

Is AI Coming for Your Job?

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Recently, I saw the following headlines:

- “Applied Materials Uses Automation to Shift how Finance Workers Spend Their Time¹”
- “Microsoft Keeps Its Finance Head Count Flat With AI, Bots and Other Tech²”

Combined with the other recent news about ‘worker shortages’ or the ‘Great Resignation’ it made me think—is AI ready to come for our jobs?

Step 1: What are applied materials and Microsoft really doing?

The first thing to realise, however, is that words like ‘automation’, ‘AI’, and ‘Bots’ can mean many things depending on the details and context.

The Applied Materials Case³

The overall motivation was to free up employees from repetitive work to more analytical work. Some of the items in the toolkit were robotic process automation and cloud computing. Applied Materials as a total organisation was expanding significantly, but the finance headcount was largely flat. It was cited that the firm needed to spend a lot more on research and development (R&D), and that there wasn’t budget for increased hiring in finance. A core part of the plan was to increase the skillsets of the current employees to learn new software and become more efficient as opposed to hiring more.

A bottom-line statistic that was given: the finance team was seeking to go from about 60-70% of time on data collection activity to only about 10-15% of time on data collection, with the rest spent on analysis.

The Microsoft Case⁴

Microsoft has about 5,000 employees in its finance team, a figure that has been largely flat even as the company’s operations, profits and market cap have grown tremendously. It’s clear that Microsoft has a toolkit that includes:

- Artificial Intelligence
- Bots/Virtual Agents
- Cloud computing
- Data lakes
- Machine learning

Forecasting was a great case study for the company, in that it was a process that would tend to take about three weeks at a regular frequency and would involve roughly 1,000 different people. Applying machine learning processes allowed the group to take the time down, from three weeks to about 30 minutes, and to tighten up the forecast variance, from 3.0% to 1.5%. Similar machine learning tools were used in compliance, internal audit, even to aid in the prediction of future recessions.

Virtual agents—which can recognise up to 60 languages and even recognise ‘intent’ from natural language processing—handle about 30% of 1 million different virtual queries. It’s also true that about 70% of invoices at Microsoft can be covered by machine learning, and the processing error dropped from 2% to 1% since humans no longer needed to manually type things in or do calculations.

Microsoft is well-known for bringing these types of tools to the market, whether through its Azure platform of Office 365 software, but it was interesting to see them ‘eating their own cooking’ so to speak.

Augmenting the Existing Employees Rather Than Replacing Them

In both cases, Applied Materials and Microsoft, the skills and capabilities of existing employees were enhanced but not replaced. Artificial Intelligence (AI) was not referenced as a ‘job-replacer’ in either case. Efficiency was the primary focus. It’s also worth noting that the Finance function within a typical corporation has a huge chunk of work product that lives within the software, and it may be the case that using this toolkit in the world of software is easier than in the world of three dimensions.

The Berry-Picking Problem—An AI Challenge⁵

Working on a corporate finance team in a large company might be one thing but spending twelve hours a day in fields picking fruit is quite another. Any berry-picking robot operating in a field would need to:

1. Assess the degree of ripeness, so as not to pick under-ripe fruit.
2. Grasp, but not damage the fruit.
3. Pull hard enough to detach the fruit from the stem, but not so hard as to damage the plant.

A human being can do those three things while possibly ‘day-dreaming’ about something else. A company, Agrobot, demonstrated a strawberry-harvesting robot ten years ago, and it is still just a prototype. Strawberry-picking has attracted the most attention across all fruit picking projects over the past twenty years.

Similar to how autonomous vehicles could have an easier time when new roads are built with sensors directly in them, robots in the agricultural space could have an easier time in more cutting-edge, indoor farming setups that position crops in precise ways, possibly even vertically.

Logistics & Warehouses—AI’s Gateway to the ‘Real World’ so Far⁶

If there is one avenue where AI has clearly begun to have an impact in the real world, it is warehouses. It’s notable to indicate that the adoption of more robotics has been beneficial for labour markets. Japan and South Korea are countries with very high robot penetration, and a Yale University study that looked at

Japanese manufacturing between 1978 and 2017 found that an increase of one robot per 1,000 workers boosted a company's employment by 2.2%. Research from the Bank of Korea indicated that greater adoption of robotics moved jobs from certain sectors, like manufacturing, into other sectors, but there was no decrease in overall vacancies. It'll be interesting to see if these findings begin to change in the 2020's.

Conclusion: Humans Should be Excited for the Augmentation AI can Bring to their Activities

As we write these words in early 2022, that current 'state of AI' is much more likely to lead to productivity augmentation than human workers being immediately replaced. 'Efficiency' and 'automation' are among the more commonly used expressions. It's continually exciting to see how engineers attack important, nagging problems of society through these new tools.

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1 Trentmann, Nina. "Applied Materials Uses Automation to Shift How Finance Workers Spend Their Time." Wall Street Journal. 17 February 2022.

2 Trentmann, Nina. "Microsoft Keeps Its Finance Head Count Flat With AI, Bots and Other Tech." Wall Street Journal. 10 February 2022.

3 Trentmann, 2022.

4 Trentmann, 2022.

5 Johnson, Khari. "The Elusive Hunt for a Robot That Can Pick a Ripe Strawberry." MIT Technology Review. 16 February 2022.

6 "The World Should Welcome the Rise of the Robots." Economist. 26 February 2022.

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