Future Skills Centre | Centre des Compétences futures

Project Insights Report

From Data to Decision: AI Training and Professional Certification

PARTNERS
IVADO: The Institute for Data Valorization

LOCATIONS
Across Canada

INVESTMENT
$1,054,567

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Executive Summary

The project was a short, online certified program in artificial intelligence (AI) for professionals and leaders offered by IVADO in collaboration with the University of Montreal. The project aimed to address the current and future needs of the labour market for AI skills, and to provide a flexible and customized learning experience for the participants. The project had four main objectives: to develop a self-diagnosis tool, to develop and implement a training module of courses, to award professional certifications, and to analyze data and feedback.

The project faced some challenges and delays in course development and validation, due to the difficulty recruiting academics and professionals with AI expertise due to their high demand, the COVID-19 pandemic, and the termination of a partnership. However, the project also exceeded many of its targets despite these challenges, such as developing nine courses on six different themes, training more than 3,000 people, attracting international interest, and promoting diversity and inclusion.

The project contributed to the development and recognition of AI skills in Canada and beyond, and it responded to the current and future needs of the labour market. The project also fostered collaboration and innovation among academics, professionals, and learners, and it created a network of AI experts and enthusiasts.

KEY INSIGHTS

1. The self-diagnosis tool that allows professionals to assess their skills and needs in AI has attracted international attention.
2. The training includes a diverse portfolio of courses that covers the fundamental and specialized aspects of AI, and offers a high-quality and flexible learning experience for professionals and leaders.
3. More than 3,000 people participated in the training courses.

The Issue

AI has rapidly evolved in recent years from a concept to a transformative technological force. While still emergent in many regards, AI is already having a profound impact on most sectors of the economy and facets of the world of work. However, while many leaders and professionals recognize the potential of AI, many do not feel prepared for AI in their environment.

As a result of its rapid evolution, there is a current shortage of labour and skills related to digital and AI affecting industries and sectors across the country. The landscape is changing so rapidly that employers are struggling with identifying and actioning AI opportunities, and the skills their employees need to make these a reality.

What We Investigated

This project sought to increase the AI knowledge and skills of professionals working in Canada, with the hopes that these newly trained professionals would have positive impacts on their organization's adoption of AI.

The project partners developed and implemented a short, online, asynchronous program using massive open online courses (MOOCs), that was offered across Canada, in English and in French. Topics included:

- data science
- machine learning
- deep learning
- decision sciences
- bias, discrimination, and fairness in AI
- data science and health
- recommender systems.

The MOOCs were between 12 and 25 hours and typically offered asynchronously, giving participants some flexibility on the time and duration of the course. In addition, participants could determine and choose the courses to be taken based on their results from a self-diagnostic tool that was also developed as part of this project. Upon successful completion of the course, professionals were awarded a professional certification in collaboration with the University of Montreal.

This program was aimed in particular at mid-career professionals and leaders who could integrate the learning into their organizations. More specifically, the project aimed to train 1,000 professionals in at least one course by the end of the project. In the longer term, the program aimed to train and certify 2,000 professionals annually. In terms of diversity and inclusion, the programme aimed to promote the participation of women who are vastly underrepresented in AI and technology sectors.

What We're Learning

At the end of this project, partners had developed nine MOOCs on six different topics and more than 3,000 people were trained, with just over one quarter identifying as female and 12% of participants with no post-secondary education.

Multiple challenges delayed implementation

Despite its success, the project experienced challenges and delays. The development and validation of each MOOC required highly qualified academics and professionals, who, in addition to their teaching and research duties, were and continue to be in high demand in the job market. This skills shortage created delays in the development of some courses. The COVID-19 pandemic was also a major cause of delays as partners pivoted to virtual delivery and lockdowns restricted in-person collaboration. IVADO had difficulty finding a previously developed self-assessment tool that could serve as a basis for developing its own tool and the partner the project was planning to collaborate with in the development of this tool ended the partnership midway through the project. Despite this, once implemented, the self-diagnosis tool exceeded expectations and attracted international attention.

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Participants were more diverse in knowledge and location than anticipated

Project partners were surprised that 66% of participants who used the self-diagnosis tool were assessed as having a low awareness of AI. Partners expected that the mid-career professionals targeted by the training would have had more awareness of AI. It was also surprising that at nearly 60%, the number of international participants was almost triple the number of participants in Canada.

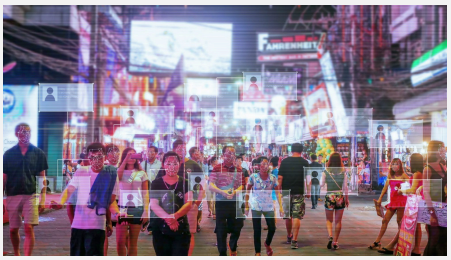
Cutting edge training requires collaboration on curriculum

The successful development of the MOOCs required highly technical expertise in artificial intelligence from academia and first-hand experience of the workplace from industry experts. Having partnerships with academia and industry allowed IVADO to produce training at the cutting edge of technology while being appropriate for mid-career professionals.

Why It Matters

AI is continuing to develop at a rapid pace, and employers large and small in Canada, across industries and sectors, need workers with skills in AI to help them keep up. The availability of these workers and these skills is a key strategy to increase productivity in Canada's transition to a net-zero economy.

The unanticipated participants in this project, specifically the majority of the trainees who came from outside Canada, begs the question of how aware Canadian workers and employers are of the need to acquire skills in AI and to do so rapidly. The latest results from the sixth wave of the Employment and Skills Survey found that 43% of workers surveyed had had no skills training in the past year. Employers paid for 24% of respondents' training, although most of this training was about workplace health and safety, versus skills for the jobs of tomorrow. Almost a third (31%) of workers surveyed paid for training themselves in the previous 12 months.



State of Skills: Unleashing AI into the Skills Development Ecosystem

To reap the benefits that AI has to offer, its adoption and deployment should be a collaborative and inclusive process that recognizes and addresses genuine concerns individuals have about AI and technology more broadly.

Read Thematic Report

This project matters because decision-makers at every level should be aware of the pressing need to upskill workers in AI across the labour market. While individual workers need to take some responsibility for their own upskilling, employers stand to benefit from these skills and need to invest more in training for current and future employees. Policymakers should be looking for ways to incentivize employers to invest in training in AI for their employees, while also supporting training organizations to continue to develop programming to meet these needs.

What's Next

IVADO plans to continue to use the self-assessment and MOOC modules developed in this project as part of the training programs it offers. IVADO continues to explore the possibility of a stand-alone professional certification, and given the international interest, training in other languages widely spoken around the world, such as Spanish.

Have questions about our work? Do you need access to a report in English or French? Please contact communications@fsc-ccf.ca.

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Canada

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