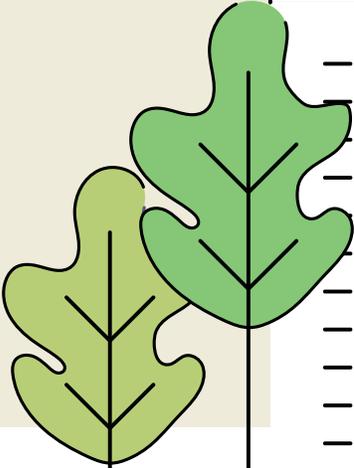


Canada's AI Learning Curve

CTOs and CIOs on the future of work at Canada's 1,000 largest firms



“Great team player,” or variations on that phrase, can be found on almost every resume and LinkedIn profile. So are things like “strong interpersonal skills,” and sometimes, “experienced team leader.”

It’s safe to say that most people probably aren’t thinking of artificial intelligence (AI) tools as members of those teams, but don’t be surprised if questions about how well you can treat them like one crop up in your next job interview, or even your next performance review.

Although experts will tell you AI isn’t necessarily going to eliminate most jobs, the way in which they will complement the way we work remains ill-defined. Part of this is because AI comes in many different forms, of course, but it’s also a matter of understanding what degree of human intervention will be required as more processes get automated.

The only thing we know for sure is that AI will force organizations of all kinds to reevaluate many of the job descriptions they’ve written to date, and that getting up to speed on working with AI will require significant professional development and training. While colleges and universities will no doubt weave AI into their core curricula over time, meanwhile, companies can’t afford to wait for the next generation of business professionals. Many of us will be taking the initiative to upskill on AI on our own.

While there are a growing number of programs to provide this kind of education, the natural next question is how steep the AI learning curve will be. In other words, how are large organizations using or planning to use AI today, what skills will be critical to job success, and how does the impact extend to those outside of data science, computer programming and other specialized fields?

CourseCompare is providing the results of this survey, which was supplemented by qualitative telephone interviews with selected tech leaders, to help answer those questions. Use the data that follows to determine your next steps, because in the end it’s not just what you put on your resume or LinkedIn profile that matters. It’s how well you understand the changing nature of the human-AI relationship--and what that means for the future of work.

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Methodology

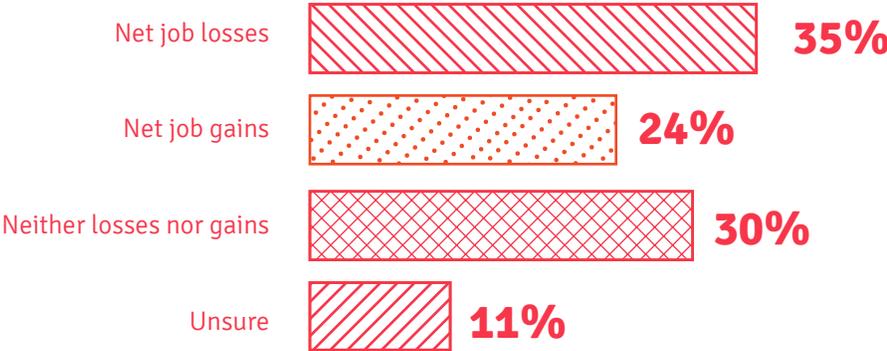
This report is based on responses from 113 Canadian CTOs and CIOs surveyed online between May 15 - June 15, 2019. The purpose of the survey was to identify the impact of AI investments on hiring trends over the next 24 months.

- The average time respondents took to complete this survey was 4.2 minutes. The median time for those who finished the entire survey was 6.8 minutes.
- Respondents were recruited through paid online channels, including LinkedIn and SurveyMonkey. Select technology executives participated in follow-up phone interviews with CourseCompare.
- Responses were accepted exclusively from professionals with “CTO” or “CIO” in their titles, and who worked at one of Canada’s 1,000 largest publicly traded companies.
- To participate in the survey, respondents had to be invested in at least one active and ongoing AI project within their company.
- CTOs and CIOs participating in this survey worked in banking, technology, manufacturing, healthcare, retail, and energy and mining industries.

How companies are changing

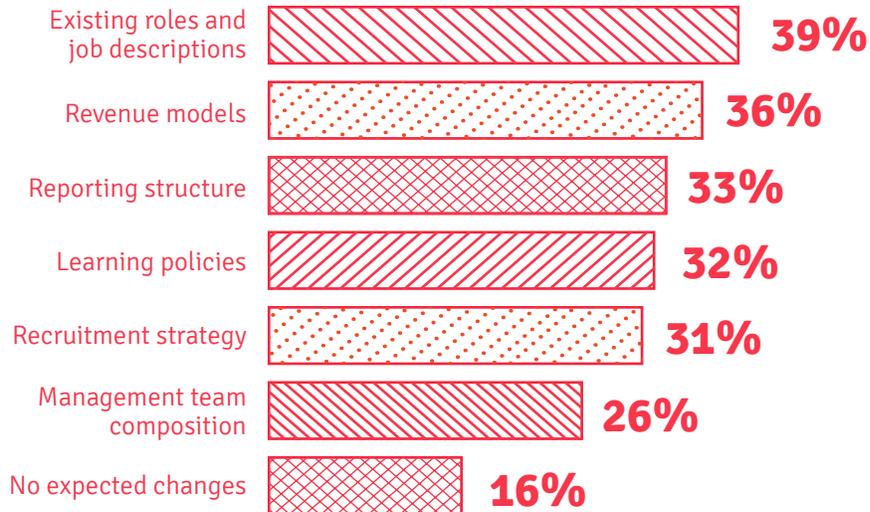
Job Automation

IT leaders agreed that at highest risk of automation are high wage jobs for which it is feasible to apply machine learning technology today. Here’s the predicted job outlook of Canadian tech execs over the next 24 months.



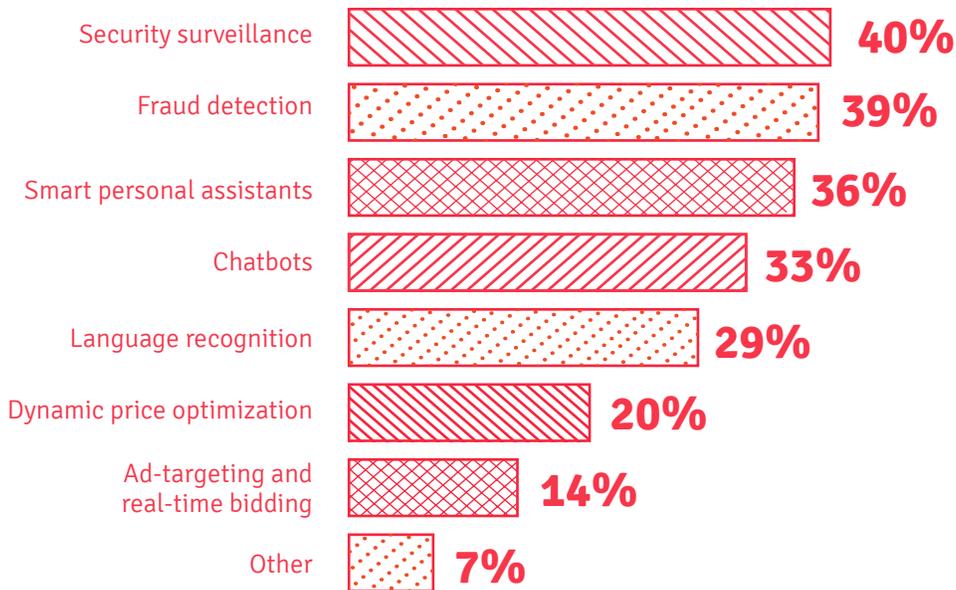
Organizational Structure

CTOs and CIOs surveyed from among Canada's 1,000 largest publicly traded companies suggested AI and machine learning will impact virtually every aspect of their organizations. Here's a breakdown of business areas which they expect to be affected by AI.



Areas of Investment

A desire to automate business processes, cut costs, increase competitiveness and guard against security threats is driving the immediate adoption of AI in the Canadian workplace. Here are the most common use cases for AI and machine learning cited by respondents.



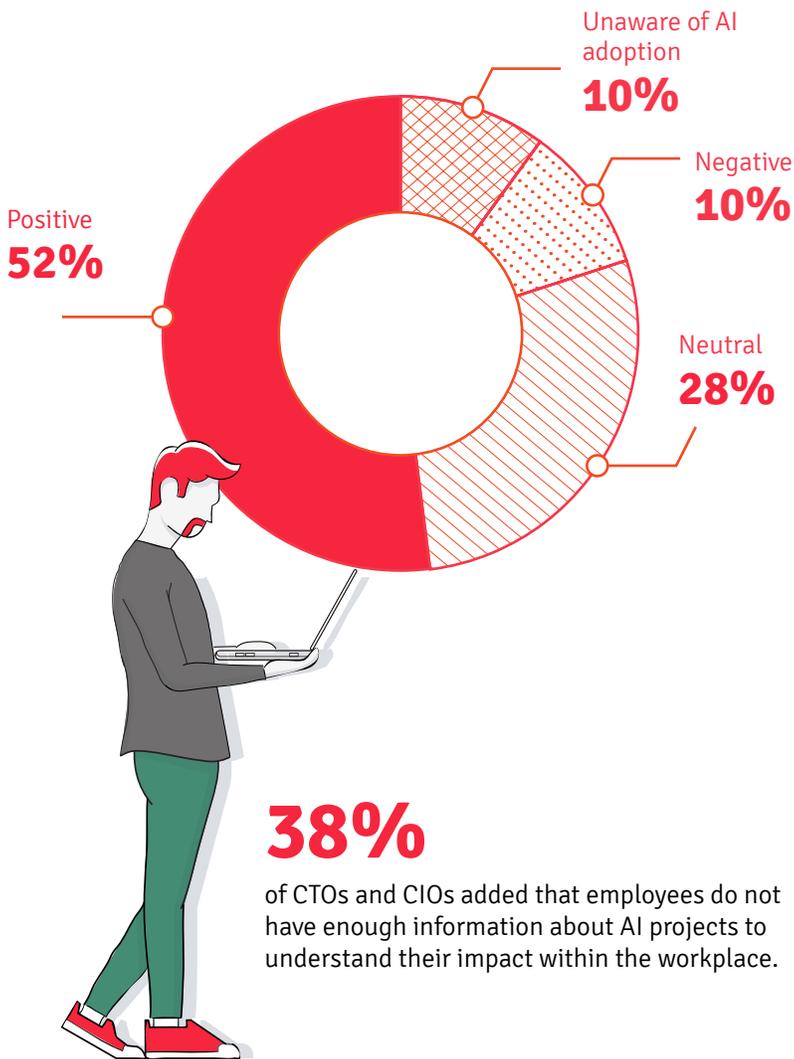
How jobs are changing

Job Redesign

IT leaders most strongly agreed that full job automation may be less of a short-term challenge than task automation and the need to “redesign” or “reengineer” existing roles. Instead of necessarily eliminating jobs, these technologies are forcing employers to reorganize the bundle of tasks that constitute different job descriptions, as well as reconsider how to structure their organizations and teams.

Employee Attitudes

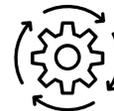
How did CTOs describe employee attitudes surrounding AI? A majority believe employees are optimistic about the future impact of AI, however, ten percent reported their teams may be unaware that AI has already been adopted within their departments.



The McKinsey Global Institute estimates half of today’s work activities could be automated by 2055. Based on 2,000 work activities at 800 occupations:



Less than 5% of paid work activities can be entirely automated using existing technologies



For 60% of occupations, at least 30% of tasks can be automated



More occupations will change than will be lost due to automation

What can current and future employees of your company do to prepare for automation?

“Increase their knowledge of data, BI, reporting, and how to use AI on the job. Understanding the business case for an AI project and how it helps our company is critical.”

“I always encourage employees to volunteer to test automation processes. That way, they can discuss what it means for the future of the company and understand how it could impact their job.”

Education, skills & training

Workers will clearly need to learn to integrate machines into work life and acquire new skills in the process. But when it comes to technical skills required to work directly on AI projects, executives reported a preference for candidates with training in advanced IT and programming, data science, data analytics, BI (Business Intelligence) and robotics.

Degree requirements for AI jobs varied widely, but nearly **71 percent of CTOs mentioned mathematics, computer science, or engineering as useful foundations for success**. Technical leaders further emphasized training in logic and algorithms, probability and statistics, data modelling and evaluation, and enough project experience to present an AI project prototype during a job interview as factors in their hiring decisions.

“Invest retraining hours into the maintenance of physical components. Software is already dangerously close to being able to improve itself.”

“We need to encourage more professional development training, more workshops and more seminars among peers who understand AI and all the people who can help translate what it means for different areas of our business.”

“Upskilling for employees in sales to gradually use AI in selling will be important. Almost everyone on the sales side will need to learn to use tools to manage calendars, analyze customer behavior and improve service.”

“For developers, the right education, showing us that you are a continuous learner, and AI project prototype demonstration make a big difference when applying for a job.”

Tools of the Trade

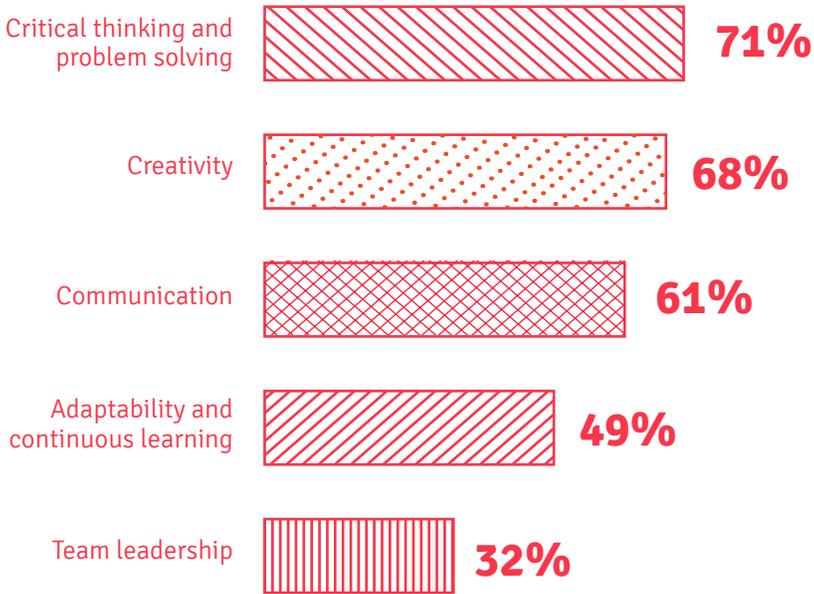
CTOs and CIOs were far from unanimous on specific tools and programming languages required to succeed on the job. Here are the tools most frequently mentioned by tech leaders.



Non-technical skills

The leading non-technical skills and attributes mentioned for machine learning hires were problem solving and innate curiosity.

CTOs and CIOs agreed the automation of routine tasks will put non-technical skills, like social and emotional skills, as well as higher cognitive skills, in greater demand for all workers. Non-technical skills most frequently identified as in-demand by tech executives included the following:



About Course Compare

CourseCompare is Canada's marketplace for education. We help prepare people for the future of work by connecting them to top-rated courses and training programs in business, technology and design.

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