already started dwindling in 2022 [12]. We moved from the jobs growth phase to the jobs destruction phase quite fast.

Driving

A complement to fulfillment center operators is truck driving. Up to 2017, nobody thought it would ever be automated. Then, between 2017 and 2019, everybody turned around and thought automation would be imminent. Now we've realized it's much easier to get to 99.99% reliability than 99.999999% reliability, and on the road you want the latter to avoid accidents. It turns out that humans are quite good at this level of reliability for this type of task, and AI is not there yet for tasks that require very high reliability. That doesn't mean it won't happen, as AI consistently improves. There are already robo-taxi services in some cities, and the long haul part of truck driving will soon be standard:

> *In March, a self-driving eighteen-wheeler spent more than five straight days hauling goods between Dallas and Atlanta. Running around the clock, it traveled more than 6,300 miles, making four round trips and delivering eight loads of freight. A traditional truck, whose lone driver must stop and rest each day, would need more than 10 days to deliver the same freight.*—The Long Road to Driverless Trucks.

Driving on highways is easier than in cities, so trucking will be automated there first. This might drive costs down, so that demand for overall transportation increases. As a result, employment in last-mile delivery might increase in the short term—until automation catches up there too and eliminates these jobs altogether.

What industries still have untapped demand that could be unlocked with Generative AI?

Evolution of prices across different industries since 1997. We can see that industries like education, childcare, housing, or healthcare have increased in price, making them targets for automation, but also highlighting how they've been good at avoiding automation so far. Source.

Construction

Construction has resisted automation for over a century. It's surprisingly hard to automate any part of the construction process.

But even if we did succeed, prices would only go down marginally, because the biggest driver of real estate cost is not human work, but rather land, materials, financing, permitting, commissions… So improvements in construction automation wouldn't drive prices down by much, which means demand wouldn't increase. Employment would probably go down [13].

Childcare

Childcare, meanwhile, is about to get a serious productivity boost. Pre-K children are overseen by parents, family members, childcare centers, Cocomelon, or Blippi. None of these can provide children all the personalized attention they require—as we saw with Bloom's Two Sigma problem [14].

AI could do it: Follow children's curiosity, answer their questions patiently, play mind-numbingly boring games for hours [15], push them a little every day… This would increase childcare center productivity through the roof. But in many places, regulation limits the number of children that a childcare business can take care of. The ratio of employees to children couldn't go down, and neither would costs. So these jobs might not disappear directly.

However, now parents who stay at home or family members would be in a much better position to oversee children while their AIs take care of the early education. This would allow parents [16] to work who wouldn't otherwise be able to. They would make more money while their children get a better education. If this happened, childcare centers would have lower demand, and their jobs would disappear [17].

So people might bypass this service altogether, and have children stay home—better educated and taken care of by the AI. Parents and family members might cut the need to take children to childcare, and work remotely while the AI watches the children. In any case, this is unlikely to drive an increase in employment for childcare workers [18].

There's been a recent update to the graph above, suggesting other industries that any productivity entrepreneur would try to automate:

As <u>Mike Konczal explains</u>, prices have dropped in the last 20 years most in goods, and they've increased the most in services.

Goods have seen the most deflation. I assume that's because it's easier to automate and offshore their production, and there's economies of scale in their distribution.

Services, meanwhile, have been harder to automate. As we saw, some of them will—for example parts of education, healthcare, and logistics. Others might take a long time, because they would need advanced robotics—things like water and sewage maintenance, or nursing.

Superstar Businesses

So far, we've talked about existing industries. Many will see increases in productivity that will be so fast that they will kill jobs. In other cases, there will be limitations to this growth—frequently legal—which will make that hard. But what will happen with new industries? Will their employment fill the hole? Let's see.

It's easier than ever to create a business: The cost of coding is dropping, the cost of design, analytics, hosting, content generation, marketing, sales, customer service… Anybody can spin up a business and rake in millions. This is thanks to the immense productivity gains we've seen in technology in the last few decades.

But these businesses aren't likely to employ lots of people, given how productive they will be: If they can start the business alone, it's because all these functions are automatable in the first place. It might still be valuable to hire others to scale, but not hundreds of thousands of people.

What we'll end up having is many more billionaire founders, more millionaire early employees, and not much more than that. We won't even get the distribution of wealth that companies like Google, Facebook, or Microsoft have enabled, employing tens of thousands of people and compensating at a $200k *median* salary. We're getting to a world of evermore superstar founders and employees.

Conclusion

If your job is mostly intellectual and not regulated, it's at risk.

So if you have a mostly unregulated, intellectual job, you can either get in the bandwagon of AI, start using the tools, explode your productivity, and even create your companies; or you can wait for the AI to take your job.

How fast are we getting to this world? Two rules:

1. How fast automation happens

2. What human tasks resist automation

We'll answer these two questions in this week's premium article, *How Fast Will Automation Arrive*. In two words: extremely fast because it's riding several exponential trends. It's likely a matter of years, at most decades, in some cases months.

Type your email…	Subscribe

Next week, the free article will cover why it's hard to see this emerging trend of AI unemployment in the statistics.

I hope you enjoyed this article! If you think of anybody who might be worried about losing their job to automation (or should!) share with them this article. It's also the best way you can help Uncharted Territories!

---

1   *From 800 at the peak to 600 now*

2   *At least in some cases.*

3   *You know, that sport played with a foot and a ball.*

4   *I mean, you get the point. I refuse to enter this debate!*

5   *Why are puns the only stylistic figure you're supposed to call out?*

6   *I had a very very hard time finding data on live music or musicians and how they evolved as the radio and recordings became widespread. I know I read good numbers somewhere, but can't find them anymore. So I used ChatGPT, which could only give me Vaudeville theater numbers. It quoted the source: Vaudeville Old & New: An Encyclopedia of Variety Performers in America, which is a $500 book so I didn't buy it. Part of it can be found here, but I didn't find the quote in these pages. Your editor, Shoni, found more data: In his book "The Vaudevillians: A Dictionary of Vaudeville Performers," vaudeville historian Anthony Slide estimates that there were between 800 and 1,200 vaudeville theaters in the US at the height*

of vaudeville's popularity. In an article for the Los Angeles Times, theater historian Ben Davis writes that by the end of the 1920s, the number of vaudeville theaters in the US had declined to around 300-400. If you have better data, please share it with me.

7   *And that's the cheap version. The expensive one is more like: "You need an MRI right now. I'll hospitalize you and you'll get it in two days. It's going to be $50k on your insurance, but you're not paying right?"*

8   *As you can see, since humor is a content industry, humorists have had to recycle into other industries like writing newsletters.*

9   *Maybe not even that, since blood analyses and genomics might allow the AI to diagnose and treat you faster than going to the doctor.*

10   *There are many other factors to take into account. For example, data management is a huge medical cost, both for doctors but also admins. All of these costs will go down, reducing healthcare costs and making them more affordable, increasing demand. So we might expect a shift from admin workers to healthcare workers. Another factor to consider is regulations: It's not enough to increase productivity, we need to be able to deploy this technology, but in many cases (especially in the US), this is hard. This might slow down the uptake of these productivity-improving technologies, slowing down the entire process.*

11   *This is already happening, as paralegals are being automated.*

12   *They're now at 1.54M, so 5% down. Note that Amazon is still expanding globally! This might just be a 2022 recession type of event, but usually this is the type of moment when automation progresses fast: When companies have a strong incentive to automate.*

13   *The best way to increase employment in this industry would be to reduce construction costs, which would be done mostly through laws: Permitting can be streamlined, and limits to density relaxed.*

14   *Even if they could, they would beg for mercy after 20 minutes, because children are very tiring. I would know this, I have four young ones.*

15   *The guilt transpires my words.*

16   *Usually mothers, since they still carry the brunt of this work today.*

17   *Unless laws changed and allowed higher ratios of children to educators.*

I'm not declaring that this is exactly what will happen in each of these industries. Rather, this is the logic we should use when thinking about it.

78 Comments

Write a comment…

Matt Stehle   Mar 22   ♥ *Liked by Tomas Pueyo*

This should make for interesting conversation at "Career Day" at my daughter's elementary school next week :)

The traditional format of questions: What do you? What was your career path to where you are today? Where did you go to school and what degrees did you get?

My path and current job don't feel relevant to these kids. It won't be their world. What do I say to them?

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> **3 replies by Tomas Pueyo and others**

I hate this   Mar 22   ♥ *Liked by Tomas Pueyo*

I really have a problem when we talk about AI replacing Authors and Artists like its nothing. Likewho actually wants that? who does that serve? do we sacrifice creativity to become mindless consumers?

people churning out AI generated content are often doing so for a quick buck. Which I guess the end product is not much different from typical mid level commercial art. But they don't understand that engaging with the process really is the act of creation. I guess I can see a situation where real artists and writers could use tools to speed up their work (since there is a lot of tedious stuff involved) while maintaining their artistic integrity.

But the reason a lot of artists/creatives view AI with such distain is they understand that there's no sense of control to what the AI spits out. It's not their work. It has none of them in it.

But hey, maybe we have a future where those who have the fundament skills in art/writing can put out elevated content. It's not there yet.

I'm not hopeful though. "Good enough" is good enough for the vast majority of people and companies.

Do we want to read novels and listen to music created by AI? half the appeal is to engage with the human behind the work.

♡ LIKE (3) ⬭ REPLY •••

10 replies by Tomas Pueyo and others

76 more comments…