

AI SOVEREIGNTY AND ECONOMIC GROWTH:

Strengthening Transatlantic Leadership Between the EU and Canada





Information and Communications Technology Council Conseil des technologies de l'information et des communications Research by



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ABOUT ADRA

The Al, Data and Robotics Association (Adra) represents the private side of a publicprivate partnership with the European commission on Al, data, and robotics (ADR). Adra was established on May 21, 2021, by five prominent European organizations—Big Data Value Association, European Association for Artificial Intelligence, European Laboratory for Learning and Intelligent Systems, Confederation of Laboratories for Artificial Intelligence Research in Europe, and euRobotics.

Adra envisions a Europe leading in the development and deployment of technology, where human-technology interactions are seamless, safe, and trusted. This is a powerful vision that requires deep technology changes and the emergence of new, currently unavailable value chains in Europe to do this.

As a result, Adra's mission is to unite the European ADR communities, fostering:

- European autonomy in safe, trustworthy critical technologies;
- competitiveness through digital and green transformation;
- global research excellence;
- solutions for climate, health, energy, and security.

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EXECUTIVE SUMMARY

Artificial intelligence (AI), with its potential to revolutionize the nature of work, has and will continue to have far-reaching consequences for the global economy. It is becoming increasingly clear to governments, research institutes, and regulatory bodies around the world that the nations that successfully position themselves as leaders in Al research, development, and adoption will stand at the forefront of technological innovation for the foreseeable future. Moreover, the success of individual nations depends on international co-operation between like-minded partners. The following brief overviews current developments in the Al transformation and highlights key opportunities for collaboration, with a specific focus on the European Union (EU), and Canada.

At present, the EU and Canada each stand as leaders in differing but strategically compatible areas of AI development and can play a critical role in shaping the future of AI through their respective regulatory approaches, areas of expertise, and strategic partnerships. As AI continues to drive productivity, innovation, and industrial transformation, deeper collaboration between these regions can help each in their pursuit of responsible AI development, sustainable economic growth, and international competitiveness.

The EU is a global leader in AI governance, robotics, and industrial applications. Canada is a world leader in AI research expertise and access to critical minerals. Canada and Europe have numerous AI innovation hubs that contribute significantly to AI advancement on the world stage.

However, each is burdened by talent and skills shortages, which, without strategic policy actions and partnerships, could hamper their respective capacities to develop, deploy, and adopt Al solutions. Europe and Canada also face an evolving geopolitical landscape that is reshaping the global economy and threatening to limit access to information and communications technology inputs, including semiconductors, computational resources, and intellectual property and, in turn, advanced technologies like Al.

By aligning efforts to reskill workers, conduct world-class research, foster Al talent mobility, and ratify comprehensive Al governance approaches, the EU, and Canada can strengthen their Al ecosystems, increase their adoption rates, and reinforce their positions as global leaders.

Regulatory alignment between the EU, and Canada is essential for enabling cross-border data flows, standardizing ethical approaches to AI use, reducing compliance burdens for businesses, and improving privacy protections for consumers. Similarly, public-private partnerships play a central role in advancing AI innovation and commercialization. In this way, it is also crucial that the EU, and Canada strengthen their co-operation on AI testbeds, regulatory sandboxes, and industrial AI applications.

Mass adoption of Al will considerably impact energy demand, making it crucial for Al innovation to be accompanied by robust clean energy development and innovations in hardware efficiency. This is yet another opportunity for the EU and Canada to partner to honour sustainability commitments.

As Al adoption accelerates, it is important that the EU, and Canada continue to lean on their allies in order to balance innovation with ethical considerations. This includes joint investments in Al-driven sustainability solutions, putting in place accountability measures for violators of Al regulations, and enforcing policies that support both technological advancement and societal well-being. Through continued collaboration, the EU, and Canada can ensure that the Al transition puts the needs of people first while still bringing significant economic growth and redefining the nature of work.

BACKGROUND

Al is reshaping the global economy at a rapid pace. Countries at the forefront of ethical Al research, development, and adoption will reap economic and societal benefits in the years to come, including productivity growth and new ways to solve critical challenges in society. Countries that do not invest in Al research, development, and adoption risk falling behind. Given the rapid pace of change in Al technology and the complex physical and digital resources needed to power Al, co-operation and collaboration between like-minded countries is crucial. There is a critical opportunity for Canada and the EU to build on its existing partnership and further collaborate on ethical Al research, development, and adoption.

Canada and the EU have longstanding bilateral relations. They have advanced their co-operation through various legal and voluntary means, including the 2017 Comprehensive Economic and Trade Agreement and concurrent Strategic Partnership Agreement, which establish a framework for political, foreign policy, and security relationships and enable Canada and the EU to collaborate on key issues, like digital transitions.¹ In November 2023,² the EU and Canada also launched the Digital Partnership, spurring voluntary bilateral co-operation on Al, research, and innovation on next-generation networks, and advanced co operation on international connectivity and cybersecurity.³ These areas of co operation hold great potential for Canada and the EU as each region invests in its digital future.

In July 2024, the Government of Canada and the European Commission signed an agreement allowing Canada's enhanced participation in the Horizon Europe programme under Pillar II, which has a budget of €52.4 billion for the years 2021–2027.⁴ This enables Canadian organizations to participate in the programme on equal terms with their EU counterparts to advance research and collaboration, advance the digital economy, and tackle global challenges with the EU's leading organizations. Canada also co operates with the EU through Eureka, which promotes international co-operation among companies, research organizations, and post-secondaries to develop new research and commercial opportunities. Canada-EU collaboration is also supported by the recent agreement between the European Laboratory for Learning and Intelligent Systems and the Canadian Institute for Advanced Research to implement a cross-continental PhD and post-doctoral program.⁵

Going forward, Canada and the EU have an opportunity to grow their AI ecosystems by advancing their bilateral economic co-operation. Beyond establishing international standards for AI development and creating mechanisms for cross-border AI collaboration, the two regions have considerable opportunity to advance their research expertise through joint ventures and increase their competitiveness and commercialization outcomes in AI.

¹ Government of Canada, "Canada and the European Union (EU)," 19 June 2024, <u>https://www.international.gc.ca/world-monde/international_relations-relations_internationales/eu-ue/index.aspx?lang=eng</u>.

² Innovation, Science and Economic Development Canada, "Canada – European Union Digital Partnership," 12 December 2023, https://ised-isde.canada.ca/site/ised/en/canada-european-union-digital-partnership.

³ Innovation, Science and Economic Development Canada, "Canada and EU boost their strategic digital partnership to address new challenges," 01 February 2024, https://www.canada.ca/en/innovation-science-economic-development/news/2024/02/canada-and-eu-boost-their-strategic-digitalpartnership-to-address-new-challenges.html.

^{4 &}quot;Canada joins Horizon Europe programme," European Commission, 02 July 2024, https://ec.europa.eu/commission/presscorner/detail/en/ip_24_3626.

^{5 &}quot;ELLIS and CIFAR Join Forces to Expand ELLIS PhD & Postdoctoral Program in AI Research," European Laboratory for Learning and Intelligent Systems, 07 November 2024, <u>https://ellis.eu/news/ellis-and-cifar-join-forces-to-expand-ellis-phd-postdoctoral-program-in-ai-research</u>.

WITH INCREASED COLLABORATION IN MIND, THIS PAPER INVESTIGATES SIX TOPICS CLOSE TO THE HEART OF CANADA-EU PARTNERSHIPS ON AI, INCLUDING:

- 1. the strategic role of Al in business transformation;
- 2. regulatory approaches to ethical Al use;
- 3. skills needed for an Al-enabled economy;
- 4. just transitions to an Al-enabled economy;
- 5. An overview of Canadian and European Al hubs; and,
- 6. the role of public-private partnerships in advancing Al.

Each section concludes with a list of key opportunities for collaboration between Canada and the EU. A summary of the key opportunities for collaboration across the six topic areas is also provided in the conclusion.

THE STRATEGIC ROLE OF AI IN BUSINESS TRANSFORMATION

Al is leading innovation dialogues on the global stage, and countries have an immense opportunity to seize its transformative potential. Al leverages sophisticated algorithms and large datasets on powerful computing infrastructure to revolutionize industries across the economy. From Al-powered risk-management and content creation, to controlling complex physical systems like autonomous vehicles, Al's potential is vast. Al will reshape the scientific discovery process and change global trade flows. It drives productivity and innovation and is therefore crucial for firms to adopt to remain globally competitive.

HOW AI DRIVES PRODUCTIVITY AND INNOVATION

Al differs from other technological advances due to its enhanced potential for autonomy and self-improvement.⁶ It can enable efficiency, reduce repetitive tasks, and increase employees' capabilities while leading to increased innovation at the firm level.⁷ While Al's impact on productivity growth will depend on the rate at which businesses' processes and technologies leverage Al,⁸ at baseline, Al could contribute 1.5% in annual productivity growth over a 10-year period.⁹ The Canadian Chamber of Commerce reported that over the next 10 years generative AI could grow Canada's productivity by 1%-6%, depending on the rate of adoption.¹⁰ Firms investing in AI experience higher growth in sales, employment, and market valuations, primarily as a result of increased product innovation.¹¹

However, for a country to secure its position as a leading AI ecosystem, coordinated action across policies, institutional frameworks, and incentive structures remains imperative. Concentrating productivity gains from AI in a few sectors could lead to inelastic demand and friction, resulting in a drag on productivity growth.¹² Advancing digital infrastructure is also fundamental for the diffusion of AI technologies across industries and advancing AI ecosystems. Targeted development and adoption of AI that incorporates industry-specific knowledge is central to the sustained growth of the economy and further enablement of the AI industry.

⁶ OECD, "The impact of AI on productivity, distribution and growth," OECD AI Papers, 16 April 2024, p. 7, <u>https://www.oecd.org/en/publications/the-impact-of-artificial-intelligence-on-productivity-distribution-and-growth_8d900037-en.html</u>.

⁷ Johann Füller, Katja Hutter, Julian Wahl, Volker Bilgram, and Zeljko Tekic, "How AI revolutionizes innovation management – Perceptions and implementation preferences of AI-based innovators," Technological Forecasting and Social Change, May 2022, <u>https://doi.org/10.1016/j. techfore.2022.121598</u>.

⁸ Michael Chui, Roger Roberts, Lareina Yee, Eric Hazan, Alex Singla, and Kate Smaje et al., "The economic potential of generative AI: The next productivity frontier," McKinsey & Company, June 2023, <u>https://www.mckinsey.com/capabilities/mckinsey-digital/our-insights/the-economic-potential-of-generative-ai-the-next-productivity-frontier</u>.

⁹ Jared Cohen and George Lee, "The generative world order: AI, geopolitics, and power," Goldman Sachs Global Institute, 14 December 2023, https://www.goldmansachs.com/insights/articles/the-generative-world-order-ai-geopolitics-and-power.

¹⁰ Patrick Gill and Andrew DiCapua, "Prompting Productivity: Generative Al Adoption by Canadian Businesses," The Canadian Chamber of Commerce, 2024, <u>https://businessdatalab.ca/wp-content/uploads/2024/05/Prompting_Productivity_Report_May_2024.pdf</u>.

¹¹ Tania Babina, Anastassia Fedyk, Alex He, and James Hodson, "AI, firm growth, and product innovation," Journal of Financial Economics, January 2024, https://doi.org/10.1016/j.jfineco.2023.103745.

¹² OECD, "Miracle or Myth? Assessing the macroeconomic productivity gains from AI," OECD AI Papers, 22 November 2024, <u>https://www.oecd.org/en/</u> publications/miracle-or-myth-assessing-the-macroeconomic-productivity-gains-from-artificial-intelligence_b524a072-en.html.

THE IMPORTANCE OF AI ADOPTION FOR GLOBAL COMPETITIVENESS

Increasing costs and declining productivity mark most advanced economies.¹³ Pursuing Al adoption and advancements could enable a new era of economic growth. Labour productivity will have to accelerate for countries to achieve economic growth and for businesses to increase their competitiveness on the global scale. For example, the Organisation for Economic Co-operation and Development's 2023 Employment Outlook found that 63% of workers surveyed expressed that Al had positively impacted their work, by automating either tedious or dangerous tasks.¹⁴

Al represents a shift in how businesses can compete and create value—through Al's diverse ability to process vast amounts of data, identify patterns, and generate insights at a previously unimaginable scale and speed. Using Al to handle routine tasks—whether processing data, answering customer inquiries, or streamlining operational tasks—provides employees with increased flexibility to focus on higher-value tasks that require creative problem solving and complex decision making.¹⁵ AI will transform workforces, strengthen competition, and affect bottom lines in the near future.

Early AI adoption and commercialization correlate strongly with global market leadership.¹⁶ It is, therefore, imperative for AI ecosystems to advance domestic demand through early AI adoption. For example, the joint adoption of regulatory sandboxes (to test new AI products and their potential impacts) and AI testbeds (which enable companies to deploy technical experiments within controlled settings) can help increase early adoption.¹⁷



Figure 1: Labour Cost and Productivity Comparison, 2019 Q1–2024 Q3.

Source: Data from indexes of labour productivity and related measures, by business sector industry, seasonally adjusted—quarterly data, February 2025.

- 13 Jan Mische, Chris Bradley, Marc Canal, Olivia White, Sven Smit, and Denitsa Georgieva, "Investing in productivity growth," McKinsey Global Institute, 27 March 2024, <u>https://www.mckinsey.com/mgi/our-research/investing-in-productivity-growth</u>.
- 14 "OECD Employment Outlook 2023: Al and the Labour Market," OECD Publishing, 2023, <u>https://www.oecd.org/en/publications/oecd-employment-outlook-2023_08785bba-en/full-report/component-2.html#introduction-d5e39</u>.

- 16 OECD, "Miracle or Myth? Assessing the macroeconomic productivity gains from AI," OECD AI Papers, 22 November 2024, https://www.oecd.org/en/ publications/miracle-or-myth-assessing-the-macroeconomic-productivity-gains-from-artificial-intelligence_b524a072-en.html.
- 17 Diitri Schuurman, Laure De Cock, Martin Canter, Thomas De Meester, Olivia Willems, and Tamara De Swert, "Testing & Experimentation Facilities: Exploring the link with AI Regulatory Sandboxes, Living Labs & AI Testbeds," CitComAI, 15 October 2024, <u>https://citcom.ai/assets/uploads/Resources/AI-Testing-Experimentation-Facilities_Oct2024.pdf</u>.

¹⁵ Araz Zirar, Syed Imran Ali, and Nazrul Islam, "Worker and workplace Artificial Intelligence (AI) coexistence: Emerging themes and research agenda," Technovation, June 2023, <u>https://doi.org/10.1016/j.technovation.2023.102747</u>.

AI'S ROLE IN ADDRESSING LABOUR SHORTAGES

Organizations are deploying AI solutions to complete procedural and process-based tasks in pursuit of cost savings and solutions to overcome labour shortages. AI can be used in specific industries to divide tasks more efficiently and improve how much work gets done.¹⁸

This has varied impacts on labour. Some companies that adopt AI are restructuring their organizational workflows rather than reducing amount of employees.¹⁹ At the same time, preliminary evidence suggests that the number of entry-level technical roles is declining alongside an increase in the number of years of experience required for these roles.²⁰ Still, entry-level AI talent tends to be more optimistic and more fluent in emerging AI technologies. As a result, entry-level talent is integral to the AI transformation of organizations and represents a critical pipeline of future talent.²¹ Beyond the potential process optimization and cost savings, organizations can further optimize their workforce through workforce training and development of Al talent. Most advanced economies have an aging workforce,²² and generative Al has the potential to capture the expertise of retiring employees and transfer it to the next generation.²³ By helping to transfer knowledge, Al can help mitigate the shortage of skilled labour and retain knowledge across the organization.

Highly skilled workers have also yielded significant benefits from generative AI. Experimental research has found that generative AI can improve a highly skilled worker's performance by roughly 40%.²⁴

To conclude, Al can act as a complimentary technology to capture knowledge and enhance workers' abilities in the workforce. Countries that champion Al technologies stand to benefit from increased immigration of Al experts.

- 21 Elizabeth Lascaze, Brad Kreit, Sue Cantrell, Abha Kulkarni, and Dany Rifkin, "Al is likely to impact careers. How can organizations help build a resilient early career workforce?" Deloitte Center for Integrated Research, 04 December 2024, <u>https://www2.deloitte.com/us/en/insights/topics/talent/ai-in-the-workplace.html</u>.
- 22 "Economic Resilience" OECD, accessed 04 February 2025, https://www.oecd.org/en/topics/sub-issues/economic-resilience.html.
- 23 Mauro Cazzaniga, Florence Jaumotte, Longji Li, Giovanni Melina, Augustus J Panton, and Carlo Pizzinelli et al., "Gen-Al: Al and the Future of Work." International Monetary Fund, 14 January 2024, <u>https://www.imf.org/en/Publications/Staff-Discussion-Notes/Issues/2024/01/14/Gen-Al-Artificial-Intelligence-and-the-Future-of-Work-542379</u>.
- 24 Fabrizio Dell'Acqua, Edward McFowland III, Ethan Mollick, Hila Lifshitz-Assaf, Katherine C. Kellogg, and Saran Rajendran et al., "Navigating the Jagged Technological Frontier: Field Experimental Evidence of the Effects of Al on Knowledge Worker Productivity and Quality," Harvard Business School, 22 September 2023, https://mitsloan.mit.edu/sites/default/files/2023-10/SSRN-id4573321.pdf.

¹⁸ Mauro Cazzaniga, Florence Jaumotte, Longji Li, Giovanni Melina, Augustus J Panton, and Carlo Pizzinelli et al., "Gen-AI: Al and the Future of Work." International Monetary Fund, 14 January 2024, <u>https://www.imf.org/en/Publications/Staff-Discussion-Notes/Issues/2024/01/14/Gen-AI-Artificial-Intelligence-and-the-Future-of-Work-542379</u>.

¹⁹ OECD, "The impact of AI on productivity, distribution and growth," OECD AI Papers, 16 April 2024, <u>https://www.oecd.org/en/publications/the-impact-of-artificial-intelligence-on-productivity-distribution-and-growth_8d900037-en.html</u>.

²⁰ Elizabeth Lascaze, Brad Kreit, Sue Cantrell, Abha Kulkarni, and Dany Rifkin, "Al is likely to impact careers. How can organizations help build a resilient early career workforce?" Deloitte Center for Integrated Research, 04 December 2024, <u>https://www2.deloitte.com/us/en/insights/topics/talent/ai-in-the-workplace.html</u>.

AI'S ROLE IN ADDRESSING SUPPLY CHAIN SHORTAGES

Beyond the ability of AI to support labour force development and workforce optimization, organizations have increasingly used AI to strengthen their supply chain management. A 2022 McKinsey survey notes that AI-related cost decreases are most reported in supply chain management.²⁵ Recent technological advances like Internet of Things sensors, cloud computing, and blockchain technology have revolutionized this sector.²⁶ AI technologies can improve visibility and provide the insights and agility needed to succeed in the complex world of supply chain dynamics.

The co-development of joint initiatives that drive AI adoption across Canda's industrial strengths and leverage the EU's advanced manufacturing expertise could further cement each region's global competitiveness. Going forward, organizations that put data and interconnectedness at the core of their supply chain will be able to apply AI at scale and create a connected and intelligent supply chain.

AI IN BUSINESS TRANSFORMATION: KEY OPPORTUNITIES FOR COLLABORATION

The development of joint AI testbeds and regulatory sandboxes will be crucial for attracting innovators and keeping pace with rapidly evolving technologies. Through Horizon Europe, Canada and the EU have significant opportunities to deepen their partnership beyond basic incentive structures and sectorspecific policies.

Canada and Europe can strengthen their Al ecosystems by sharing best practices across the entire Al value chain. This includes building sovereign cloud computing capabilities, expanding their compute-hardware manufacturing base, establishing robust data management frameworks, and collaborating on Al model development and deployment strategies.

The partnership presents a unique opportunity to accelerate net zero innovations and digitalgreen solutions, particularly in clean energy development. By combining their expertise and resources, both regions can create more effective and sustainable energy systems powered by artificial intelligence. Supply chain resilience represents another key area where Canada and Europe can work together. By enhancing Industry 4.0 interconnectedness and integrating AI solutions into manufacturing processes, both regions can build more robust and adaptable supply networks that better serve their economies.

In healthcare, the Canada–EU partnership can drive significant advances in AI-powered drug discovery. Their combined efforts can also lead to the development of sophisticated AI tools that improve healthcare quality and accessibility, particularly for their aging populations. This partnership could help both regions address one of their most pressing demographic challenges while advancing their medical technologies.

The financial services sector offers yet another promising avenue for collaboration. By combining Canada's stable banking system with Europe's diverse financial marketplace, both regions can develop advanced AI-driven risk management tools, streamline operational processes, and transform capital markets through innovative technologies. This partnership could set new global standards for AI applications in finance.

25 "The state of Al in 2022 – and a half decade in review," Quantum Black by McKinsey, 06 December 2022, https://www.mckinsey.com/capabilities/guantumblack/our-insights/the-state-of-ai-in-2022-and-a-half-decade-in-review.

^{26 &}quot;Scaling AI in the Supply Chain," Accenture, November 2022, https://www.accenture.com/content/dam/accenture/final/a-com-migration/manual/r3/pdf/Accenture-Scaling-AI-In-The-Supply-Chain.pdf.

REGULATORY APPROACHES TO ETHICAL AI USE

As AI adoption has increased, so has the need for countries and international organizations to create regulatory and compliance frameworks that focus on ethical use of AI and management of data privacy. Additionally, establishing corporate governance for responsible AI use with end-to-end internal policies to mitigate biases will be of utmost importance for AI companies to advance their positioning in the marketplace. Implementing AI governance through establishing structures to address ethics, privacy, and security considerations will further build trust and support the industry to overcome adoption barriers.²⁷

Several notable frameworks have been developed to mitigate the possible negative impacts that AI may have on the nature of work and the future of privacy. Both Canada and the EU have supported the responsible advancement of AI and are founding members of the Global Partnership on Artificial Intelligence. As AI adoption continues to accelerate, governments and business leaders have become increasingly aware of the need to build regulatory and ethical scaffolding to ensure that advancements in AI do not come at the expense of users' private data.²⁸

EU ACTION ON THE ETHICAL USE OF AI

Ethical AI has been at the forefront of the EU's tech policy agenda for a number of years. In 2018, the EU instituted the General Data Protection Regulation (GDPR), becoming one of the first jurisdictions in the world to regulate AI through its rules on automated decision making.²⁹ In 2024, the EU passed the EU AI Act, a comprehensive AI governance regulation, furthering its commitment to ethical AI. The EU AI Act is the first of its kind and provides an example for other regulators to learn from.³⁰ **The General Data Protection Regulation:** While indirectly capturing AI technologies, the GDPR's focus is data protection. It formalizes seven data protection principles—including lawfulness and transparency, data minimization, and accountability—and requires organizations to receive "unambiguous consent" from end users before collecting data.³¹ It outlines technical and organizational measures that organizations should take to protect personal data—including two-factor authentication, end-to-end encryption, privacy training for employees,

^{27 &}quot;Canadian Al job market shifting, favouring specialized, in-demand skills," Vector Institute, 2024, https://vectorinstitute.ai/canadian-ai-job-market-shifting-favouring-specialized-in-demand-skills/.

²⁸ Alexandra Cutean, Rob Davidson, Mairead Matthews, and Khiran O'Neill, "Maximizing Strengths and Spearheading Opportunity: An Industrial Strategy for Canadian AI," 2021, Information and Communications Technology Council, <u>https://ictc-ctic.ca/policy-briefs/maximizing-strengths-and-spearheading-opportunity</u>.

²⁹ Ben Wolford, "What is GDPR, the EU's new data protection law?" GDPR EU, date accessed February 14, 2025, https://gdpr.eu/what-is-gdpr/.

^{30 &}quot;High-level summary of the AI Act," EU AI Act, 2024, https://artificialintelligenceact.eu/high-level-summary/.

³¹ Ben Wolford, "What is GDPR, the EU's new data protection law?" GDPR EU, date accessed February 14, 2025, https://gdpr.eu/what-is-gdpr/.

and organizational policies for data privacy and requires organizations to report data breaches to impacted data subjects within 72 hours of the breach or face penalties.³² One of the GDPR's strengths is its enforcement mechanisms: it outlines steep financial penalties, as high as \in 20 million, for violators, which apply to organizations anywhere in the world that collect data from EU residents.³³

The EU AI Act: The EU AI Act is a comprehensive AI governance regulation that categorizes AI systems based on their level of risk and imposes different obligations basedon their potential to cause harm.³⁴

- Al applications with an unacceptable level of risk are prohibited, including social scoring systems or the collection of facial data for facial recognition databases.
- > High-risk Al systems are subject to strict obligations related to risk management, data governance, technical documentation, record keeping, human oversight, accuracy, and cybersecurity.³⁵ This includes Al systems used for safety, critical infrastructure, or to profile individuals for the purposes of hiring, healthcare, law enforcement, or border control.
- Limited-risk AI systems are subject to transparency requirements, such as a requirement to inform individuals that they are interacting with AI.³⁶ This includes AI systems used to build chatbots.
- Finally, minimal-risk AI systems are not subject to any specific requirements unless they (a) involve the use of AI-generated content, in which case there is a requirement to label AI-generated content, or (b) interact with users, in which case there is a requirement to inform users that they are interacting with AI. This includes AI used to generate creative technology products.

In addition to regulating AI systems, the regulations require organizations using generative AI to label AI-generated content. They also require the providers of generalpurpose AI models to draft technical documentation about their models, including training and testing content and processes; make technical documentation available to downstream providers of AI tools; and, if the system is high risk, perform model evaluations, assess and mitigate systems risks, and ensure an adequate level of cybersecurity protection.³⁷ Like the GDPR, the EU AI Act approaches enforcement by subjecting organizations that breach the regulations to heavy fines.³⁸

The EU AI Act was the first of its kind and provides a useful learning opportunity. For instance, critics of the act note the following:

- Some types of high-risk AI systems are left out of the existing categories.
- > There are loopholes for public authorities.
- The definition the act uses for Al is too broad, causing legal uncertainty about its scope and application and limiting effective implementation and compliance.
- It may disproportionately affect startups and small and medium enterprises with administrative burdens and compliance costs, thus preventing them from innovating or adopting AI technologies.

38 Ibid.

³² Ibid.

³³ Ibid.

^{34 &}quot;Regulation (EU) 2024/1689 of the European Parliament and of the Council," Official Journal of the European Union, 2024, <u>https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A32024R1689</u>.

^{35 &}quot;High-level summary of the AI Act," EU AI Act, 2024, https://artificialintelligenceact.eu/high-level-summary/.

³⁶ Ibid.

³⁷ Ibid.

CANADIAN ACTION ON THE ETHICAL USE OF AI

Canada has long committed to the ethical advancement of AI. Examples of Canada's commitment include being a founding member of the Global Partnership on AI,³⁹ developing a voluntary code of conduct for the responsible development of advanced generative AI systems,⁴⁰ and establishing the Directive on Automated Decision-Making for federal government AI use.⁴¹ However, there is no current regulatory framework specific to AI at the industry level. On the other hand, the EU has adopted a comprehensive and prescriptive legislative approach with the EU AI Act,⁴² while the UK has chosen a flexible, adaptive crosssector and outcome-based framework.⁴³

Canada has yet to implement a comprehensive national act dedicated to Al governance. Instead, Canada's current policy concerning the ethical use of data relies on privacy legislation that implicitly includes Al but does not make specific provisions related to Al. For instance, the Personal Information Protection and Electronic Documents Act (PIPEDA) remains a key piece of policy for Al governance in Canada. PIPEDA governs the use and collection of personal information for commercial activities and ensures that organizations collect data with informed consent from users.⁴⁴ Due to PIPEDA's somewhat limited applicability to AI, many privacy experts believe current protections to be insufficient.⁴⁵ Although PIPEDA remains relevant to AI governance, it fails to account for the full breadth of foreseeable risks AI poses in regards to the privacy and protection of personal data collected by AI models.⁴⁶

In June 2022, the Government of Canada tabled the Al and Data Act, which was part of Bill C-27 (the Digital Charter Implementation Act, 2022). Bill C-27 represents Canada's first attempt to establish a comprehensive Al regulatory framework.⁴⁷ Bill C-27 outlined specific obligations for private sector entities engaged in AI development and implementation, signalling a decisive move toward structured oversight of Al systems. Additionally, Bill C-27 would have reformed Canada's federal privacy sector privacy law by replacing PIPEDA with the Consumer Privacy Protection Act. When Canada's parliament prorogued in January 2025, Bill C-27 had not yet received royal assent and was terminated.⁴⁸ Whether Canada will develop a new act or reinstate Bill C-27 remains to be seen. In the interim, the provinces of Ontario, Alberta, and Québec have redeveloped provincial legislation to strengthen privacy protections with data use and sharing.49

³⁹ "Global Partnership on AI," GPAI, accessed January 30, 2025, https://gpai.ai/..

^{40 &}quot;Voluntary Code of Conduct on the Responsible Development and Management of Advanced Generative AI Systems," Innovation, Science and Economic Development Canada, 2023, <u>https://ised-isde.canada.ca/site/ised/en/voluntary-code-conduct-responsible-development-and-management-advanced-generative-ai-systems</u>.

^{41 &}quot;Directive on Automated Decision-Making," Government of Canada, modified 2023, https://www.tbs-sct.canada.ca/pol/doc-eng.aspx?id=32592.

⁴² Secretary of State for Science, Innovation and Technology by Command of His Majesty, "A pro-innovation approach to AI regulation: government response," Department for Science, Innovation & Technology, 2024, <u>https://www.gov.uk/government/consultations/ai-regulation-a-pro-innovation-approach-policy-proposals/outcome/a-pro-innovation-approach-to-ai-regulation-government-response.</u>

^{43 &}quot;Recommendation of the Council on AI," OECD Legal Instruments, 2019, https://legalinstruments.oecd.org/en/instruments/OECD-LEGAL-0449.

^{44 &}quot;Personal Information Protection and Electronic Documents Act," Government of Canada, modified 2025, <u>https://laws-lois.justice.gc.ca/eng/acts/p-8.6/FullText.html</u>.

⁴⁵ "A Regulatory Framework for AI: Recommendations for PIPEDA Reform," Office of the Privacy Commissioner of Canada, 2020, <u>https://www.priv.gc.ca/en/about-the-opc/what-we-do/consultations/completed-consultations/consultation-ai/reg-fw_202011/.</u>

⁴⁶ Ibid.

⁴⁷ Innovation, Science and Economic Development Canada, "Al and Data Act," 27 September 2023, <u>https://ised-isde.canada.ca/site/innovation-better-</u> canada/en/artificial-intelligence-and-data-act.

^{48 &}quot;Prorogation's Digital Impact: Canada's Digital Bills Set to Die on the Order Paper," Fasken, 14 January 2025, <u>https://www.fasken.com/en/knowledge/2025/01/prorogations-digital-impact</u>.

⁴⁹ White & Case, "Al Watch: Global regulatory tracker - Canada," 16 December 2024, https://www.whitecase.com/insight-our-thinking/ai-watch-globalregulatory-tracker-canada.

With Bill C-27 no longer on the horizon, Canadian policymakers have an opportunity to further engage with Al leaders and privacy experts to modernize Canada's legislative framework and align it with the digital age. At the same time, while a robust legal framework for governing the risks associated with Al is crucial, over-regulation could hamper innovation in the space.⁵⁰ Al regulation clearly needs increased transparency and accountability, embedded privacy protections, and more robust safeguards to prevent re-identification of de-identified data. But Al regulation also calls for a technologyneutral regulatory approach, which would allow legislation to adapt to technological advancements and changes; stresses the need of an evolving framework.⁵¹ There remains much to be done regarding Al governance in Canada, but there are opportunities for Canadian policymakers to take notes from comprehensive policy actions put into place in the EU.

51 Ibid.

⁵⁰ Rob Davidson, Kiera Schuller, and Mairead Matthews, "Harnessing the Benefits of Al While Reducing the Harms," Information and Communications Technology Council, 2020, <u>https://ictc-ctic.ca/reports/harnessing-benefits-ai-while-reducing-harms</u>.

UK ACTION ON THE ETHICAL USE OF AI

The UK's "pro-innovation" approach to AI regulation, which was first announced in March 2023, provides yet another perspective.⁵² The UK's framework identifies five principles to guide and inform responsible AI development: safety, security, and robustness; appropriate transparency and explainability; fairness; accountability and governance; and contestability and redress. Instead of implementing these principles through new regulation, the UK is relying on the existing authority and scope of multiple regulatory bodies to avoid a rigid regulatory environment and not stifle innovation. These regulatory bodies include the Bank of England, Competition and Markets Authority, Equality and Human Rights Commission, Financial Conduct Authority, Health and Safety Executive, and Office for Nuclear Regulation.

The government acknowledges that existing regulators have domain expertise in their own industries and sees this domain knowledge as critical to developing a sound approach to Al governance. Regulators can introduce a range of measures to ensure Al systems are technically secure and function reliably as intended. For example, regulators can publish guidance, adopt technical standards, develop techniques, or implement laws or regulations. Regulators are also expected to clarify existing routes to contestability and redress that would be easily available and accessible for citizens. Such a private right of action is not expressly provided by the EU AI Act, which would be key to ensuring the correct implementation of the regulation.

While the decentralized approach gives regulators the freedom to implement an approach tailored to their jurisdiction, the absence of a centralized approach raises the risk of different interpretations by regulators, legal uncertainty, and unaddressed AI system risks. To help regulators implement the principles and ensure a "coherent" regulatory landscape, the government established a centralized function: the Department for Science, Innovation and Technology.⁵³ The unit helps regulators understand the risks associated with Al, publishes guidance on implementing the five principles, and locates gaps in existing regulatory approaches.

The rationale behind this sectoral focus is to stay agile and to actively support innovation while addressing risks and public concerns by letting UK regulators create, if needed, domainspecific interventions. The aim of the UK's approach is to remain an adaptive, innovation-focused jurisdiction for Al developers, whereas the EU and Canada's proposed framework provides more of a holistic regulatory framework with a central governance structure.

⁵² Secretary of State for Science, Innovation and Technology by Command of His Majesty, "A pro-innovation approach to AI regulation," Department for Science, Innovation & Technology, 2023, p. 20, <u>https://assets.publishing.service.gov.uk/media/64cb6ad12322ce000dcd23bc/a-pro-innovationapproach-to-ai-regulation-amended-print-ready.pdf</u>.

^{53 &}quot;Implementing the UK's AI Regulatory Principles: Initial Guidance for Regulators," Department for Science, Technology and Innovation, February 2024, <u>https://assets.publishing.service.gov.uk/media/65c0b6bd63a23d0013c821a0/implementing_the_uk_ai_regulatory_principles_guidance_for_regulators.pdf</u>.

PROMOTING ETHICAL USE OF AI: KEY OPPORTUNITIES FOR COLLABORATION

Given the breadth of Al's present and future capabilities, it is increasingly important that Al regulations are harmonized at the international level for the sake of public safety, trade between regions, and the ethical development of Al systems. At present, Canada lacks a comprehensive regulatory approach to Al and thus, by extension, lacks interoperability with other jurisdictions, like the UK and the EU. Meanwhile, the EU's comprehensive approach may limit its interoperability with flexible regions like the UK or deter international firms from engaging in Al research and development in the EU.

This presents both jurisdictions with key opportunities to align their approaches to Al governance with one another and other prominent jurisdictions internationally, which would help facilitate collaboration between the regions. Canada's proposed Al and Data Act includes provisions that align with the EU's Al Act, like its risk-focused approach; however, the two differ in scope, approach, and definition of Al, and the EU Al Act has considerations for prohibited Al systems and complaint rights that Canada's act does not.⁵⁴ In addition to the need for convergence of Al governance approaches, it is important that privacy protections are strategically aligned to facilitate the seamless flow of data, standardize privacy standards, and mitigate risks associated with the collection, use, and disclosure of personal data on the part of Al systems and their developers. On this note, recent attempts in Canadian policy to update and modernize Canada's privacy standards provide opportunities to align with privacy standards in both the EU and the UK.

PIPEDA currently has adequacy status under the EU's GDPR.⁵⁵ However, Canada could bring its legislation more closely in line with the EU by implementing several changes. These include establishing more comprehensive requirements for how organizations collect and use data. They also include granting the privacy commissioner of Canada stronger enforcement powers. By strategically aligning new legislation with both the EU's GDPR and the UK's GDPR, Canada could enable smoother cross-border data flows. This alignment would also reduce compliance burdens for international businesses and potentially strengthen consumer trust.

⁵⁴ Charles S. Morgan, Pierre Dushime, and Connor Di Chiro, "10 Key Takeaways: Navigating the Future of Al Law: Understanding the EU Al Act and AIDA," McCarthy, 2024, <u>https://www.mccarthy.ca/en/insights/blogs/techlex/10-key-takeaways-navigating-future-ai-law-understanding-eu-ai-act-and-aida</u>.

⁵⁵ Sasha Coutu and Jen Rees-Jones, "Canada's PIPEDA remains 'adequate' under the GDPR: what it means for business," Dentons Data, 2024, https:// www.dentonsdata.com/canadas-pipeda-remains-adequate-under-the-gdpr-what-it-means-for-business/.

SKILLS NEEDED FOR AN AI-ENABLED ECONOMY

A highly skilled talent pool is crucial to facilitating the large-scale development and adoption of AI. An AI-enabled economy has far-reaching consequences for all sectors of the economy and requires increased AI literacy for non-technical workers and a highly skilled technical workforce.

Concerning technical skills to build Al, ICTC's research and engagements across the AI sector identify the importance of foundational, transferable skills in key areas such as cloud computing, coding, and data manipulation. Subject matter experts stress the growing importance of interpersonal skills, particularly communication (for project management and cross-functional responsibilities), problemsolving, and curiosity. The job market has already reacted to the increasing importance of AI talent as evidenced by growing demand for AI skills-research by the Vector Institute, in partnership with the Future Skills Centre, shows that from 2018 to 2023, demand for "core Al skills" increased by 37%.56

Specific skill sets are also needed to oversee Al tools. These include skills commonly associated with social scientists, ethicists, auditors, lawyers, and more.⁵⁷ The development of these skills and roles is and will continue to be greatly important given that Al is poised to transform huge swaths of the economy and impact significant portions of both the Canadian and European workforces.

Both the EU and Canada recognize that widespread AI adoption requires significant workforce upskilling. However, while 73% of respondents to Deloitte's 2024 Global Human Capital Trends survey said that "it is important to ensure that human capabilities in the organization keep pace with technological innovation," only 9% said they had made progress in this respect.⁵⁸ At present, approximately 13% of EU enterprises currently use AI technologies,⁵⁹ but 80% of respondents to a 2021 survey by Bruegel reported that financial constraints and skills shortages in both the labour market and their internal workforce were the biggest barriers to increased AI adoption.⁶⁰

These findings are further corroborated by new research from the World Economic Forum, which involved more than 1,000 employers "representing more than 14 million workers across 22 industry clusters and 55 economies." Eight in 10 (81%) surveyed employers from Europe's biggest economy, Germany, reported that they plan to hire staff with tech- and Al-related skill sets, while 54% of surveyed European business leaders expect worsening

⁵⁶ The Conference Board of Canada, "Al Talent in Canada: Emerging Al Skills and Future Workforce," The Conference Board of Canada, 2024, https://vectorinstitute.ai/wp-content/uploads/2024/10/Final-From-CBoC-website_ai-talent-canada_oct2024.pdf.

⁵⁷ Alexandra Cutean, Rob Davidson, Mairead Matthews, and Khiran O'Neill, "Maximizing Strengths and Spearheading Opportunity: An Industrial Strategy for Canadian AI," 2021, Information and Communications Technology Council, <u>https://ictc-ctic.ca/policy-briefs/maximizing-strengths-and-spearheading-opportunity</u>.

⁵⁸ Shannon Poynton, Jason Flynn, Kraig Eaton, Sue Cantrell, David Mallon, and Nicole Scoble-Williams, "Thriving beyond boundaries: Human performance in a boundaryless world," 2024 Global Human Capital Trends, Deloitte, 2024, <u>https://www2.deloitte.com/content/dam/insights/articles/glob176836_global-human-capital-trends-2024/DI_Global-Human-Capital-Trends-2024.pdf</u>.

⁵⁹ Statistics Explained "Use of artificial intelligence in enterprises," Eurostat, 2025, <u>https://ec.europa.eu/eurostat/statistics-explained/index.php?title=Use_of_artificial_intelligence_in_enterprises</u>.

⁶⁰ Mia Hoffmann and Laura Nurski, "What is holding back artificial intelligence adoption in Europe?" Bruegel, 2021, <u>https://www.bruegel.org/sites/default/</u> files/private/wp_attachments/PC-24-261121.pdf.

talent availability.⁶¹ As a result, 57% of surveyed European executives agree that funding for reskilling and upskilling had the "greatest potential to increase talent availability."⁶² Similarly, the need to upskill is a pressing one in Canada. Further, according to the Future Skills Centre, an estimated 42% of Canada's workforce will need to be reskilled to prepare for the Al transformation.⁶³

AI KNOWLEDGE AND SKILLS: KEY OPPORTUNITIES FOR COLLABORATION

Canada's and the EU's workforces face significant knowledge gaps related to AI development and adoption. However, these gaps also present Canada and Europe with opportunities to foster knowledge exchange, innovation, and workforce development. A comprehensive Canada-EU AI talent exchange initiative similar to the UK-Canada Al Safety Researcher Exchange Programme could facilitate increased talent mobility and create pathways for top AI talent to gain international experience. Further, like the UK-Canada AI Safety Researcher Exchange Programme, which funds PhD students and post-doctoral fellows to spend three to six months in the other respective region,⁶⁴ a Canada-EU AI talent exchange could provide travel, visa, and relocation supports to remove friction and barriers from the process. Canada and the EU could collectively address talent shortages, enrich Al research, and bolster collaboration between government, industry, and academic institutions.

Beyond talent mobility, reskilling and upskilling workers is fundamental to building the skills

necessary for Al-enabled economies. Under the 2023 Canada-EU Digital Partnership, Canada and the EU agreed to share best practices given their similar digital skills shortages.⁶⁵ Further, through the Digital Europe Programme, the EU committed to allocating €580 million from 2021 to 2027.66 Similarly, as part of its 2024 budget, the Canadian federal government committed \$50 million over four years to support skills training for workers working in sectors that may be disrupted by AI, or from communities that may be disproportionately impacted.⁶⁷ Initiatives such as these will be critical for preparing workers in both Europe and Canada to adapt to work in Al-enabled economies. However, an opportunity to collaborate and align curricula, training standards, and programs across the regions remains. Through joint investment in Al upskilling and talent development, Canada and Europe can strengthen their global competitiveness while at the same time ensuring that their workforces are prepared for the Al transition that each region is faced with.

⁶¹ World Economic Forum, "Future of Jobs Report: 2025," 2025, <u>https://reports.weforum.org/docs/WEF_Future_of_Jobs_Report_2025.pdf?utm_source=substack&utm_medium=email</u>.

⁶² Ibid.

⁶³ Steven Tobin, "State of Skills: Unleashing Al into the skills development ecosystem," Future Skills Centre, 2024, https://fsc-ccf.ca/wp-content/uploads/2024/04/State-of-Skills_-Al.pdf.

^{64 &}quot;UK-Canada AI safety researcher exchange programme," The Department for Science, Innovation and Technology, 2024, https://www.gov.uk/government/publications/uk-canada-ai-safety-researcher-exchange-programme.

^{65 &}quot;Canada - European Union Digital Partnership," Innovation, Science and Economic Development Canada, 2023, https://ised-isde.canada.ca/site/ised/en/canada-european-union-digital-partnership.

^{66 &}quot;Digital Europe Programme (DIGITAL)," European Commission, 2024, https://ec.europa.eu/info/funding-tenders/opportunities/portal/screen/ programmes/digital.

^{67 &}quot;Economic Growth for Every Generation," Government of Canada, 2024, https://budget.canada.ca/2024/report-rapport/chap4-en.html.

JUST TRANSITIONS TO AN AI-ENABLED ECONOMY

BALANCE BETWEEN AUTOMATION AND HUMAN JOBS

It is crucial for Canadian and EU policymakers, private industry, and post-secondary institutions to collaborate to not only improve Al talent and skills availability but also invest in upskilling and reskilling for workers in occupations negatively impacted by Al. The advent of Al has and will continue to pose many challenges and opportunities for workers at every level. Due to its disruptive nature, Al, if poorly managed, could be a double-edged sword that offers increased productivity and efficiency for some while displacing many others.

At the international level, executives surveyed by the World Economic Forum expect that the fastest growing jobs by 2030 will be "Big Data Specialists, FinTech Engineers, AI and Machine Learning Specialists, and Software and Applications Developers."⁶⁸ On the other hand, the same executives reported that postal service clerks, bank tellers and related clerks, data entry clerks, cashiers, and administrative assistants are the fastest declining jobs, largely due to AI and autonomous systems.⁶⁹ Moreover, European business leaders surveyed by the World Economic Forum expect considerable disruptions due to AI. Ninety per cent of European organizations reported exposure to AI, and 36% reported expected skill disruptions.⁷⁰

In Canada, research predicts that approximately 60% of workers are in roles that will experience some exposure to AI and, further, that those in roles with high exposure but low complementarity with AI will feel the brunt of its negative disruptions.⁷¹ Complementarity refers to the degree to which AI can assist or complement the day-to-day tasks of a worker, meaning that low complementarity jobs will be particularly affected, as those jobs involve more tasks that can be automated and done without humans.⁷² Across Canada, 31% of employees fall into the high exposure and low complementarity (HE-LC) group, 29% fall into high exposure and high complementarity (HE-HC), and 40% fall into low exposure (LE-HC and LE-LC).⁷³ Examples of HE-LC roles include data entry clerks, economists, interactive media developers, and computer network technicians, among others (see Figure 2).74

72 Vivian Li, Graham Dobbs, "Right Brain, Left Brain, Al Brain," The Dais, 2025, https://dais.ca/reports/right-brain-left-brain-ai-brain/.

⁶⁸ World Economic Forum, "Future of Jobs Report: 2025," 2025, <u>https://reports.weforum.org/docs/WEF_Future_of_Jobs_Report_2025.pdf?utm_source=substack&utm_medium=email</u>.

⁶⁹ Ibid.

⁷⁰ Ibid.

⁷¹ Tahsin Mehdi, René Morissette, "Experimental Estimates of Potential Al Occupational Exposure in Canada," Statistics Canada, 2024, https://doi.org/10.25318/11f0019m2024005-eng.

⁷³ Tahsin Mehdi and René Morissette, "Experimental Estimates of Potential Al Occupational Exposure in Canada," Statistics Canada, 2024, https://doi.org/10.25318/11f0019m2024005-eng.

⁷⁴ Tahsin Mehdi and Marc Frenette, "Exposure to Al in Canadian jobs: Experimental estimates," Statistics Canada, 2024, <u>https://doi.org/10.25318/36280001202400900004-eng</u>.



Figure 2: Potential occupational exposure and complementarity with Al in Canada.

Jobs requiring a university degree
 Jobs requiring some postsecondary education below bachelor's degree
 Jobs requiring high school or less

Source: Statistics Canada, https://www150.statcan.gc.ca/n1/pub/11-631-x/11-631-x2024005-eng.htm.

At present, HE-HC roles are overwhelmingly tied to higher educational attainment.⁷⁶ In fact, 46% of workers whose highest level of education is an undergraduate degree, and 58% of workers whose highest level of education is a graduate degree fall into this category, whereas only 13% of workers whose highest level of education is high school are in roles that would be considered HE-HC.⁷⁶ Many of the jobs in the HE-LC category are middle-income and middleskilled roles that may require high school completion and/or post-secondary education but not a four-year degree.

For those in roles with high exposure and high complementarity, Al is expected to be used to

augment the capacities of workers as opposed to replacing them outright.⁷⁷ HE-HC roles tend to be higher paying and require post-secondary certification of some kind.⁷⁸ These include roles like engineers, medical practitioners, and school teachers (see Figure 2).⁷⁹ Despite their high exposure, HE-HC roles involve a high degree of human-to-human interaction and tasks that are "cognitive and non-routine,"80 which necessitate high-level decision-making skills and a "greater responsibility for safety and health outcomes."81 Workers in these roles are best positioned to benefit from increased Al adoption; however, what gualifies as a high complementarity role may change in the future as Al models improve.

81 Ibid.

⁷⁵ Vivian Li and Graham Dobbs, "Right Brain, Left Brain, Al Brain," The Dais, 2025, https://dais.ca/reports/right-brain-left-brain-ai-brain/.

⁷⁶ Ibid.

⁷⁷ Ibid.

⁷⁸ Ibid.

⁷⁹ Tahsin Mehdi and Marc Frenette, "Exposure to Al in Canadian jobs: Experimental estimates," Statistics Canada, 2024, <u>https://doi.org/10.25318/36280001202400900004-eng</u>.

⁸⁰ Vivian Li and Graham Dobbs, "Right Brain, Left Brain, Al Brain," The Dais, 2025, https://dais.ca/reports/right-brain-left-brain-ai-brain/.

DISPLACEMENT, JOB TRANSITIONS, DECENT WORK, AND PRODUCTIVITY

Among the most pressing risks associated with Al adoption and automation is job displacement. Twenty-seven per cent of organizations that responded to a 2024 McKinsey survey reported that they believed workforce labour displacement to be a relevant risk, and 9% said they were actively working to mitigate this risk.82 Further, 7% of respondents reported that they had experienced some form of workforce labour displacement.⁸³ A similar survey completed by the Canadian Chamber of Commerce, whose participants were early adopters of generative Al, had similar findings. For instance, 13% of respondents planned to "automate tasks to replace employees," and 10% planned to "minimize workforce recruitment and retention challenges" through their adoption of generative Al.⁸⁴ Further, less than half of respondents (46%) planned to increase automation without reducing their number of employees.85

In the EU, it is estimated that 4% of jobs (16.5 million) in Europe and Central Asia have considerable automation potential, and that the majority of these occupations (11.8 million) are held by women.⁸⁶ On the other hand, 14% of jobs (57.9 million) have augmentation potential.⁸⁷ Al's impacts on workers, whether positive or negative, will depend on the design and adoption of Al at the organizational level.⁸⁸

Given the increasing risk of job displacement

and recent events in particular sectors, like interactive digital media,⁸⁹ it is critical that job transitions and the reskilling and upskilling necessary for those transitions are treated as key points of focus. In this regard, the Organisation for Economic Co-operation and Development's 2023 Employment Outlook recommends that social partners and institutions work together to safeguard the rights of workers through collective bargaining and provide financial supports to protect the net incomes of low-income households that may be affected by Al integration.⁹⁰ Further, the report stresses the importance of integrating AI skills into education and training, particularly for older workers and low-skilled workers who may be disproportionately affected by the Al transition.⁹¹

Ultimately, Al's impact on job displacement remains to be seen and is highly dependent on the pace of Al technology adoption. At present, Canada's pace of Al adoption remains slow. According to Statistics Canada data, in the second quarter of 2024, only 6% of businesses reported using Al and more than 50% of businesses did not have plans to adopt Al in the next year.⁹² As well, only one in 10 businesses (10.6%) intended to integrate Al in the next year.⁹³ On the other hand, a significant majority of businesses (71.8%) had no plans to implement Al, while 17.6% remained uncertain about their Al usage in the coming year.⁹⁴

82 "The State of Al in early 2024: Gen Al adoption spikes and starts to generate value," McKinsey, 2024, https://www.mckinsey.com/capabilities/guantumblack/our-insights/the-state-of-ai.

84 Patrick Gill and Andrew DiCapua, "Prompting Productivity: Generative Al Adoption by Canadian Businesses," The Canadian Chamber of Commerce, 2024, <u>https://businessdatalab.ca/wp-content/uploads/2024/05/Prompting_Productivity_Report_May_2024.pdf</u>.

85 Ibid.

86 Pawel Gmyrek, Janine Berg, David Bescond, "Generative AI and Jobs: Policies to Manage the Transition," International Labour Office, 2024, <u>https://sdgs.un.org/sites/default/files/2024-05/Gmyrek%3B%20Berg%3B%20Bescond_Generative%20AI%20and%20Jobs.pdf</u>.
 87 Ibid

87 Ibid.88 Ibid.

89 "2024 State of the Game Industry," Game Developer's Conference, 2024, <u>https://reg.gdconf.com/state-of-game-industry-2024</u>.

- **90** "OECD Employment Outlook 2023: Al and the Labour Market," OECD Publishing, 2023, <u>https://www.oecd.org/en/publications/oecd-employment-outlook-2023_08785bba-en/full-report/component-2.html#introduction-d5e39</u>.
- **91** Ibid.

92 Valerie Bryan, Shivani Sood, and Chris Johnston, "Analysis on Al use by businesses in Canada, second quarter of 2024," Statistics Canada, 2024, <u>https://www150.statcan.gc.ca/n1/pub/11-621-m2024008-eng.htm</u>.

93 Valerie Bryan, Shivani Sood, and Chris Johnston, "Analysis on expected use of Al by businesses in Canada, third quarter of 2024," Statistics Canada, 2024, <u>https://www150.statcan.gc.ca/n1/pub/11-621-m/10-621-m2024013-eng.htm</u>.

94 Ibid

^{83 &}quot;The State of AI in early 2024: Gen AI adoption spikes and starts to generate value," McKinsey, 2024, <u>https://www.mckinsey.com/capabilities/quantumblack/our-insights/the-state-of-ai.</u>

Regarding just transitions to an Al-enabled economy, a comprehensive framework is outlined in Partnership on Al's 2023 paper Guidelines for AI and Shared Prosperity. The report stresses the importance of co-operation between government and industry to create proactive (as opposed to reactive) policies that can ensure that increased adoption of AI and automation do not come at the expense of workers under threat of automation.⁹⁵ On this note, the authors outline key principles and suggest assessment methods to evaluate the impact of AI on workers and the labour market at large.⁹⁶ Most notable among these recommendations is a "job impact assessment," which would entail evaluating risks (like job displacement) to particular roles, and potential benefits (like increased productivity).97

Further, the paper separates its goals into those for organizations that create AI models, and those for organizations that use Al models.⁹⁸ Specifically, the authors argue (a) that organizations directly building and deploying AI need to do so responsibly, and (b) that they should work with organizations and workers to ensure both transparency and risk management as they relate to job displacement.⁹⁹ At the same time, organizations seeking to make use of AI solutions need to holistically plan their integration to protect the rights of workers and their employment.¹⁰⁰ Perhaps most controversially, the paper also calls for governments to include AI governance legislation in labour rights.¹⁰¹ Whether a framework as bold as this would realistically be implemented remains to be seen, but it outlines a potential path forward for Al governance and the future of work.

- 97 Ibid. 98 Ibid.
- 99 Ibid.

101 Ibid.

^{95 &}quot;Guidelines for Al and Shared Prosperity: Tools for improving Al's impact on jobs," Partnership on Al, 2023, https://partnershiponai.org/paper/sharedprosperity/.

⁹⁶ Ibid.

¹⁰⁰ Ibid.

JUST TRANSITIONS TO AN AI-ENABLED ECONOMY: KEY OPPORTUNITIES FOR COLLABORATION

Canada, the EU, and the UK have key opportunities to collaborate on just transitions given looming Al-driven labour market disruptions. Specifically, focusing on labour rights and sustainable AI development could position Canada, the EU, and the UK as global leaders in ethical development and just transitions. Firstly, along with general AI governance convergence, creating and aligning human rights-focused policies that do not stifle continued innovation could help Canada and Europe mitigate negative disruptions associated with Al adoption and deployment. On this note, Canada recently signed the Council of Europe Framework Convention on Artificial Intelligence and Human Rights, Democracy and the Rule of Law, joining the EU and the UK, among others.¹⁰² The convention establishes a standardized international legal framework to address possible risks to human rights and democratic institutions.¹⁰³ This is a step in the right direction, but more policy actions to protect labour rights could further mitigate the risk of job displacements in the coming years.

The International Labour Organization stresses that a just transition depends on cooperation to create an international labour standard that ensures decent work, supports for workers, and access to training programs.¹⁰⁴ By sharing best practices and investing in reskilling programs, Canada, the EU, and the UK can facilitate a just transition that can account for potentially displaced workers.

Concerning sustainable development, the EU's Corporate Sustainability Due Diligence Directive, which entered into force in July 2024, sets an obligation for companies to identify and address human and environmental impacts in their value chains.¹⁰⁵ Aligning the EU's Corporate Sustainability Due Diligence Directive with Canada's and the UK's emerging frameworks could set a global benchmark for responsible corporate behaviour.¹⁰⁶ Further, given generative AI's known environmental impacts,¹⁰⁷ establishing international cooperation aimed at lowering AI's environmental footprint is particularly pertinent.

102 "Canada signs the Council of Europe Framework Convention on Artificial Intelligence and Human Rights, Democracy and the Rule of Law," Global Affairs Canada, 2025, <u>https://www.canada.ca/en/global-affairs/news/2025/02/canada-signs-the-council-of-europe-framework-convention-on-artificialintelligence-and-human-rights-democracy-and-the-rule-of-law.html.</u>

104 Pawel Gmyrek, Janine Berg, and David Bescond, "Generative AI and Jobs: Policies to Manage the Transition," International Labour Organization, 2023, https://www.ilo.org/sites/default/files/2024-08/GenAI%20and%20Jobs_Policy%20Brief_IL0.pdf.

¹⁰³ Ibid.

¹⁰⁵ "Corporate sustainability due diligence," European Commission, 2024, <u>https://commission.europa.eu/business-economy-euro/doing-business-eu/</u> sustainability-due-diligence-responsible-business/corporate-sustainability-due-diligence_en.

^{106 &}quot;Due diligence and supply chains," Government of Canada, 2022 <u>https://www.international.gc.ca/trade-commerce/rbc-cre/diligence.aspx?lang=eng;</u> "Supply chain due diligence principles," HM Revenue & Customs, 2024, <u>https://www.gov.uk/government/publications/use-of-labour-providers</u>.

¹⁰⁷ Adam Zewe, "Explained: Generative Al's environmental impact," Massachusetts Institute of Technology News, 2025, https://news.mit.edu/2025/explained-generative-ai-environmental-impact-0117.

AI INNOVATION HUBS: A SPOTLIGHT ON CANADIAN AND EUROPEAN AI HUBS

CANADA'S AI INNOVATION HUBS

Canada pioneered the global AI movement by becoming the first country to launch a national AI strategy in 2017, led by the Canadian Institute for Advanced Research.¹⁰⁸ Canada's early success in its AI strategy led to the prioritization of education and attraction of researchers to work at the forefront of AI while also enabling a strong startup ecosystem.¹⁰⁹ Since 2016 the Government of Canada has committed over \$4.4 billion focused on advancing Canada's AI ecosystem.¹¹⁰

Though Canadian Al companies can be found coast to coast, Canada's Al ecosystem is anchored around three national institutes: the Alberta Machine Intelligence Institute; the Montreal Institute for Learning Algorithms; and the Vector Institute. As such, these three institutes translate the findings of Canada's leading Al research ecosystem into commercial applications while advancing the capacity of businesses to adopt novel AI technologies. Canada's AI industry is further supported by its global innovation cluster, Scale AI. Scale AI is a consortium of research centres, academic institutions, high-potential startups, and private entities that strengthen Canada's AI advantage at a global scale. In short, Canada's AI ecosystem success is evidenced by its continued collaboration, talent development, and the commitment of its AI strategy.

Canada also recently announced a \$2.4 billion investment to (a) advancing domestic Al capacities through advanced computing infrastructure, and (b) supporting the adoption of Al across small and medium enterprises. Within this announcement, \$50 million was committed to establish the Canadian Al Safety Institute (CASI), and an additional \$5.1 million was dedicated to enforcing the Al and Data Act.

EUROPE'S AI INNOVATION HUBS

Europe's many research institutes, such as Inria, CNRS, CEA, Fraunhofer, Max Planck, and DFKI, act as the backbone for its AI ecosystem. This network of research institutes and universities produces one of the world's most well-educated workforces, which is crucial for the development and implementation of advanced technologies. The region's strong educational systems and emphasis on science, technology, engineering, and mathematics education ensure a steady supply of skilled professionals who can contribute to the AI and robotics sectors.

Moreover, these institutions are at the forefront of AI research, contributing significantly to global AI progress. For instance, European researchers have been instrumental in developing key AI technologies like long shortterm memory networks and diffusion models.¹¹¹

^{108 &}quot;The Pan-Canadian AI Strategy," CIFAR, accessed 14 January 2025, https://cifar.ca/ai/.

¹⁰⁹ Scale AI, "AI at Scale," accessed January 2025, https://indd.adobe.com/view/5a673fcd-b815-4aee-8a99-3b043c151296.

¹¹⁰ Prime Minister's Office, "Securing Canada's Al Advantage," Government of Canada, 07 April 2024, <u>https://www.newswire.ca/news-releases/securing-canada-s-ai-advantage-886955950.html</u>.

^{111 &}quot;Long Short-Term Memory (LSTM)," Nvidia Developer, accessed 13 February 2025, <u>https://developer.nvidia.com/discover/lstm</u>; Ryan O'Connor, "Introduction to Diffusion Models for Machine Learning," AssemblyAI, 2022, <u>https://www.assemblyai.com/blog/diffusion-models-for-machine-learning-introduction/</u>.

These advancements are paving the way for next-generation tech, including neuromorphic microprocessing, advanced computing, and edge AI.

The large unified modern infrastructure (LUMI) supercomputer is one of the most powerful and environmentally efficient supercomputers in the world.¹¹² Located in Kajaani, Finland, LUMI is a collaborative effort funded by the European High Performance Computing Joint Undertaking and a consortium of 11 European countries. . LUMI supports a wide range of research activities, from climate modelling to drug discovery, and is a significant asset for European researchers and industries. LUMI supports advanced AI research, including machine learning and deep learning applications. It is at the forefront of integrating guantum computing with classical computing to solve complex problems more efficiently.

Europe is also a leader in industrial AI and robotics, particularly in manufacturing. European companies are at the forefront of developing and deploying AI-driven automation solutions that enhance productivity, efficiency, and safety in manufacturing processes. This leadership position is supported by Europe's strong industrial base and expertise in automation.

Europe boasts some of the best datasets in the world; the key challenge is access. European

"common data spaces," the result of a European Commission initiative that seeks to enable access to high-quality and interoperable data while ensuring data sovereignty and security, are a potential solution.¹¹³ They allow for crosssector and cross-region data sharing, fostering innovation and collaboration and forming the basis for high-quality and powerful AI models of the future. Initiatives like Gaia-X and Confiance. ai aim to create a secure and sovereign data infrastructure for Europe,¹¹⁴ ensuring that data is managed and utilized in a way that aligns with European values and regulations and leading the way in setting global standards for ethical and responsible AI development.

Europe has a longstanding and strong industrial base, particularly in manufacturing and automation. European companies have established production plants globally, showcasing their expertise and influence in these sectors. This industrial strength provides a solid foundation for the development and implementation of Al and robotics technologies, particularly in industrial applications.

European companies and research institutions are actively exploring "physical AI" solutions on a global scale. This includes developing advanced robotics technologies for various applications, from industrial automation to healthcare and service robotics.

¹¹² It uses 100% hydroelectric energy, and the heat generated is repurposed to heat nearby buildings; ENCCS-Team, "LUMI, a sustainable solution for Al development (and more)," EuroCC National Competence Centre Sweden, 2024, <u>https://enccs.se/news/2024/10/lumi-a-sustainable-solution-for-ai-development/#:~:text=LUMI%20and%20sustainability,make%20data%20centers%20more%20sustainable%E2%80%9C.</u>

^{113 &}quot;Common European Data Spaces," 2024, European Commission, https://digital-strategy.ec.europa.eu/en/policies/data-spaces.

^{114 &}quot;Together Towards a Federated and Secure Data Infrastructure," Gaia-X, accessed 13 February 2025, https://gaia-x.eu/;

AI INNOVATION HUBS: KEY OPPORTUNITIES FOR COLLABORATION

Given Canada's research expertise and access to critical minerals and Europe's strong industrial base and robotics expertise, many opportunities remain for both regions to collaborate and combine strengths. For example, leveraging Canada's leadership in quantum computing alongside the EU's Horizon Europe could offer an avenue for joint research and development in Al-quantum hybrid models. By extension, a marriage of strengths of this sort could enable breakthroughs and foster innovation. Establishing a research consortium coupled with developing policies aimed at increased talent mobility could act as a catalyst to such collaboration, further ensuring that both regions stand as global leaders in Al-driven quantum innovations. Further, joint research

initiatives could facilitate investments in Aldriven climate solutions like smart grids, carbon capture technologies, and precision agriculture.

Another key area for collaboration is cybersecurity. As AI cyberthreats become increasingly commonplace and complex, it is important that Canada and Europe increase their cyber resilience. A shared framework for threat detection and best practices in AI security governance could protect both state and economic interests while also providing other avenues for collaboration on democratic resilience to protect democratic institutions and citizens of the EU, the UK, and Canada from AI-driven misinformation, AI-doctored images, and election interference.

THE ROLE OF PUBLIC-PRIVATE PARTNERSHIPS IN ADVANCING AI

Digital public-private partnerships stand at the heart of advancing digital readiness, driving economic growth, and transforming public services. For AI to thrive within public-private partnerships, three fundamental elements must be in place: widely accessible and affordable connectivity, powerful online platforms, and stringent privacy and data protection measures. These foundations create the environment where innovation can flourish while maintaining public trust and security.

Advancing AI technologies through publicprivate partnerships will be fundamental to supporting Al's sustained innovation and balancing broader society needs. A collective effort from government, academia, the private sector, and civil society will further support the adoption and ethical advancement of Al technologies. Examples of this can be noted by development of regulatory frameworks and incentives, and companies providing the technical prowess and innovative means to support the arowth of the economy, with ethical oversight considerations from civil society groups. Additionally, developing evidence-based policies that leverage the Al research ecosystem, whether through the commercialization of research or the development of new knowledge and ideas, serves a vital role in advancing Al ecosystems.

Further, a high level of collaboration between academia, industry, and government stimulates a rich collaborative culture, which fosters innovation and accelerates the development and deployment of AI and robotics solutions. For example, Innovation Center for AI (ICAI) consists of various labs that are public-private collaborations between universities and industry or governmental organizations. These labs focus on impactful AI research and development. For example, the AI for Medical Imaging Lab is a collaboration between Radboud University Medical Center and industry partners, focusing on AI applications in medical imaging.¹¹⁵

By working together, these sectors can leverage their collective expertise and resources to drive technological advancements. A very tangible output of this collaborative culture is OpenEuroLLM, an ambitious European initiative to develop open-source large language models that align with Europe's values and technological priorities.¹¹⁶ Beyond this, in February 2025, the European Commission announced a €200 billion investment through their InvestAI fund,¹¹⁷ creating the largest public-private partnership in the development of trustworthy AI.

^{115 &}quot;Al in Health(care)," Radboud University Medical Center, accessed 13 February 2025, <u>https://www.radboudumc.nl/en/research/artificial-intelligence-in-healthcare</u>.

^{116 &}quot;A series of foundation models for transparent Al in Europe," OpenEuroLLM, accessed 13 February 2025, https://openeurollm.eu/.

^{117 &}quot;EU launches InvestAl initiative to mobilise €200 billion of investment in Al," European Commission, 10 February 2025, <u>https://ec.europa.eu/</u> commission/presscorner/detail/en/ip_25_467.

PUBLIC-PRIVATE PARTNERSHIPS: KEY OPPORTUNITIES FOR COLLABORATION

The evolution of regulatory and institutional frameworks governing public-private partnerships requires careful orchestration between private industry and the public sector. This collaboration ensures that frameworks remain responsive to technological advances while protecting public interests. Canada and the EU are uniquely positioned to lead this effort, bringing together their respective strengths in research and regulatory expertise while advancing their commercialization efforts.

One promising avenue for collaboration lies in the co-design of AI policies with industry stakeholders. By establishing AI ethical advisory boards and sharing best practices, both regions can create more effective and equitable frameworks for AI governance. This approach helps ensure that AI development aligns with public values while fostering innovation and economic growth. The integration of Al into public-private partnerships is fundamentally changing how governments and private sector entities approach infrastructure projects. In urban development, Al-powered solutions are optimizing everything from traffic flow to energy consumption. These same technologies are enhancing energy efficiency across power grids and industrial facilities, and sophisticated Al systems are being deployed to detect and mitigate threats to critical infrastructure.

Through their partnership, Canada and the EU can accelerate these developments, creating models for successful public-private collaboration that other regions can emulate. Their joint efforts can demonstrate how thoughtful integration of AI technologies can serve both public interests and private sector goals while maintaining the highest standards of ethical deployment and public accountability.

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CONCLUSION

Given the rapid pace of change in AI technology and the complex physical and digital resources needed to power AI, co-operation and collaboration between like-minded countries is crucial. Going forward, Canada and the EU have an opportunity to grow their AI ecosystems by advancing their bilateral economic cooperation.

As AI is increasingly adopted and integrated, it will clearly have far-reaching consequences for economies, workforces, and governments around the globe. At present, Canada and the EU find themselves at critical junctures, which have made it crucial that relevant institutions responsibly navigate the path toward Al-enabled economies. Although Al has the potential to significantly improve productivity and address labour shortages and talent availability, realizing its potential is greatly dependent on striking a just transitions-focused balance between continuous innovation and ethical development. With early AI adoption and commercialization correlating strongly with maintaining global market leadership,¹¹⁸ it is also particularly important that Canadian and European policymakers and industry leaders keep in mind that the rate at which productivity growth will be observed is largely dependent on the rate at which business processes and technologies can be integrated to leverage Al.

The robust adoption of sectoral-focused Al solutions can drive employment through mechanisms that promote capital deepening, the division of labour, and increased labour productivity.¹¹⁹ However, for countries to secure their position as leading Al ecosystems, coordinated action across policies, institutional frameworks, and incentive structures remains imperative. This is especially true concerning the need to mitigate the potential negative risks associated with increased Al adoption and automation, and to realize the potential positive opportunities to augment the tasks of workers.

Further, while Canada continues to work toward a comprehensive regulatory framework for AI governance, the EU has already implemented their own through the EU AI Act. Hence, there is an opportunity for Canadian policymakers to learn from such policy actions to ensure the protection of privacy, protect workers, and incentivize continuous innovation. Further, as outlined throughout this brief, many opportunities remain for Canada and the EU to collaborate. Canada is particularly strong in its research capacities and its access to critical minerals, whereas Europe has successfully integrated industrial robotics and has established itself as a leader in semiconductor manufacturing equipment. Fostering collaboration between these two distinct economic regions would benefit both, and the global AI ecosystem at large.

¹¹⁸ OECD, "Miracle or Myth? Assessing the macroeconomic productivity gains from AI," OECD AI Papers, 22 November 2024, <u>https://www.oecd.org/en/publications/miracle-or-myth-assessing-the-macroeconomic-productivity-gains-from-artificial-intelligence_b524a072-en.html</u>.

¹¹⁹ Mauro Cazzaniga, Florence Jaumotte, Longji Li, Giovanni Melina, Augustus J Panton, and Carlo Pizzinelli et al., "Gen-Al: Al and the Future of Work." International Monetary Fund, 14 January 2024, <u>https://www.imf.org/en/Publications/Staff-Discussion-Notes/Issues/2024/01/14/Gen-Al-Artificial-Intelligence-and-the-Future-of-Work-542379</u>.

SUMMARY OF KEY OPPORTUNITIES FOR COLLABORATION

Al in Business Transformation

- AI Testbeds and Regulatory Sandboxes: Develop joint AI testbeds and regulatory sandboxes to attract innovators and stay ahead of rapidly evolving technologies.
- Al Ecosystem Strengthening: Share best practices across the Al value chain, including cloud computing, compute-hardware manufacturing, data management, and model development.
- Advancing Industry Applications for AI: Collaborate on using AI to advance AI applications in industry, including clean energy, manufacturing supply chains, healthcare, and financial services.

Promoting Ethical Use of Al

- Harmonizing Al Regulations: Align Al governance approaches between Canada and the EU to facilitate collaboration and international interoperability.
- Privacy Protection Alignment: Update Canada's privacy regulations to bring Canada's regulatory framework more in line with the EU's GDPR to ensure frictionless crossborder data flows and reduce compliance burdens.
- Al Governance and Risk Mitigation: Address the ethical development of Al systems with aligned human rights policies to prevent risks and negative disruptions, focusing on privacy and transparency.

Al Knowledge and Skills

- Al Talent Exchange: Create a Canada-EU AI talent exchange initiative to foster mobility, encourage AI talent to gain international experience, and address workforce gaps in AI development.
- Reskilling and Upskilling: Collaborate on reskilling and upskilling initiatives to prepare workers for Al-enabled economies, including joint investments in training and development.
- Alignment of Curricula: Align Al curricula and training programs to strengthen global competitiveness and ensure the workforce is prepared for Al transitions.

Just Transitions to an Al-Enabled Economy

- > Labour Rights and Sustainable Al Development: Create aligned human rights-focused policies to protect workers from Al-induced job disruptions.
- International Cooperation on Labour Standards: Collaborate to develop international labour standards that ensure decent work and access to training programs.

Al Innovation Hubs

- > Al-Quantum Hybrid Models: Leverage Canada's expertise in quantum computing and the EU's Horizon Europe for joint Al-quantum research and development.
- Cybersecurity Collaboration: Enhance cyber resilience by developing shared frameworks for AI security governance, thereby protecting state and economic interests from AI-driven cyberthreats.
- Climate Solutions and AI: Collaborate on AI-driven climate solutions like smart grids, carbon capture technologies, and precision agriculture.

Public-Private Partnerships

- Co-Designing Al Policies: Collaborate with industry stakeholders to co-design ethical Al policies, ensuring alignment with public values while fostering innovation.
- Al in Infrastructure Projects: Integrate Al solutions in urban infrastructure, optimizing systems like traffic flow, power grids, and critical infrastructure.
- Public-Private Al Collaboration Models: Develop successful public-private Al collaboration models to serve as global examples of how Al technologies can advance public and private sector goals while maintaining high standards of ethical deployment.