

# AI Can

## The Impact of the Pan-Canadian AI Strategy

Read the full report online:

[\*\*cifar.ca/ai/impact\*\*](https://cifar.ca/ai/impact)

October 2023



# Leading the World

The Pan-Canadian AI Strategy is delivering significant social and economic impact for Canada, with tremendous growth in our AI sector.

Driven by our world-leading talent, Canada's AI startup ecosystem has grown exponentially since 2017, with strong venture capital investment.

Through the Pan-Canadian AI Strategy at CIFAR, Canada has established a strong national AI ecosystem of talent and partnerships. This is truly the time for Canada to lead the world in the responsible development and use of this transformative technology.



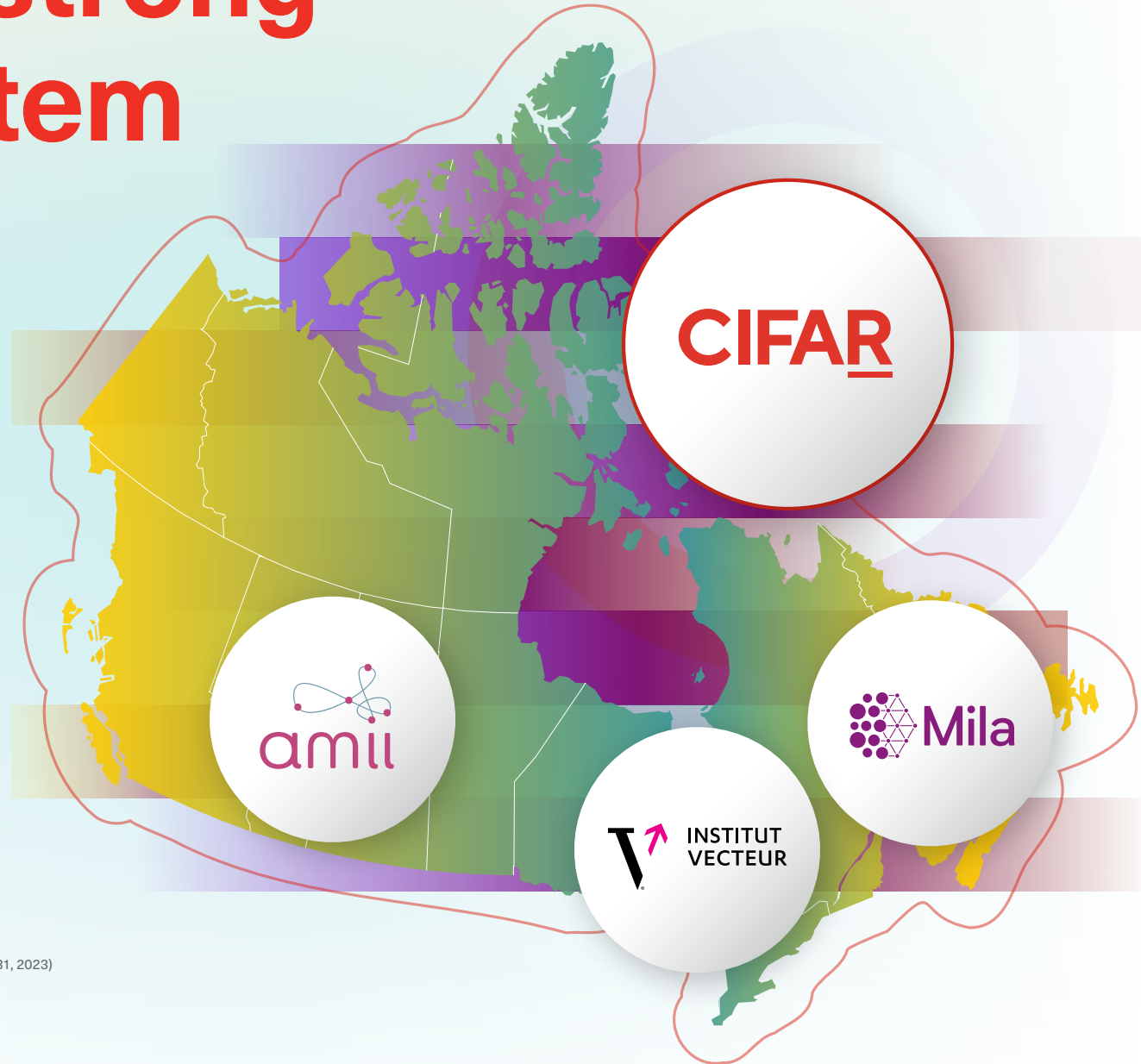
Stephen Toope, President & CEO of CIFAR, with Elissa Strome, Executive Director of the Pan-Canadian AI Strategy at CIFAR.

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# Canada's strong AI ecosystem

CIFAR works closely with Canada's three National AI Institutes, which are the central hubs of their respective AI ecosystems.

Our researchers, companies and innovators come together to advance responsible AI research and its application to areas that can benefit society and drive economic growth.



References:

<sup>1</sup> [OECD.AI Policy Observatory, AI talent concentration by country](#) (accessed May 31, 2023)

<sup>2</sup> <https://aiindex.stanford.edu/vibrancy/> (accessed May 31, 2023)

<sup>3,4</sup> [Impact and opportunities: Canada's AI ecosystem — 2023](#). (Deloitte Canada).

All National AI Institute figures in this graph are as of March 31, 2023

# 1st

Canada's ranking in the five-year average year-over-year growth of our AI talent concentration, compared to other G7 nations.<sup>1</sup>

# 5th

Canada's world ranking on the Stanford Global AI Vibrancy Index (following USA, China, India, and the UK). Since 2017, Canada has climbed from 7th place.<sup>2</sup>

# 300

Active research partnerships with industry among CIFAR and the National AI Institutes. This number has risen steadily since the launch of the Pan-Canadian AI Strategy in 2017.<sup>3</sup>

# 140,418

Number of actively engaged AI professionals in Canada in 2022-23, an estimated 29% increase over the previous year.<sup>4</sup>

# 34

Number of active Canada CIFAR AI Chairs

# 53

Number of graduate students who graduated this year and were supervised by Canada CIFAR AI Chairs, including Master's and PhD students and Post-Doctoral Fellows

# 95

Number of active partnerships between Amii and industry

# 50

Number of active Canada CIFAR AI Chairs

# 136

Number of students who graduated this year and were supervised by Canada CIFAR AI Chairs, including Master's and PhD students and Post-Doctoral Fellows

# 145

Number of active partnerships between Mila and industry

# 38

Number of active Canada CIFAR AI Chairs

# 65

Number of graduate students who graduated this year and were supervised by Canada CIFAR AI Chairs, including Master's and PhD students and Post-Doctoral Fellows

# 55

Number of active partnerships between Vector Institute and industry

# AI Science

Canada continues to be at the forefront of advancing AI science, accelerated and amplified by the Pan-Canadian AI Strategy.



**AICAN:**  
**Advance Canadian science**

▶ Watch the video at [cifar.ca/ai/impact](https://cifar.ca/ai/impact)

Golnoosh Farnadi, Canada CIFAR AI Chair, Mila

# 1

Canada's global ranking among G7 nations in the number of AI-related papers per capita, in all years since 2019.<sup>1</sup>

# 2018

Year in which CIFAR researchers Yoshua Bengio, Geoffrey Hinton and Yann LeCun were awarded the 2018 A.C.M. AM Turing Award, the "Nobel Prize of Computing" for the development of deep learning.<sup>2</sup>

# 6000+

AI related publications by Canadian-based researchers in 2022.<sup>3</sup>

References:

<sup>1,3</sup> [OECD.AI Policy Observatory, "AI scientific publications time series by country, from Scopus" \(accessed May 31, 2023\)](#)

<sup>2</sup> [Announcement, Association for Computing Machinery \(2018\)](#)

# Canada CIFAR AI Chairs

The Canada CIFAR AI Chairs program is the cornerstone of the Pan-Canadian AI Strategy at CIFAR.

Based at Canada's three National AI Institutes (Amii in Edmonton, Mila in Montréal, and the Vector Institute in Toronto), these world-leading researchers advance AI science in a range of fundamental and applied AI topics from natural language processing to drug discovery and machine learning for health, to autonomous vehicles, materials discovery, generative AI, human-AI interaction, and more.

## AMII

**Michael Bowling**, University of Alberta

**Neil Burch**, University of Alberta

**Angel Chang**, Simon Fraser University

**Mo Chen**, Simon Fraser University

**Alona Fyshe**, University of Alberta

**Russ Greiner**, University of Alberta

**Yuhong Guo**, Carleton University

**Matthew Guzdial**, University of Alberta

**Nidhi Hegde**, University of Alberta

**Jacob Jaremko**, University of Alberta

**Bei Jiang**, University of Alberta

**Linglong Kong**, University of Alberta

**Levi Lelis**, University of Alberta

**Kevin Leyton-Brown**, University of British Columbia

**Lei Ma**, University of Alberta

**Marlos C. Machado**, University of Alberta

**Rupam Mahmood**, University of Alberta

**J. Ross Mitchell**, University of Alberta

**Lili Mou**, University of Alberta

**Martin Müller**, University of Alberta

**Mijung Park**, University of British Columbia

**Patrick M. Pilarski**, University of Alberta

**Mark Schmidt**, University of British Columbia

**Dale Schuurmans**, University of Alberta; Google DeepMind

**Nathan Sturtevant**, University of Alberta

**Danica Sutherland**, University of British Columbia

**Richard Sutton**, University of Alberta

**Csaba Szepesvari**, University of Alberta

**Matthew Taylor**, University of Alberta

**Adam White**, University of Alberta

**Martha White**, University of Alberta

**James Wright**, University of Alberta

**Osmar Zaïane**, University of Alberta

**Sandra Zilles**, University of Regina

## MILA

**Aishwarya Agrawal**, Université de Montréal; Google DeepMind

**Tal Arbel**, McGill University

**Pierre-Luc Bacon**, Université de Montréal

**Dzmitry Bahdanau**, McGill University; ServiceNow Research

**Marc G. Bellemare**, McGill University; Reliant AI

**Yoshua Bengio**, Université de Montréal

**Glen Berseth**, Université de Montréal

**Danilo Bzdok**, McGill University

**Sarath Chandar**, Polytechnique Montréal

**Laurent Charlin**, HEC Montréal

**Jackie C. K. Cheung**, McGill University; BioGemetry



**Martha White, Canada CIFAR AI Chair, Amii:**  
**Tuning AI for real-world use**

Picture a water filtration system or electric storage system that is monitored and controlled by AI agents, 24/7. Drawing continuous data from their environments, the agents adjust conditions — from water flow rates to how much electricity is released into a grid — in real time, learning as they go and tuning their systems to peak efficiency. At Amii, Canada CIFAR AI Chair Martha White’s research into reinforcement learning is making this possible.



**Adam Oberman, Canada CIFAR AI Chair, Mila:**  
**Leveraging math to address AI reliability**

Generative AI models such as ChatGPT learn from large data sets with hopes that the model will choose the most efficient outcome — with unreliable results. That’s where Adam Oberman, a Canada CIFAR AI Chair at Mila, has been making an impact. Oberman creates faster, more reliable outcomes for AI agents. For example, by teaching the program to choose the shortest path to reach its conclusion, he’s made training these types of models 10 times faster.



**Jeff Clune, Vector Institute:**  
**AI that learns to improve itself**

Can AI replicate the inventiveness and creativity of natural evolutionary processes? As he works towards AI that might endlessly learn and improvise on its own, Canada CIFAR AI Chair Jeff Clune (Vector Institute) brings that eventuality ever closer. With more than 30,000 citations to date, Clune’s recent work includes an AI agent that solves ever-increasing environmental challenges that it builds for itself, and techniques for large language models to help AI agents select which skills to learn next.

## CANADA CIFAR AI CHAIRS CONT.

**Aaron Courville**, Université de Montréal

**Fernando Diaz**, McGill University;  
Google DeepMind

**Marc-Antoine Dilhac**, Université de  
Montréal

**Christophe Dubach**, McGill University

**Audrey Durand**, Université Laval

**Samira Ebrahimi Kahou**, École de  
technologie supérieure

**Golnoosh Farnadi**, McGill University

**Christian Gagne**, Laval University

**Pascal Germain**, Université Laval

**Gauthier Gidel**, Université de Montréal

**Cheng-Zhi Anna Huang**, Université de  
Montréal; Google DeepMind

**Foutse Khomh**, Polytechnique Montréal

**Simon Lacoste-Julien**, Université de  
Montréal; Samsung SAIT AI Lab Montréal

**Guillaume Lajoie**, Université de Montréal

**Hugo Larochelle**, Université de Montréal;  
Google DeepMind

**Nicolas Le Roux**, McGill University;  
Microsoft Research

**Bang Liu**, Université de Montréal

**Ioannis Mitliagkas**, Université de Montréal;  
Google DeepMind

**Eilif Muller**, Université de Montréal; CHU  
Ste-Justine Research Center

**Derek Nowrouzezahrai**, McGill University

**Tim O'Donnell**, McGill University

**Adam Oberman**, McGill University

**Christopher Pal**, École Polytechnique de  
Montréal; ServiceNow Research

**Courtney Paquette**, McGill University

**Liam Paull**, Université de Montréal

**Joelle Pineau**, McGill University; Meta AI

**Doina Precup**, McGill University;  
Google DeepMind

**Reihaneh Rabbany**, McGill University

**Guillaume Rabusseau**, Université  
de Montréal

**Siamak Ravanbakhsh**, McGill University

**Siva Reddy**, McGill University

**Catherine Régis**, Université de Montréal

**Blake Richards**, McGill University

**Irina Rish**, Université de Montréal

**David Rolnick**, McGill University

**Adriana Romero Soriano**, McGill  
University; Meta AI

**Xujie Si**, McGill University

**Dhanya Sridhar**, Université de Montréal

**Jian Tang**, HEC Montréal

**Martin Vallières**, Université de Sherbrooke

**Guy Wolf**, Université de Montréal

**Frank Wood**, University of British Columbia





**Russell Greiner, Amii:**  
**AI that makes precision medicine more precise**

When a loved one is diagnosed with late-stage cancer, they and their families are faced with decisions that all too often must be navigated without clear information about how long they might live or what could meaningfully improve their quality of life. Russell Greiner, Canada CIFAR AI Chair at Amii, is working on machine learning AI tools that can help guide patients and their caregivers, by more accurately predicting survival and advancing better care strategies.



**Jian Tang, Mila:**  
**Finding new drugs with AI**

Canada CIFAR AI Chair Jian Tang at Mila leverages machine learning and deep generative models to design proteins and molecules and find new therapeutic targets in drug discovery. Tang recently built and released two open-source AI platforms to enable community-wide small molecules and protein design, TorchDrug and TorchProtein. Pharmaceutical giant AstraZeneca has since leveraged TorchDrug to build a second drug discovery platform for their own research.



**Parvin Mousavi, Vector Institute:**  
**Unlocking AI-powered approaches to cancer treatment and detection**

Canada CIFAR AI Chair Parvin Mousavi at the Vector Institute is building powerful deep learning models capable of accurately categorizing types of cancer using mass spectrometry. The approach helps surgeons better target breast and prostate cancer while leaving non-cancerous areas intact. Mousavi's research aims to completely remove all cancer cells with minimal healthy tissue loss, reducing the need for additional surgeries and improving patient outcomes.

## VECTOR INSTITUTE

**Alán Aspuru-Guzik**, University of Toronto

**Jimmy Ba**, University of Toronto

**Shai Ben-David**, University of Waterloo

**Michael Brudno**, University of Toronto;  
University Health Network

**Juan Felipe Carrasquilla Álvarez**,  
University of Waterloo

**Wenhu Chen**, University of Waterloo

**Jeff Clune**, University of British Columbia;  
Google DeepMind

**David Duvenaud**, University of Toronto

**Murat Erdogdu**, University of Toronto

**Amir-massoud Farahmand**,  
University of Toronto

**Sanja Fidler**, University of Toronto; NVIDIA

**David Fleet**, University of Toronto;  
Google DeepMind

**Marzyeh Ghassemi**, University of Toronto

**Anna Goldenberg**, University of Toronto;  
The Hospital for Sick Children

**Roger Grosse**, University of Toronto

**Gillian Hadfield**, University of Toronto

**Xi He**, University of Waterloo

**Gautam Kamath**, University of Waterloo

**Rahul Krishnan**, University of Toronto

**Xiaoxiao Li**, University of British Columbia

**Renjie Liao**, University of British Columbia

**Chris Maddison**, University of Toronto;  
Google DeepMind

**Alireza Makhzani**, University of Toronto

**Sheila A. McIlraith**, University of Toronto

**Parvin Mousavi** **Queen's University**  
**Sageev Oore**, Dalhousie University

**Nicolas Papernot**, University of Toronto

**Gennady Pekhimenko**, University of  
Toronto; CentML

**Toniann Pitassi**, University of Toronto

**Pascal Poupart**, University of Waterloo

**Daniel Roy**, University of Toronto

**Frank Rudzicz**, Dalhousie University;  
St. Michael's Hospital; WinterLight Labs

**Sivan Sabato**, McMaster University

**Angela Schoellig**, University of Toronto

**Vered Shwartz**, University of  
British Columbia

**Leonid Sigal**, University of British  
Columbia; Beam AI

**Graham Taylor**, University of Guelph

**Anatole von Lilienfeld**, University  
of Toronto

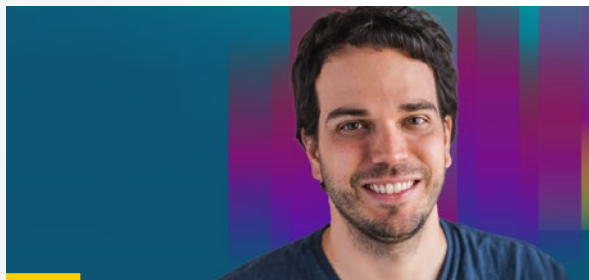
**Bo Wang**, University of Toronto

**Yaoliang Yu**, University of Waterloo

**Richard Zemel**, University of Toronto

## AI for Energy & the Environment

Read the full profiles at [cifar.ca/ai/impact](https://cifar.ca/ai/impact)



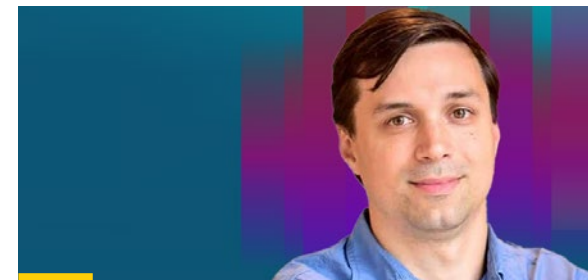
**Marlos C. Machado, Amii:**  
**Using AI to make technology smarter and cleaner**

Marlos C. Machado, Canada CIFAR AI Chair at Amii, builds reinforcement learning AI agents that discover more efficient behaviours based on their interactions with their environments. Machado has applied this work to everything from stratospheric balloons that can be used to track and forecast weather patterns and forest fires, to work with fellow Canada CIFAR AI Chairs Martha White and Adam White on AI agents in water filtration plants that optimize operations 24 hours a day.



**David Rolnick, Mila:**  
**Protecting the world's biodiversity with AI**

As a co-founder and chair of Climate Change AI, Canada CIFAR AI Chair David Rolnick (Mila) has established a global forum to better leverage AI to counter the impacts of climate change. In addition to leading high-impact scientific work in the field, Rolnick is co-leading (with Graham Taylor, a Canada-CIFAR AI Chair at the Vector Institute) the Canadian arm of an international consortium to detect and respond to changes in biodiversity caused by climate change.



**Gennady Pekhimenko, Vector Institute:**  
**AI that teaches itself to be faster and cleaner**

Machine learning programs use gigantic amounts of computing — often very inefficiently. At the Vector Institute, Canada CIFAR AI Chair Gennady Pekhimenko's research makes the models faster and more carbon friendly. Pekhimenko's startup CentML provides system-level optimizations and tools for clients to improve the efficiency of their machine learning workloads, for example by choosing the most efficient hardware to run their AI/ML models, cutting costs and guesswork from the process.

“Canada CIFAR AI Chair appointments help researchers to push forth their visions. For me to tackle the question, ‘how do I bring reinforcement learning into the real world?’ I need a larger team, and CIFAR funding helps me build that.”

**Martha White**, Canada CIFAR AI Chair, Amii

“CIFAR has helped me directly by funding my students and research. But more importantly, it has created an ecosystem that has helped AI flourish in Canada.”

**Russell Greiner**, Canada CIFAR AI Chair, Amii

# Responsible AI

Read the full profiles at [cifar.ca/ai/impact](https://cifar.ca/ai/impact)



**Alona Fyshe, Amii:**

**AI that learns the way babies do**

Using scans of infants' brains, Canada CIFAR AI Chair Alona Fyshe at Amii is creating maps of how language evolves and becomes nuanced as it is acquired. By better understanding human language models, Fyshe hopes we can learn more about AI language models and how to improve them. Additionally, Fyshe works to educate the public on the impact of AI, with a recent TedTalk that has garnered more than 1.2 million views since its February 2023 release.



**Foutse Khomh, Mila:**

**Making the world's AI safer**

Canada CIFAR AI Chair Foutse Khomh at Mila is advancing science to ensure AI systems will not create harm as they deliver benefits. A recent paper was the first to analyze the gaps between principles and practice in AI policies around the world, leading to international collaborations. Khomh also helped to launch Québec's Initiative on Trustworthy AI (Confiance IA Québec), which brings together private and public actors to co-develop methods and tools for sustainable, ethical, safe, and trustworthy AI-based systems.



**Sheila McIlraith, Vector Institute:**

**Building safe AI for the generations to come**

Sheila McIlraith, a Canada CIFAR AI Chair at the Vector Institute, wants to make AI systems human compatible — and safe. A trailblazing leader in the field of AI, McIlraith's collaboration in a first-in-Canada embedded ethics program for undergraduates at the University of Toronto aims to empower the next generation of scientists, educators, and technology developers with the knowledge, skills, and incentives to incorporate ethical considerations in the study and design of technology.

“CIFAR leverages the policy community and the private sector in truly invaluable ways for anyone looking to have an impact beyond the ivory tower.”

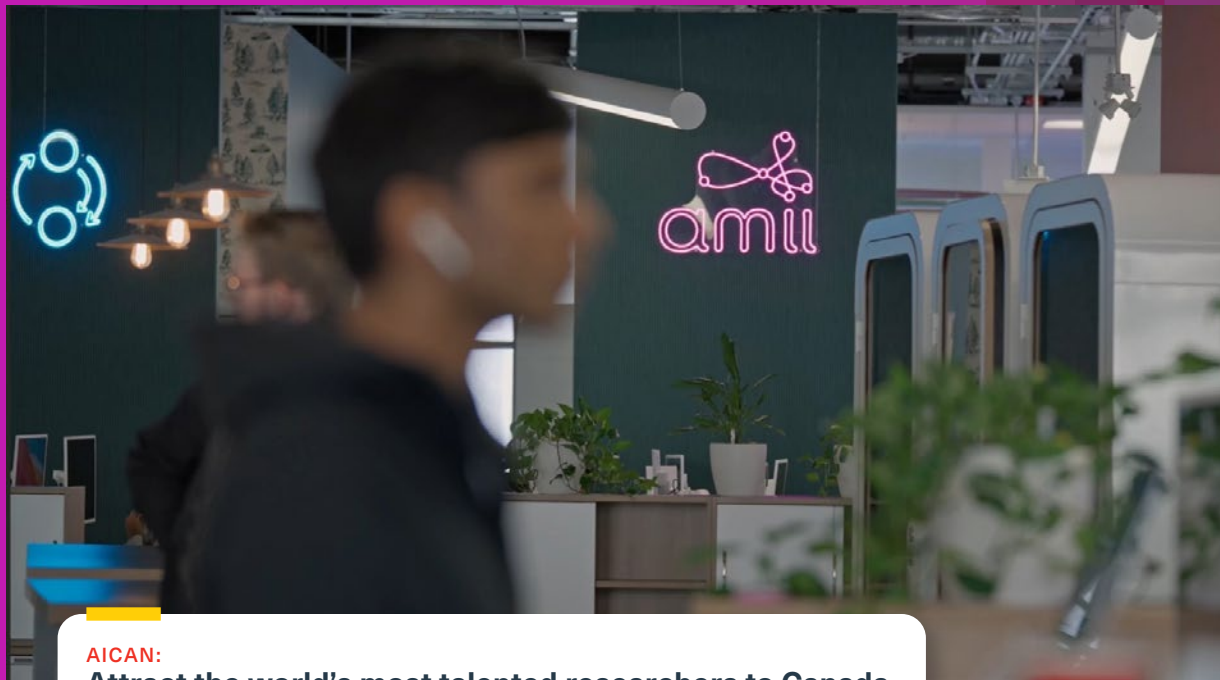
**David Rolnick**, Canada CIFAR AI Chair, Mila

“The impact of CIFAR and the Pan-Canadian AI Strategy has been significant, attracting a critical mass of exceptional AI researchers, and supporting a training environment for students that is second to none.”

**Sheila McIlraith**, Canada CIFAR AI Chair, Vector Institute

# Expanding Canada's AI Talent

Canada is well-positioned to lead the world in AI talent, with growth in our AI workforce that has continued to surpass many other G7 nations.



**AICAN:**

**Attract the world's most talented researchers to Canada**



Watch the video at [cifar.ca/ai/impact](https://cifar.ca/ai/impact)

## 2500

Early-career AI scientists trained through the CIFAR Deep Learning + Reinforcement Learning Summer School, one of the world's foremost international training programs for machine learning, since 2005.

## 38%

Average growth in Canada's cohort of AI talent each year since 2018, outpacing the United States, United Kingdom, Germany, France, and Italy.<sup>1</sup>

## 3rd

Canada's ranking for the largest pool of top-tier AI researchers in the world, with 10% of the world's most elite (top 0.5%) researchers, second only to the US.<sup>2</sup>

References:

<sup>1</sup> [OECD.AI Policy Observatory, AI talent concentration by country](#) (accessed May 31, 2023)

<sup>2</sup> [MacroPolo, "The Global AI Talent Tracker"](#) (accessed May 31, 2023)



SPOTLIGHT

## CIFAR DLRL Summer School: Showcasing Canada for the world's brightest next-gen AI talent

For nearly 20 years, CIFAR has been bringing the world's leading next-generation AI scientists to Canada each summer for the CIFAR Deep Learning + Reinforcement Learning (DLRL) Summer School. This prestigious and intensive week of training and networking drives talented young researchers to discover the next big leaps in AI science and their potential applications and impacts on society.

Since the start of the Pan-Canadian AI Strategy, hosting of the DLRL Summer School has rotated yearly among the three National AI Institutes. The 2023 edition was hosted by Mila in Montréal and

was the first to be in-person since the start of the pandemic. The event saw more than 150 early-career AI scientists from 19 countries enjoying the opportunity to learn and connect with each other in person.

Next year's DLRL will take place in Toronto at the Vector Institute, and will feature a special celebration of the school's 20th anniversary.

CIFAR's Deep Learning + Reinforcement Learning Summer School 2023 was made possible through the generous support of our sponsors and partners.

➤ Read the full story at [cifar.ca/ai/impact](https://cifar.ca/ai/impact)

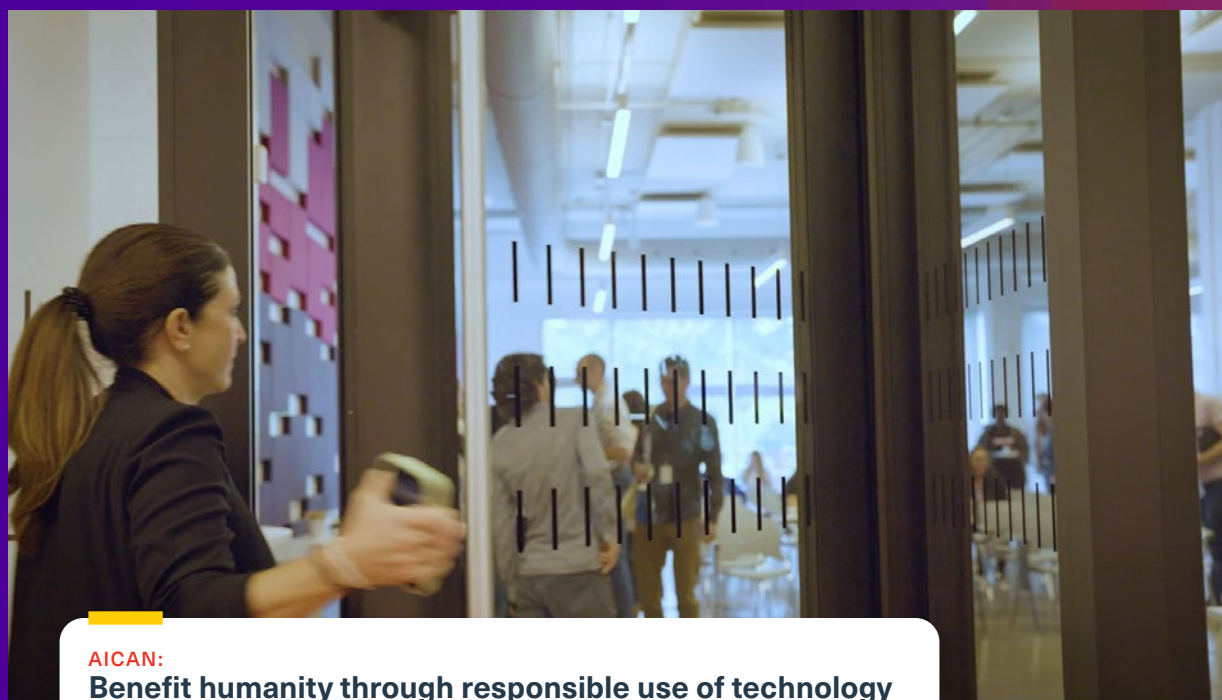


“For almost two decades, the DLRL Summer School has been a unique learning opportunity for talented next-generation researchers from everywhere in the world. We've heard from many of today's top AI scientists that it was at DLRL where they first felt inspired by the potential of machine learning to make a difference, and moreover, that they wanted to continue their work in Canada.”

**Elissa Strome**, Executive Director, Pan-Canadian AI Strategy, CIFAR

# Responsible AI

Embedded in the Pan-Canadian AI Strategy are programs to explore and address the deep and wide-ranging impacts of AI on broader society. Our researchers and partners work together to ensure the responsible, ethical, and safe deployment of AI in Canada and around the world.



AICAN:

**Benefit humanity through responsible use of technology**



Watch the video at [cifar.ca/ai/impact](https://cifar.ca/ai/impact)

## 1<sup>st</sup>

Canada's world ranking in the year-over-year percentage growth of women working in AI since 2019, including 67% in 2022-23 alone.<sup>1</sup>

## 30

Number of training programs at CIFAR and the AI Institutes that are focused on advancing equity, diversity and inclusion in AI.

## 33

Number of CIFAR events and activities to advance responsible AI since 2017.

References:

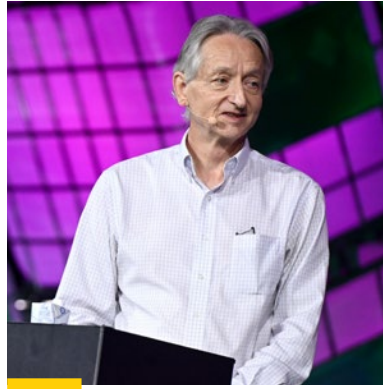
<sup>1</sup> [OECD.AI Policy Observatory, AI talent concentration by country and gender \(accessed May 31, 2023\)](#)

SPOTLIGHT

## Canada's foundational role in generative AI



Image generated using Adobe Firefly with the prompt "Robot looking in a mirror at a Canadian flag, the robot is wearing a red knitted toque and scarf." CIFAR has adopted principles for responsible use of generative AI, which includes labeling images with source and prompt.



Geoffrey Hinton, Chief Scientific Advisor, Vector Institute



Richard Sutton, Chief Scientific Advisor, Amii



Yoshua Bengio, Scientific Director, Mila  
Photo credit: Maryse Boyce

Today, one in five Canadians is using generative AI tools at work or school. Per capita, Canada is third among all nations in the G7 in total funding raised for generative AI companies, and fourth globally in the number of generative AI companies.

It was Canadian-funded research over several decades—much of it supported by CIFAR—that drove key advances behind generative AI, positioning Canada for success. This leadership continues under the scientific directors of Canada's three National AI Institutes: Geoffrey Hinton, Chief Scientific Advisor at the Vector Institute; Richard Sutton, Chief Scientific Advisor at Amii; and Yoshua Bengio, Scientific Director at Mila.

Tightly woven into research advances in generative AI is the global recognition that this technology has the potential for wide adoption, with an even stronger imperative for responsible development and deployment to mitigate the associated risks. Additionally, the world must move forward with a shared understanding of how to manage those risks through regulation.

Again, this is where Canada, supported by the Pan-Canadian AI Strategy at CIFAR, continues to lead.

➤ Read the full story at [cifar.ca/ai/impact](https://cifar.ca/ai/impact)

# AI Commercialization

Through the Pan-Canadian AI Strategy, Canada's three National AI Institutes have established dedicated programs and teams to help Canada's AI researchers turn their ideas and expertise into start-up businesses. Additionally, the institutes each partner with existing companies, large and small, to safely adopt AI in their processes, products and services.



AICAN:

**Drive growth opportunities for Canadian companies**

▶ Watch the video at [cifar.ca/ai/impact](https://cifar.ca/ai/impact)

## 670

Canadian-based AI startups with at least one USD \$1M+ investment deal in the last five years.<sup>1</sup>

## \$8.6B+

Venture capital funding invested in Canadian AI companies in 2022, a full 30% of all Canadian VC activity.<sup>2</sup>

## 57%

Growth in the number of AI patents filed nationally (2022–23), with 248 new patents. This puts Canada in the number two spot among G7 nations in annual percentage rise in patents.<sup>3</sup>

References:

1,2,3 [Impact and opportunities: Canada's AI ecosystem — 2023.](#) (Deloitte Canada).



SPOTLIGHT

## National AI Institutes propel responsible AI commercialization across Canada

CIFAR and Canada's three National AI Institutes support existing and emerging Canadian AI companies to grow beyond experiments and pilots to successful commercialization.

A recent [Deloitte report](#) on Canada's national AI ecosystem found that Canada currently ranks fifth out of 62 countries for AI "capacity" — a measure of AI scale and intensity — outpacing many G7 counterparts.

But the report also found that Canadian businesses have been slow to adopt AI solutions, compared to their international peers.

Addressing this gap, CIFAR and the three National AI Institutes work closely with a range of partners to facilitate responsible AI adoption by businesses, along with successful launches of Canadian small- and medium-sized enterprises (SMEs). All three National AI Institutes offer dedicated programs for SMEs and commercial adoption, with nearly 300 industry partners currently benefiting from the expertise at the three research hubs.

➤ [Read the full story at \[cifar.ca/ai/impact\]\(https://cifar.ca/ai/impact\)](https://cifar.ca/ai/impact)



## AI COMMERCIALIZATION

In Edmonton, Amii provides access to trusted resources and a diverse AI ecosystem by hosting events and community training opportunities that include Amii's signature events, TechAid and Upper Bound, which attract thousands of attendees from across the business and civic community. Additionally, Amii advances AI science and opportunities for world-changing commercial success through numerous SME and industry partnerships, whether through training or by embedding experts in project teams.

In 2022-23, Amii worked with 95 companies, from start-ups requiring training to accelerate AI product development, to helping SMEs and large companies identify where AI could have the highest impact in improving their existing products, systems and services.

Amii also walks the talk of responsible AI with a Principled AI Framework course that is mandatory for all staff. Amii recently teamed with the Digital Governance Council to launch an AI-governance course to empower start-ups and SMEs to develop strong, ethical governance foundations for AI-enabled products.

“The barriers to getting started in applied AI have never been lower. Now is the time to act. It is no longer a choice of whether to be involved in AI or not—it's whether to lead or be led.”

**Cam Linke**, CEO, Amii

Since 2018, Mila's experts have worked with hundreds of Canadian and international businesses and organizations through its AI Industry Services program. Mila's research experts offer advisory services to SMEs working on hands-on machine learning projects, from problem formalization to robust experimental protocols, model selection and implementation.

Mila also works with larger players on complex AI projects, equipping them for success on their AI journeys. Through short to medium-term advisory engagements, Mila's experts guide partners towards the advanced use of AI to improve their productivity and benefit society. Their team can also establish proofs of concept to help organizations capture the full value of machine learning using rigorous experimental protocols customized for project objectives.

In 2023, Mila collaborated with 115 industrial partners, locally in Québec, and across Canada and the world.

Recognizing the rich commercialization potential of its own research community, Mila additionally develops the entrepreneurial skills of its affiliated researchers to develop innovative ideas for AI applications through the Mila Entrepreneurship Lab, with 50 entrepreneurial projects launched by Mila-based researchers to date.

“With a wide range of benefits, including access to an exceptional talent pool, training and activities, and the opportunity to collaborate on projects with faculty members, Mila's partnership program empowers companies and organizations to build their AI capabilities and expertise, ultimately generating long-term value.”

**Stéphane Létourneau**, Executive Vice-President, Mila

Vector's experts work closely with industry partners in a range of collaborative programs that span large enterprise solutions to SMEs and policymaking. Vector also offers face-to-face consultations, with experts, and opportunities for individual learning through a range of upskilling initiatives.

In 2022-23, Vector was engaged in 55 active partnerships with Canadian businesses and public institutions to help ensure they have the people, skills, and resources to be best-in-class in the use of AI.

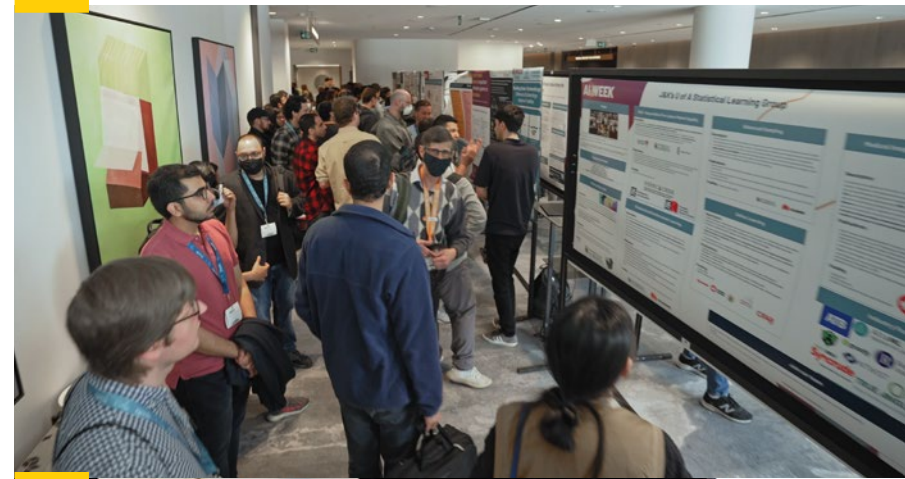
Vector's FastLane program helps small- and medium-sized businesses accelerate their AI commercialization journeys and compete more effectively in the global economy, with 175 AI SMEs currently enrolled. Through bootcamp-style project management sessions, Ask-Me-Anythings, applied AI projects and professional development, participating SMEs build the skills they need to succeed with AI. Participants learn to recruit talent, benchmark, and improve their commercialization and IP strategies. They also gain exposure to leading VCs, corporate and key stakeholders in Canada's AI innovation community.

Additionally, Vector helps to retain Ontario AI talent through the Vector Digital Talent Hub, which features AI-specific job postings, recruitment events, and career-building services.

“Working with Vector enables our industry sponsors to give their employees unique access to expert researchers, a valuable sandbox environment that allows them to try new AI techniques with their peers, and first-hand access to an AI talent pool that is in high-demand around the globe.”

**Cameron Schuler**, Chief Commercialization Officer & VP, Industry Innovation, Vector Institute

DLRL 2023 panel at Mila



Vector Institute Mind the Gap Enabling AI Deployment in Health, 2023



## About the Pan-Canadian AI Strategy at CIFAR

The Pan-Canadian Artificial Intelligence Strategy at CIFAR drives cutting-edge research, trains the next generation of diverse AI leaders, and fosters cross-sectoral collaboration for innovation, commercialization and responsible AI adoption.

Our three National AI Institutes — Amii in Edmonton, Mila in Montréal, and the Vector Institute in Toronto — are the vibrant central hubs of Canada’s thriving AI ecosystem.

Funded by the Government of Canada, we’re building a dynamic, representative, and rich community of world-leading researchers who are creating transformative, responsible AI solutions for people and the planet.

### ADDITIONAL READING

[Impact & Opportunities:  
Canada’s National  
AI Ecosystem —  
Deloitte Canada](#)

[CIFAR Impact Report  
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