

Name: \_\_\_\_\_ Class: \_\_\_\_\_

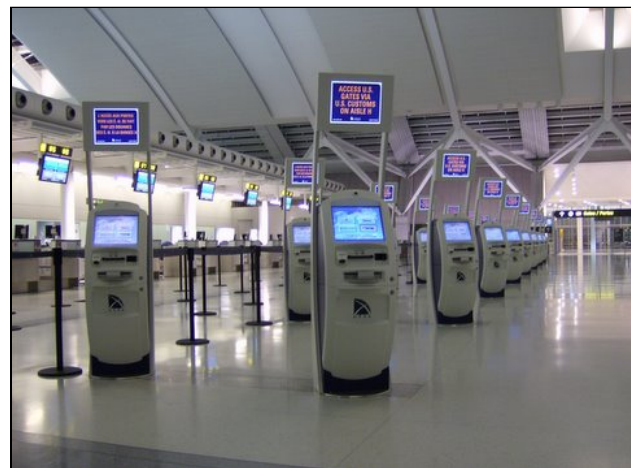
# Experts Debate: Will Computers Edge People Out Of Entire Careers?

By David Kestenbaum  
2015

*Periods of rapid technological development have long been accompanied by fears of job loss. Workers might be replaced directly by machines or indirectly by changes in the economy. Experts have differing opinions on the effects of technological advances in the workplace. As you read, note the arguments of different experts and track how they support their arguments.*

[1] Machines have been taking jobs forever. Computers and software are doing things people were paid to do. They are booking airplane flights. Filing our taxes. And they are getting better all the time.

**RENEE MONTAGNE, HOST:** Given that computers and software are doing things lots of people used to do, like booking our airplane flights and filing our taxes and getting better all the time, it's worth worrying about how many jobs will be left a few decades from now. David Kestenbaum with our Planet Money team reports there is real debate over that question.



*"HPIM0064" by Michael Kooiman is licensed under CC BY-SA 2.0.*

**DAVID KESTENBAUM, BYLINE:** It's one thing to talk about computers taking jobs, but looking out a few decades, people are talking about entire careers disappearing. If you're listening to this story driving an 18-wheeler<sup>1</sup> on I-80,<sup>2</sup> this thought has probably already occurred to you.

**ANDREW MCAFEE:** We've got cars that can drive themselves on roads in traffic without mishap.

[5] **KESTENBAUM:** Andrew McAfee is a professor at MIT.<sup>3</sup> He's definitely in the jobs-are-going-away camp.

**MCAFEE:** The accidents that Google just reported that happened with their autonomous<sup>4</sup> cars happened because other people rear-ended them and swerved into them.

**KESTENBAUM:** Truck drivers in this country - almost 2 million jobs. Cashiers - 3 million.

**MCAFEE:** It turns out people like self service a lot. I don't want to talk to somebody when I go check in at an airport. I just either download the boarding pass to my phone or walk up to a kiosk and get it.

---

1. a conversational term for a semi-trailer truck  
 2. Interstate 80 is a highway that runs from New Jersey to California.  
 3. Massachusetts Institute of Technology  
 4. **Autonomous (adjective):** acting independently or having the freedom to do so

**KESTENBAUM:** McAfee does not think computers will have anything like human intelligence in the near future, but he says if you just take where we are now and extrapolate,<sup>5</sup> to him, it's clear where we're headed.

- [10] **MCAFEE:** Twenty or 40 years from now, I believe we will not need the labor of a lot of the people alive in order to have a very, very productive economy. In terms of the amount of human labor that you need to get the stuff out of the ground and off the farms and through the factories and into our homes and tables - next to none.

**KESTENBAUM:** You do not have to go far to find someone who disagrees with Andrew McAfee, just around the corner to the office of another person at the same university.

**DAVID AUTOR:** My name is David Autor. I'm a professor of economics and associate head of the MIT Department of Economics.

**KESTENBAUM:** David Autor has been making the opposite case, the chill out, there will be plenty of jobs case. He questions the idea that computers and software will continue to get exponentially<sup>6</sup> better.

**AUTOR:** It's hard to know how fast things will change. I mean, that's our first point.

- [15] **KESTENBAUM:** OK, he says, robots can drive cars, but they still struggle with very basic tasks, like folding laundry.

**AUTOR:** The set of things that machines do not do like humans is innumerable.<sup>7</sup>

**KESTENBAUM:** And, he says, people have been worried about this forever - that machines will take away all the jobs - but those people have always been wrong, partly because they missed some basic economics. When the tractor came along, yes, it eliminated a lot of farming jobs, but it also made food cheaper, which meant people had more money to spend - new opportunities and new jobs.

**AUTOR:** So I feel it would be rather arrogant of me to say I looked at the future, and people won't come up with stuff. I don't know. I'm humbled by the fact at how bad I would have been at predicting the future.

**KESTENBAUM:** I asked Andrew McAfee about this.

- [20] David's argument is that people have been saying this is going to happen forever, and it just never has.

**MCAFEE:** He's absolutely right. The Luddites<sup>8</sup> said that. Marx<sup>9</sup> predicted it with great confidence. John Maynard Keynes,<sup>10</sup> who's one of my intellectual heroes, talked about it in the 1930s.

---

5. **Extrapolate (verb):** to form an opinion or to make an estimate about something from known facts

6. **Exponential (adjective):** characterized by extreme rapid increase

7. **Innumerable (adjective):** too many to be counted

8. The Luddites were a group of English workers who destroyed machinery, especially in cotton and woolen mills, which they believed was threatening their jobs. The term "Luddite" is commonly used to refer to a person who is opposed to technological advancement.

9. Karl Marx (1818-1883) was a philosopher, economist, sociologist, journalist, and revolutionary socialist who wrote extensively on the subject of labor and economic systems.

**KESTENBAUM:** So does it feel crazy for you to be saying no, no, no, this time, this time I mean it, and I'm right.

**MCAFEE:** Yeah, you know, you wonder if you're joining that long litany<sup>11</sup> of voices who go down as having made the incorrect prediction one more time, but I think the facts are different this time.

**KESTENBAUM:** In the past, he says, machines were basically doing mechanical stuff. This time around, they're doing things that seem much more human. They can talk. They can listen. They can even compose music.

[25] (SOUNDBITE OF MUSIC)

**KESTENBAUM:** Good job, computer. David Kestenbaum, NPR News.

*©2015 National Public Radio, Inc. News report titled "Experts Debate: Will Computers Edge People Out of Entire Careers?" was originally broadcast on NPR's Morning Edition on June 3, 2015, and is used with the permission of NPR. Any unauthorized duplication is strictly prohibited.*

---

10. John Maynard Keynes (1883-1946) was an English economist who is widely considered the founder of modern macroeconomics.

11. **Litany** (*noun*): a tedious recital or repetitive series

## Text-Dependent Questions

**Directions:** For the following questions, choose the best answer or respond in complete sentences.

1. PART A: Which of the following best identifies a central idea of the interview?
  - A. Throughout history, economists have always thought technological advances would lead to job loss — and they have always been wrong.
  - B. Most new technology comes from our desire to better our lives and work as little as possible.
  - C. Experts disagree about the effects of technological growth on our economy; some fear massive job loss, while some believe this fear is unnecessary.
  - D. While machines have made incredible gains in recent years, there is no technology that lets them compete with human workers.
  
2. PART B: Which phrase from the text best support the answers to Part A?
  - A. "I don't want to talk to somebody when I go check in at an airport. I just either download the boarding pass to my phone or walk up to a kiosk and get it." (Paragraph 8)
  - B. "You do not have to go far to find someone who disagrees with Andrew McAfee, just around the corner to the office of another person at the same university." (Paragraph 11)
  - C. "The set of things that machines do not do like humans is innumerable." (Paragraph 16)
  - D. "you wonder if you're joining that long litany of voices who go down as having made the incorrect prediction one more time, but I think the facts are different this time." (Paragraph 23)
  
3. How does the discussion of "Luddites," "Marx," and "John Maynard Keynes" in paragraph 21 contribute to the development of the ideas presented in the interview?
  - A. It strengthens McAfee's argument by showing that many intellectuals throughout history agree with him.
  - B. It shows that advances in technology have always been welcomed as a way to improve the careers of all members of society.
  - C. It proves that McAfee's argument does not consider the long history of technological advances that easily fit into the economy.
  - D. It strengthens McAfee's argument by showing that even though he is familiar with the history of this debate, he has reasons to stand firm in his position.
  
4. Which statement best describes how Autor might respond to the notion that robots will soon replace a majority of human workers?
  - A. He would disagree, pointing out that automated systems still lack the ability to do many of the things that human employees are capable of doing.
  - B. He would agree that human workers are increasingly being replaced, but he would also say that only unskilled workers are at risk.
  - C. He would disagree based on his belief that technological innovation has reached its peak, and very few things are likely to be invented in the near future.
  - D. He would agree wholeheartedly, citing evidence that certain jobs traditionally done by highly skilled humans are increasingly being taken over by robots.

5. What is Kestenbaum's main purpose in conducting this interview? Cite evidence from the text in your response.

---

---

---

---

---

---

---

---

