

The evolution of employment and skills in the age of AI

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As artificial intelligence alters work done in all manner of industries, companies and governments can help workers transition by supporting incomes and facilitating skills training.

The pressure is on for companies and governments to address the ways that artificial intelligence (AI) is altering the future of work. In this video, recorded at the Aspen Ideas Festival in June, experts—Markle Foundation CEO and president Zoë Baird; Joy Buolamwini, founder of the Algorithmic Justice League at MIT Media Lab; James Fallows, national correspondent of the *Atlantic*; and Coursera cofounder Andrew Ng—discuss how to make the transition into this new age easier for everyone.

Interview transcript

Andrew Ng: AI is the new electricity. About 100 years ago, we started rolling out electricity in the United States, and it changed every single major industry, everything ranging from healthcare and culture to transportation, communications, and manufacturing are now all electricity powered.

We now see a surprisingly clear path for AI to also transform every single major industry. Everything ranging from much better healthcare to more personalized education to much more efficient retail and manufacturing to self-driving cars. This will displace a lot of jobs, everything ranging from call-center operators to, when self-driving cars come, the millions of truck drivers and maybe taxi drivers whose jobs will be affected. But this is true for white-collar and blue-collar workers.

AI's getting really good at reading radiology images, so if any of you have a son or daughter or a friend graduating from medical school with a radiology degree, I think they might have a perfectly good 5-year career in radiology. Maybe even 10 years. But I wouldn't plan for a 40-year career doing that same radiology job today. This will create challenges and will put pressure on society to figure out solutions such as a new educational system to help those whose jobs will be displaced.

Who will become the gatekeepers of jobs in an age of artificial intelligence?

Joy Buolamwini: With the rise of automation, you definitely have conversations about jobs that are going to be lost. But I think something we're not talking as much about is who then become the gatekeepers for the jobs that are there? Even now, you have automated systems going through applications for jobs, looking for specific patterns.

Those specific patterns might reflect prejudice in selection from prior decision makers. So now what you do is you embed that prejudice, potentially, if you're not intentional about checking for bias or trying to take measures to ensure fairness. We're very much focused on data-centric technologies. In some ways, as one of my friends likes to say, data is destiny. If you have biased data, you're destined to have bias in your outcomes or your predictions if it's left unchecked.

A labor market that works for all Americans

Zoë Baird: One hundred years ago we invented the high school, but today we haven't really invented the paths to be part of this digital economy. Today the digital economy is transforming the country, and we need to create the institutions for people to be able to make that transition.

Skillful [a Markle Foundation initiative] is an effort to create a labor market that works for the 70 percent of Americans who don't have a college diploma. Our labor market now is increasingly going in the direction of requiring a bachelor's degree, a four-year degree, for most growth jobs. And we know that that isn't the singular path for people to get into those jobs. So we're working with employers to use data on what the skills are that are needed in jobs and make that data transparent and enable job seekers to understand that. We're working with coaches to help people make sense of that data and figure out what kind of training they need. We're working with educators to understand better how what they're teaching can be connected with the skills that people need for work.

Making the transition to artificial intelligence work for everyone

James Fallows: I haven't been alive for all of American history, but I've been alive for a lot of it and have read about a lot of the rest of it. The story of the US economy is of repeated dislocations and losses of jobs and people figuring out ways to have new opportunities. In my grandparents' time, most Americans were farmers, and practically no Americans are farmers now, even though it is a leading agricultural nation in the world. So [the way forward will require] making it possible both in terms of new training opportunities and of matching people with a lot of medium- or high-wage skilled jobs that are in the skilled trades that are opening up.

Zoë Baird: It's very important to focus on job-training funding and to look at the programs where we're already spending money and make sure that they can be used for a variety of training options and to let the states experiment somewhat.

But to also have data behind that that helps the states understand where the growth jobs are, what the skills are, where to make those investments. So the federal government can both direct the dollars it spends, and we need much more skills-training funding, but it can, at the same time, make those dollars spent much more wisely by enhancing the data that's available.

Joy Buolamwini: One of my major recommendations would be looking at the data sets to see how balanced they are to be representative of the people you want to serve or the types of decisions that you're trying to make.

James Fallows: Finding ways to support people's income as they make this transition from jobs that are inevitably coming under pressure, whether it's mining or retail or things involving transportation, as auto-driving vehicles come up, so that they can feel both the economic security and the psychic security to be ready for the new jobs that our economy should keep producing.

Andrew Ng: Rather than unconditional basic income, there's a different solution I favor, which is conditional basic income, but conditioned on individuals studying. I think that there's something in the dignity of work. Rather than paying people to do nothing, I would rather have society pay people to keep studying, because even though many jobs are displaced, there are so many jobs where we just can't find enough people to do that work.

If we can pay people not to do nothing but instead to study, I think this increases the odds that they'll gain the skills they need to reenter the workforce. And contribute back to the taxpayers that could contribute to this new engine of value creation for our economy. [□](#)

Zoë Baird is CEO and president of the Markle Foundation; **Joy Buolamwini** is the founder of the Algorithmic Justice League at MIT Media Lab; **James Fallows** is a national correspondent for the *Atlantic*; and **Andrew Ng** is the cofounder of Coursera.