

Defining the Next Chapter of Canada's AI Leadership

Submission to Innovation, Science and Economic Development Canada

Canada faces a polycrisis. National productivity and, consequently, standards of living across the country have dropped sharply in recent years; top technical talent and intellectual property (IP) are leaving the country at record rates; trust in institutions continues to decline; and policy makers must navigate an increasingly uncertain geopolitical environment. While far from a panacea, artificial intelligence (AI) has the potential to help Canada address many of these challenges and foster a thriving innovation ecosystem where research, industry and the public can benefit from thoughtfully designed AI policy.

The Centre for International Governance Innovation (CIGI) has a global network of researchers and contributors who work at the intersection of technology and governance from various perspectives. CIGI experts help advance responsible and secure AI policy that addresses many of these consequential challenges to serve the Canadian public and humanity more broadly.

In response to the 30-Day National Sprint: Consultation on Artificial Intelligence (AI) Strategy, the following submission to the AI Strategy Task Force highlights insights and recommendations from a wide range of CIGI fellows, contributing authors and staff. The opinions expressed herein are those of the author(s), demonstrating the intellectual diversity of the CIGI community, and do not necessarily reflect the views of CIGI or its Board of Directors.

All works referenced in this submission are selected from publications and commentary available at CIGIonline.org.

Recommendations

Research and Talent

1. **Invest in applied AI research and development (Rahnama 2025):** Canada should create specialized funding channels that target bridging theoretical advancements and practical implementations of AI. These funding channels should nurture cross-collaboration with Canadian enterprise and academia, and promote co-developed, scalable and computationally efficient proprietary algorithmic models. Moreover, research and development (R&D) programs between academia and the private sector must be structured to steward Canadian IP through appropriate resource allocation and incentives (Hinton and Witzel 2023).
2. **Upskill diplomats and public officials on AI (Forrest 2024):** Canada should enhance the capacity of diplomats and public officials to build trust, share knowledge and address AI risks. This may be supported through a variety of channels, including strengthening ties to governance and standard-setting activities, enhancing the pipeline of AI talent from academia and centres of expertise to government, and implementing AI learning tracks.
3. **Invest in enabling trust technologies (Rahnama 2025):** Policy makers must fund the development and adoption of privacy-enhancing technologies to ensure more secure, cross-industry data sharing, address common privacy concerns and unleash the value of data.
4. **Develop a national AI ethics framework “with teeth” (Rahnama 2025):** Canada must build on existing ethical guidelines, holding to a fundamental principle of making data “as open as possible and closed as necessary.” This framework should include establishing enforceable standards and accountability mechanisms that create secure AI systems, particularly important in sensitive sectors. Moreover, examples of these protocols should be demonstrated with Canadian, provincial and territorial open data platforms to allow their impact to be meaningfully verified.
5. **Prioritize responsible and transparent AI development (Rahnama 2025):** Policy makers in Canada must also incentivize AI development to address key societal challenges, including health-care access, social equity and climate change. For frameworks that help advance pro-social AI, see Walther (2025b).
6. **Establish a national AI collaboration platform (Rahnama 2025):** Canada should establish a secure federal platform to encourage the sharing of non-sensitive or tokenized AI models, data and compute resources across industry and academia, thereby improving opportunities for industry-academia collaborations and fostering cross-sectoral data portability.

Accelerating AI Adoption by Industry and Government

1. **Strengthen relationships between the government and the AI science and technology community (Forrest 2024):** The Canadian government must improve knowledge transfer between the AI community and policy makers to enhance decision making and diplomacy. Moreover, it must prioritize attracting and retaining AI workers in the public sector to address frontier AI risks effectively.
2. **Incentivize industry-specific AI sandboxes (Rahnama 2025):** Canada should create regulatory sandboxes for specific industries to promote rapid iteration and market entry through offering a safe, regulatory-relaxed testing and deployment environment for AI solutions.
3. **Develop national AI use case road maps (Rahnama 2025):** Canada should allow its key industries to identify high-impact AI use cases and create their own national road maps for their development and deployment.
4. **Foster and strengthen regional AI hubs (Rahnama 2025):** Canada should support forming consortia in areas across the country with specific expertise (for example, agricultural AI in the prairies, health-care AI in Ontario) to help strengthen and provide resources for regional AI hubs, support the development of local innovation communities and attract more targeted investment. Moreover, Canada should establish talent mobility programs between these regional hubs to foster a national AI ecosystem, allowing talent to move between centres of excellence, provide expertise across multiple centres and train new talent.
5. **Encourage Canadian small and medium-sized enterprise (SME) AI adoption (Rahnama 2025):** Canada should establish a shared resource hub to help SMEs overcome key barriers to AI adoption, offering access to best practices, technical support, AI solutions and case studies.

Commercialization of AI

1. **Integrate AI within a broader national innovation system (NIS) framework (Kilic 2025):** Canada should integrate AI within an NIS framework, adopting several complementary policies that draw on successful examples from other countries. Policy measures under this NIS must consider the local context and local needs, set priorities that enhance domestic innovation through tailored, goal-specific approaches and include investments in public R&D initiatives (including basic and applied research). Moreover, such a framework must foster participatory and coordinated governance and shape policies in a way that aligns trade policy with industrial policy and competition. See also Scharf (2024).
2. **Launch a “Canadian and data IP fund” (Rahnama 2025):** To help retain Canadian IP and talent, Canada should create a national fund to support start-ups and

researchers in protecting and commercializing AI innovations. At the same time, Canada must also invest in other key areas, such as security, tokenization, portability and data protocols.

3. **(Re)allocate funding to research labs, infrastructure and support programs for SMEs (Samson, Kalash and Zivkovic 2025):** Canada should establish new funding or reallocate existing funds that focus on research labs, infrastructure and support programs for SMEs, since SMEs are central to growth and innovation but cannot leverage venture capital investments to grow.

Scaling Canadian Champions and Attracting Investment

1. **Fund cross-sectoral and verticalized AI challenges (Rahnama 2025):** Rather than providing subsidies to specific companies, Canada should offer funding for “national grand challenges” (AI for net zero, AI for pandemic preparedness, etc.) to address specific, high-impact national issues. This approach would encourage multi-stakeholder collaboration and allow participants to focus on differentiated impact. It would also enhance Canada’s ability to promote solution-oriented industrial capabilities and address common challenges in areas such as data sharing and protection.
2. **Launch a national data alliance/interconnection mission (Rahnama 2025):** Canada should establish a data alliance mission to advance secure, ethical and interoperable data sharing across enterprise sectors. This mission could foster relationships across public and private sector stakeholders and nurture entrepreneurs and new AI ventures.

Building Safe AI Systems and Strengthening Public Trust in AI

- **Publish AI “model cards” (Walther 2025a):** Public institutions should publish AI “model cards” to set an example and build trust. These model cards would offer a concise, standardized way to document AI models, including their intended use, development process, performance and limitations. Relatedly, public institutions should document each significant AI-assisted decision transparently.
- **Expand AI and data governance beyond harm mitigation (Goldfarb 2025):** In addition to focusing on harm mitigation, policy makers, both domestically and internationally, must steward the use of digital data and AI tools to better understand societal challenges.
- **Adopt frameworks for transparency, ethics and privacy (Goldfarb 2025):** Given concerns about data privacy and the “black box” nature of many AI models, policy makers should adopt frameworks that advance transparency, privacy and ethics, as well as policy making in a real-time data world. Moreover, legal and ethical

frameworks should protect individual rights and promote fairness, non-discrimination and accountability (Witzel, Gonnet and Snider 2024).

- **Champion public engagement and dialogue on AI (Rahnama 2025):** Canada should create platforms for public discussion on the societal implications of AI, informed consent, managing expectations and nurturing public trust in the development and deployment of AI.

Education and Skills

1. **Provide educational funding for STEM subjects and self-reflective critical thinking (Walther 2025a):** Public education should include mandates for ethical transparency and psychological safety and should provide funding not only for STEM subjects but also for self-reflective critical thinking.
2. **Mandate humanistic AI literacy from K–12 (Rahnama 2025):** Educational programs across Canada should be updated to include core principles of data, metadata and algorithms. These programs should be designed to promote creativity and inspiration and prepare students for a future in which AI is pervasive. Moreover, the curriculum should promote key skills such as critical thinking, digital literacy and supportive cultural narratives about AI.
3. **Create structured AI apprenticeships and internships (Rahnama 2025):** Canada should establish national programs with industry partners that provide paid internships and apprenticeships, especially for postgraduate AI talent. This would help bridge the academia-industry gap and support future Canadian AI talent.
4. **Promote AI accessibility and digital inclusion (Rahnama 2025):** Canada should implement programs, tools and policies that deliver equitable access to AI technologies and literacy for Canadians, especially underserved communities, to mitigate the ever-widening digital divide.

Building Enabling Infrastructure

1. **Build public data pools (Goldfarb 2025):** The Canadian government, along with international institutions, could partner with businesses to convert data into publicly accessible data sets that can be retooled for public-interest purposes. This would require investment to combine, validate and prepare data sets for policy makers and independent analysts.
2. **Invest in real-time digital data and related AI tools (Goldfarb 2025):** Canada must treat AI tools as critical public infrastructure, identify gaps in global and local data, and invest in high-frequency data. Moreover, policy makers should continue to identify and adapt to new AI tools as technology evolves and must prioritize leveraging AI to: serve remote areas, populations and underserved communities; address key public interest questions; and deliver in areas where highly detailed and

timely information could enhance outcomes or where official data may be unreliable or market incentives are weak.

3. **Promote open-source AI contributions (Rahnama 2025):** Canada must encourage Canadians to contribute more to global open-source AI projects. This will not only elevate Canada's profile as a collaborative leader in AI but also increase the adoption of advanced algorithmic practices, leverage the network effects of open-source solutions and help commercial ventures in the country emerge.
4. **Invest in baseline data (Goldfarb 2025):** Policy makers must invest more in foundational data to validate and calibrate new data types.

Security of Canadian Infrastructure and Capacity

This submission does not address AI applications in the military domain. However, CIGI continues to advance research on the responsible and lawful use of AI in military and defence contexts but notes it is a distinct area given the unique ethical, legal and operational considerations (West 2024).

1. **Seek international cooperation to manage global-scale risks from AI (Cass-Beggs et al. 2024):** There is a wide array of risks that AI poses to security, including key issues such as AI weaponization (i.e., the misuse of AI to cause harm) and loss of control of advanced AI systems (i.e., human loss of control over hostile or misaligned AI). Given the cross-border nature of these threats, Canada must foster international cooperation to enable both legitimate and effective decision making on developments in AI that can impact the future of people around the world. See also Cass-Beggs, da Mota and Reddy (2025).
2. **Anticipate and prepare for emerging national and global security risks posed by future AI development scenarios, including artificial superintelligence (ASI).** Leading AI experts are warning that ASI could soon become technically feasible and pose an extinction risk to humanity. Governments need to assess these risks and, if necessary, develop appropriate mitigations (Cass-Beggs and da Mota, forthcoming, 2025).
3. **Develop international military AI partnering opportunities (Simpson et al. 2025):** Canada should focus on building international defence partnerships, particularly with NATO allies. Such partnerships could help offset costs, encourage common standards, promote interoperability, advance shared data sets, leverage technological innovations and develop shared operating visions. This should also include public-private partnerships, given the growing role of industry in advancing technological innovation (Araya and King 2022).

4. **Prepare for misuse scenarios (Pauwels 2024):** AI is making information warfare increasingly accessible and powerful for both state and non-state actors. This growing diffusion of power presents new risks for asymmetries between conflict actors. To be ready for these challenges, Canada must prepare for misuse scenarios from malicious actors that harness technological convergences.
5. **Manage strategic autonomy (Samson, Kalash and Zivkovic 2025):** Policy makers should carefully manage strategic autonomy to ensure Canada is resilient to geopolitical uncertainties, such as safeguarding critical supply chains.
6. **Adopt agile national policy tools (Samson, Kalash and Zivkovic 2025):** As AI technologies continue to emerge and evolve, policy makers must adopt policy tools that can remain responsive to these changes, including advanced applications such as artificial general intelligence.
7. **Establish regional cybersecurity hubs (Bruce et al. 2024):** Canada should develop communities of practice or regional hubs to address an imbalance in expertise, capacity and capabilities within Canada’s cybersecurity ecosystem.
8. **Encourage cyberthreat information sharing (Bruce et al. 2024):** Canada should encourage sharing cyberthreat information through a national framework to help Canadian organizations better protect their information and systems.
9. **Develop strong Canadian cybersecurity talent (Bruce et al. 2024):** The government must build a strong cybersecurity talent pipeline to help build a foundation for securing new and emerging technologies, including through education strategies and programs and private sector–academic partnerships.

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