12 AI TRENDS

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12 AI TRENDS

AI IS IN DEMAND

Interest in artificial intelligence (AI) has been at an all-time high for the last twelve months. Mainstream attention on this technology and its applications exploded this year, mainly due to generative AI apps such as ChatGPT and Midjourney. Suddenly, AI became the thing everyone was talking about.

During this seismic shift in the landscape of AI, Amii has continued to lead global conversations about AI and machine learning (ML) research, development, and its potential impact on our daily lives while helping companies and individuals catch up on or advance their use of this powerful technology.

This year's Impact Report explores our top 12 AI Trends: a glimpse into AI's growing popularity and highlights how Amii is leading the way in shaping a positive AI future — for good and for all.

LET'S TALK AI!
If you've got a question about AI or an idea that we might be able to help with, reach out. You can email us anytime at **hello@amii.ca**

CHATGPT

EARNED MEDIA
3.8M
IMPRESSIONS

The release of ChatGPT in November of 2022 marked a significant milestone in the evolution of AI. Within five days, the chatbot attracted more than one million users. The public was immediately taken by how advanced yet easy to use the tool was and wanted to learn more. For months, every news and media headline seemed to be about this trending topic.

ChatGPT caused a significant bump in interest in AI and our work at Amii. Amii Fellow and Canada CIFAR AI Chair **Alona Fyshe** spoke on how **ChatGPT can be incorporated into the classroom** and how the tool can elevate learning. Ross Mitchell, Amii Fellow and newly minted Canada CIFAR AI Chair, shared his work with **"mini ChatGPTs" in the healthcare system**. ChatGPT was also top of mind at Upper Bound, with Finbarr Timber's session on **"5 years of GPT"** being so popular he had to give the talk twice.

ChatGPT was, without question, the top trending topic in AI from the last twelve months. The increased interest **yielded more than 3.8 million earned media impressions about Amii globally.**

ETHICAL AI

2
AI ETHICS COURSES LAUNCHED

The increased attention on AI caused by ChatGPT also ushered in a heated debate about **AI regulation**. Every heavy hitter in the science community was weighing in on how to properly safeguard this rapidly advancing technology.

Public discourse may have earned Ethical AI the #2 spot on this year's trend list, but for Amii, responsible AI has always been a top consideration. We care and think deeply about how AI and ML research is ethically developed, adopted by industry, and taught to students, professionals, and broader society. As stewards of "AI for good and for all," it's our mandate to **preserve privacy and fairness** and **ethically leverage AI to maximize positive impact**– both now and **in the future**.

This year, we published our **Principled AI at Amii** framework, which clearly defines and provides full transparency on how Amii approaches the ethical development of AI technologies. **We also launched two new courses** **AI Ethics – Governance** and **AI Ethics – Deployment**, in partnership with the Digital Governance Council to help support others to do the same.

AI LITERACY

30,983
WORKSHOP AND COURSE PARTICIPANTS

Considering the already considerable presence AI has in our daily lives, understanding AI is no longer an asset — it's a necessity. And with AI technology quickly evolving, it's safe to say this education-focused trend is here to stay.

Capitalizing on the tech's potential requires us to be AI-ready—that is, to have the knowledge and skills to understand what AI can do and how to work with it. At Amii, **30,983 learners grew their AI literacy through our various course and training offerings last year.** Our popular Machine Learning Foundations courses (1 and 2) were made more popular this year thanks to an education grant offered by **Scale AI**. In total, more than 600 learners completed the go-to introductory ML courses and earned their LinkedIn badges by building a basic understanding of AI.

Amii also launched two new broad-based AI literacy and education programs with the announcement of the **AI Everywhere course**, a new trail-blazing AI course offered in partnership with the University of Alberta and available to all undergraduate students, and a **K-12 pilot program** aimed at equipping teachers with the resources they need to teach AI concepts in the classroom.

IN-DEMAND TALENT

189
WORK-INTEGRATED LEARNING, INTERNSHIP, & RESIDENCY PLACEMENTS

As organizations embrace and integrate AI into their businesses, the need for AI expertise grows, making the demand for a strong ML talent workforce our 4th-ranking trend.

Canada is a leading source of that in-demand global AI talent. According to Deloitte Canada's recently released **Canada's National AI Ecosystem Report**, Canada ranks #1 in AI talent concentration compared to other G7 nations. The country's cohort of AI talent rose an average of 38% YoY between 2017 and 2022-23, outpacing the United States (36% increase), the United Kingdom (34%), Germany (30%), France (29%), and Italy (28%).

Amii plays a big role in developing and nurturing Canada's AI talent pipeline. Through our work-integrated learning, internship, and residency programs, Amii helps students and recent grads build the technical and soft skills they need to be successful in their AI careers. These programs help emerging AI professionals kick-start their careers while supporting companies in sourcing the right technical talent for their ML projects. Last year, Amii connected **189 students and early-career professionals with on-the-job work experience opportunities.** Many of these led to full-time employment opportunities - a benefit to both the early-career professional and the company needing quality ML talent.

INCLUSIVE AI

81%

OF BURSARY RECIPIENTS
SELF-IDENTIFIED
AS UNDERREPRESENTED

There is an undeniable need to address diversity and inclusion challenges within the field of AI and tech more widely. Fostering diversity ensures that AI systems are created with multiple perspectives, backgrounds and experiences in mind, guarding against the perpetuation (or even magnification) of human-based bias and discrimination. It presents an opportunity to identify and correct those very forces that are often invisible to individuals, creating more equitable circumstances for people as they interact with institutions.

At Amii, we believe that AI must include all people and perspectives to reach its fullest potential. As a proud participant of the **Innovation, Science and Economic Development Canada (ISED) 50-30 Challenge**, Amii is committed to increasing opportunities for underrepresented groups to participate in the AI ecosystem. A great example of this is **Kickstart**, a free program to support women and gender-diverse individuals to explore careers in AI; the 2023 program saw a 25% increase in applicants.

Another example is Upper Bound, our annual, week-long gathering of AI professionals from around the globe. To make Upper Bound more accessible for marginalized communities, we offered a sponsor-supported **Talent Bursary Program** to help with ticket, travel, and accommodation costs. This year, the bursary program empowered 833 in-person and 676 online participants from 22 countries to attend Upper Bound at little to no out-of-pocket cost. **81% of those recipients self-identified as belonging to an underrepresented group in STEM.**

AI-ENABLED STARTUPS

91

STARTUPS HELPED
TO ADOPT OR
ADVANCE THEIR AI

Characterized by their innovative application of AI technologies across various sectors, AI-enabled startups have taken center stage in the Canadian entrepreneurial landscape. According to a recent **Deloitte report**, Canada is currently home to more than 670 AI startups. Investors recognize the disruptive potential of these emerging companies and are investing in their growth and development. That same report has Canada ranked third among G7 countries in per capita Venture Capital (VC), with the total VC investment in AI reaching $8.64 billion last year with incubator and accelerator investment seeing a 76% increase over last year.

Startup culture is baked into Amii's DNA. We work hard to **understand startup founders' unique needs and challenges** and help set them up for success in their efforts to secure investment funding. Over the last 12 months, **our dedicated Startup team supported 91 startups explore or advance their use of AI.** Amii also celebrated startups created by Amii alums, including Deon Nicholas, CEO and Founder of Forethought, **who shared his experience as a deep-tech AI founder** at Upper Bound this past year.

INDUSTRY ADOPTION

56%

INCREASE IN COMPANIES INVESTING IN AI WITH Amii

Whether it's optimizing operational efficiencies, enhancing customer experiences, or unlocking novel insights from data, AI is no longer technology limited to "tech giants." Without a doubt, **ML is revolutionizing business**, and the companies leaping in early are coming out ahead. An increasing number of companies, big and small, are successfully using AI to support their strategic priorities and solve specific business problems, such as improving customer service and automating labour-intensive activities.

As one of Canada's National AI Institutes, growing the capacity of businesses to adopt these new technologies continues to be a top priority for Amii. **Leaning into our strength of AI research and drawing a bridge into industry**, **Amii worked with 107 companies across various sectors to explore and apply AI and ML – a 56% increase over the previous year.** From real-world applications in **construction**, **supply chain**, and **energy** to **using ML to match clients with virtual assistants**, it's been exciting to see companies identify and develop AI cases that drive actual value for their businesses and consumers. We expect to see continued growth in adoption as more companies quickly realize the economic potential of AI.

ENGAGED COMMUNITY

454
COMPANY CONNECTIONS

Trend #8 examines what's required to unleash the full potential of this powerful technology — and that depends on one thing above all else: community. Supercharging the future of AI will only happen if the people involved have space to collaborate.

A thriving AI community fosters knowledge-sharing among individuals with diverse backgrounds and expertise. When community members can swap best practices and collectively solve complex problems, progress accelerates, and rapid advancement becomes the norm.

Amii is quickly becoming the go-to place for technology change-makers to convene. With the support of 19 event sponsors, we brought together more than 3,000 AI enthusiasts, scientists and professionals at Upper Bound. We also announced several new industry partnerships, including **Telus**, **Jasper Tourism**, and **New Harvest**. In total, **we connected with more than 454 companies through our product offerings, events, and speaking opportunities this year.**

Each of these connections strengthens the existing Amii community. They also help showcase how unique the Edmonton ecosystem is as a place for AI collaboration. These relationships help put Edmonton, Alberta, and Canada on the map as an active transformative technology centre: a place to be for people and companies who believe in the positive potential of AI.

SOCIAL GOOD

43
AI PARTNERSHIPS FOR SOCIAL GOOD

As AI redefines what's possible, it also presents new solutions to existing problems. AI has the power to address current and future economic, social and environmental challenges. From poverty and healthcare to environmental conservation and climate change, AI can be used to tackle complex, real-world issues.

Last year, Amii was proud to support **43 different AI projects focussed on finding practical, real-world AI applications for social good**. From **reducing hatred online**, **cleaning up the water treatment process**, and **minimizing energy use in pipeline systems** to **eco-friendly meat production** and **fighting wildfires**, Amii is proving that AI has the potential to solve social, humanitarian and environmental challenges.

We recently announced **an innovative partnership with Protein Industries Canada** that offers Canada's entire plant-based food, feed, and ingredients sector the opportunity to grow their AI literacy while exploring potential AI solutions to business problems specific to their industry. Upon completion, participating companies will be well-positioned to undertake successful ML development projects further supported by Protein Industries Canada. We love working with forward-thinking partners to find ways to use AI to create responsive, preventative, transformative solutions for a better future.

RAPID INNOVATION

471
ACTIVE RESEARCHERS AND TEAMS

What's next for AI? With the last 12 months bringing significant advancements in NLP, generative models, autonomous robots, and more, we're all wondering what the next big thing will be. Whatever it is, one thing we know for sure is that research will play a significant role.

With 471 active researchers and teams and 43 Amii Fellows embedded at universities across Western Canada, Amii is an AI research powerhouse. This year, we announced a **$30M investment to create 20 new, interdisciplinary research positions at the University of Alberta**, welcomed three new Amii Fellows, **Bailey Kacsmar, Geoffrey Rockwell, and Xingyu Li**, and celebrated the CIFAR AI Chair appointment of three existing Amii Fellows, **Linglong Kong**, **Bei Jiang, and J.Ross Mitchell**, expanding our total CIFAR AI Chair count to 36.

Amii Fellow and Canada CIFAR AI Chair **Russ Greiner was recognized this year with a lifetime achievement award from CS-Can | Info - Can** for his outstanding contributions to furthering computing science. And most recently, Amii Chief Scientific Advisor Richard Sutton announced a partnership with John Carmack of Keen AI **to focus on creating signs of artificial general intelligence (AGI) by 2030.**

AI EDUCATION

35%

INCREASE IN STUDENTS SUPERVISED BY Amii RESEARCHERS

Across the world, a new generation of aspiring AI enthusiasts is increasingly drawn to the promise and potential of AI technologies. Whether pursuing formal education, participating in AI-related competitions, or engaging in self-directed learning, students are actively immersing themselves in AI, eager to acquire the knowledge and skills required to embrace and shape the future.
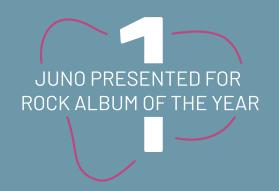
Amii is proud to support and celebrate our 301 Graduate & PhD students - a 35% increase from the year prior - as they leave their mark on the landscape of AI. Recent MSc graduate **Puyuan Liu was recognized with the 2023 Best Masters Thesis Award** by the Canadian Artificial Intelligence Association. A number of our students presented their papers at the **International Conference of Learning Representation (ICLR)** and the **International Conference on Machine Learning (ICML)**.

Some more ambitious students also accepted our one-minute research video challenge and delivered (you can watch those **here**). We also continued our **AI Seminar Series**, where AI researchers from the University of Alberta and other institutions share their research. Our popular **Tea Time Talks** summertime lecture series also returned, where emerging and prominent AI researchers discuss early-stage ideas.

AI POPSCI

1

JUNO PRESENTED FOR ROCK ALBUM OF THE YEAR

AI has moved from the fringes of popular culture to the spotlight this year. While it's been a consistent theme in SciFi for decades, it's now spilled over into everyday use and conversations – present on your favourite podcasts and even at the heart of the writers' and actors' strike. It's been a lightning rod for attention and speculation. AI in the mainstream reflects the collective fascination with AI's possibilities (and perils) and underscores its omnipresence in the cultural zeitgeist, proving that AI is not merely a buzzword but a pivotal force reshaping our world.

This year, we were thrilled to support Amii Fellow and Canada CIFAR AI Chair Alona Fyshe as she presented her **TED Talk: Does AI Actually Understand Us?** And Upper Bound **cemented Amii and Edmonton's status as an epicentre of AI** by convening an expansive AI community and welcoming everyone who has ever been curious about AI to the table to learn, discuss, and exchange ideas.

Amii also took the AI conversation beyond its regular context and brought it centre stage as the first-ever **AI Partner of the JUNO Awards**. Deepening the intersection between music and technology, Amii was proud to host a series of **JUNO Talks**. We topped off our JUNO experience by **presenting the JUNO for the Best Rock Album** to winners Alexisonfire using an AI-enabled bionic hand.

THE FUTURE IS BRIGHT

As we conclude this year's list of the top AI trends, one thing has become clear: the future of AI is undeniably bright, with the potential to revolutionize industries, enhance human capabilities, and tackle some of our most pressing global challenges. As our CEO Cam Linke mentions in his **Upper Bound keynote: The Future of AI**, AI will play a significant role in creating a positive future for all, and we, as a whole society, get to build the future we want.

There has never been a better time to build in AI. However, harnessing this potential requires more than technological prowess; it demands an increased AI understanding at every level of society. By increasing broad-based AI literacy and nurturing a culture of responsible AI development and deployment through expert advisement and programs, we can ensure that this transformative technology becomes a beacon of progress and prosperity for all — making the promise of a brighter, AI-driven world an attainable reality.

And you can be a part of it with Amii.

Explore the potential of AI for your business and **book a meeting with Amii**.

Make Amii your go-to source on all things AI, and **sign up for our newsletter**.

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TRANSFORMATION
Starts with
LEARNING

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