Promoting Artificial Intelligence in Canada

A Proposal for Copyright Reform

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Key Takeaways

- **A targeted and fair exemption with Copyright law** - A targeted exemption within the Copyright Act (Act) to allow for informational analysis would help secure a predictable legal environment for Canada’s Artificial Intelligence (AI) ecosystem to both continue its unprecedented growth and reach competitive maturity. This limited exemption would sit within the Act’s existing fair dealing framework and would benefit from the past interpretation of Canadian courts of this framework.

- **Informational Analysis** - Informational analysis refers to the need for AI to be built upon quality data. Informational analysis encompasses the derivation of information from data, and not the actual use and commercialization of that data as such.

- **Pressing need to resolve current ambiguity under the Act** - It is unclear at law whether informational analysis, especially for commercial reasons, is allowed. This ambiguity deters investments in AI R&D, and does so disproportionately to smaller, Canadian-owned companies (as larger multinationals can afford the legal battles that could ensue).

- **Reflecting public and private sector collaboration in AI R&D** - The exception should be agnostic as to the identity of who performs the informational analysis. Unduly limiting the purpose of informational analysis will prevent promising public/private collaborations and could create a dichotomy between public and private research that does not represent practice.

- **Supporting Canada’s IP culture** - The fair dealing exemption for informational analysis can help democratize access to data for Canada’s AI ecosystem. Data is key to test, train and research new innovative techniques, thereby connecting with the clear policy objectives of fostering Canada’s culture of innovation and intellectual property development.

- **A balanced exemption that does not compromise Canada’s artistic and creative communities** - Informational analysis should not be used to replace or deny revenue from rights-holders. AI is a natural ally of artistic and creative communities in Canada - as a medium used by artists and as a tool to improve copyright infringement detection.

- **Consolidating Canada’s position as an AI R&D friendly environment** - Other countries are vying for AI talent and investment, and proposals equivalent to the informational analysis exemption have been adopted in other jurisdictions, notably in Japan.
I. What is Informational Analysis?

“Informational Analysis” is a term encompassing the use of processing techniques to obtain and process text, images, sound, video, and other forms of data in order to generate new facts, discover patterns, and analyse relationships. The development of homegrown artificial intelligence (AI) companies and research is a strategic priority for Canada. Canada’s worldwide leadership can be strengthened by providing policy tools for AI research and commercialization to be better fostered. One such tool is recognizing “informational analysis” as a fair dealing exemption within the *Copyright Act* (the “Act”).

Informational analysis techniques have achieved important results in various fields of science, as well as practical applications in industry and government. Indeed, in the age of “big data”, such techniques can enable insights to be garnered through the parsing of voluminous data in many different fields such as pharmacology, environmental science and linguistics.

It is crucial to realize that informational analysis does not use the content itself of the data it analyzed. Rather, it relies on the information contained in those documents to be able to draw patterns, conclusions or trends.

As set out in this submission, a targeted exemption within the Act to allow for informational analysis would help secure a predictable legal environment for Canada’s AI ecosystem to continue is unprecedented growth and reach competitive maturity, all in due consideration of the interests the Act is intended to balance. We strongly believe that this limited exemption of fair dealing for the purpose of informational analysis can and should be balanced with privacy rights and the interests of rights-holders under the Act.

II. Informational Analysis in Canada - Supporting R&D in AI

Informational analysis matters to Canada because it helps unlock insights in existing data and allows that value to be applied to innovations across many different industries. For AI and Machine Learning’s benefits to be fully leveraged by Canada, data must be available, of good quality and representative of the situations sought to be analyzed. A limited and well-crafted exemption under fair use for informational analysis can alleviate such concerns.

Deriving insight from data is at the very nature of research performed by Canada’s academic research institutions, as well as the research activities of artificial intelligence companies like Element AI. AI research is performed in an iterative manner by allowing algorithms and ML systems to “learn” from the data. Indeed, such AI systems refine their analysis and output over time.

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1 In other contexts, the terms “text and data mining” are used as an equivalent, but it is our belief that this expression raises conceptual issues, given that (1) it appears to oppose text to data; and (2) mining is a term that does not adequately render the nature of the activities undertaken.
The starting point for the process, however, is always data. Without access to large quantities of reliable, real-world data, it is either difficult or impossible for AI companies to “teach” their algorithms how to solve real-world problems. Data thus sits at the heart of the AI “supply chain”, since it is a necessary component for the vast majority of AI applications.

The Canadian version of this “AI supply chain” is a world-leading example of public-private collaboration. Canada’s AI ecosystem depends on close interactions and collaboration between public and private spheres. Research, in this context, takes place in universities, in start-up incubators, and in private research labs. The line delineating these spheres is far from clear - our own company, for instance, has strong links with several university research labs, and several collaborative research projects.

The limited fair use exception we suggest should thus be agnostic as to the identity of who performs the informational analysis. Unduly limiting the purpose of informational analysis to “research purposes” will prevent the type of public/private collaborations that are at the core of Canada’s AI success.

### III. Informational Analysis and the Current Copyright Act

Like many cutting-edge technologies, informational analysis is not explicitly discussed in the Canadian Copyright Act. This creates considerable legal uncertainty, which in turn limits the ability of Canadian AI companies to access a basic, necessary resource to train their algorithms.

The Act protects copyrighted works, as well as compilations of works and compilations of data. Hence, when informational analysis is performed, it may be that the data upon which it relies sits within protected compilations or within the works themselves.

#### (i) Temporary Reproductions

First, since Canada’s current Copyright Act does not address informational analysis, it is unclear to what extent copyright “protects” the copyright holder from such activities. There are at least two exceptions which could potentially apply, but both are subject to considerable legal uncertainty, especially for R&D activities in the private sector.

The first exception covers “temporary reproductions for technological purposes”[^2]. This exception authorizes copyright users to make copies if: (i) those copies are essential parts of a technological process; (ii) the copies exist only for the duration of that process; and (iii) the only purpose of creating the copies is to “facilitate a use” that is not an infringement of copyright.

Step (i) will generally be satisfied, but given the nature of the copies of data made, step (ii) may prove problematic (considering that informational analysis provides inputs to other technical processes such as iterative learning by AI algorithms, it may not always be clear when copies need to be destroyed). The Copyright Board considered this exception in 2016, and interpreted it

[^2]: Copyright Act, RSC 1985, c C-42, s 30.71.
restrictively, which creates additional uncertainty over whether this exception applies to informational analysis. 3

(ii) Fair Dealing

The second relevant exception is fair dealing. The Supreme Court of Canada has explained that the Copyright Act’s fair dealing provisions are applied in a 2-step process. 4 In the first step, the user’s activities must qualify under one of the listed fair dealing purposes. This is a closed list of eight purposes, ranging from education to parody to news reporting. 5 Second, the user must demonstrate that their dealings with the copyright-protected material is fair. The fairness assessment is a multi-factor balancing test which considers the purpose of the dealing, the character of the dealing, the amount of the dealing, the nature of the work, available alternatives to the dealing, and the effect of the dealing on the work.

“Fair” dealing is inherently flexible and adaptive, since the fairness step depends on a judicial balancing of all relevant information. This flexibility could provide many benefits to an evolving technological activity like informational analysis while considering the interests of rights-holders.

It is far more difficult, however, to interpret a new “purpose” into the closed list of purposes. “Research” and “Private Study” are the only two possibilities from the currently approved fair dealing purposes that could apply to informational analysis. Informational analysis could very well take place for research purposes - but that may unduly limit the applicability of the exemption to the research itself, and limit its implementation in products and services. There is also similar uncertainty about the application of the “private study” purpose. It appears difficult to reconcile the plain reading of the expression “private study with the concept of training an AI algorithm on a data-mined set of information - certainly when it is towards a commercial aim.

Crucially, neither of these exceptions adequately addresses the status of products or services - the outputs of the process - that are developed using the insights generated through informational analysis. Even if the first use of data-driven insights for training of AI algorithms could qualify under research and private study, what of the commercialization of such AI algorithms? Failure to address the legal status of those products and services merely adds to the existing lack of clarity about the legal status of informational analysis. This effect is felt particularly heavily at the commercialization stage, since it discourages both data miners and their clients from investing in Canada.

5 Copyright Act, RSC 1985, c C-42, s 29-29.2.
IV. The Proposed Exception - a Fair and Balanced Approach

The Act can offer a coherent policy framework to foster AI R&D (through informational analysis) given that a new, limited exemption could sit within the Act’s existing fair dealing analytical framework, and could thus benefit from the past jurisprudence and interpretations of Canadian courts.

The steps in place in the fair dealing analytical framework were specifically crafted to ensure that the interests of rights-holders are properly considered. Indeed, one factor is the existence of available alternatives, through which Courts can assess whether it was essential to use the materials leveraged by informational analysis. Another factor is the impact of the dealing on the protected work. By building in the exemption within fair dealing, rights-holders can be assured that their interests will be weighed carefully. For example, if rights-holders specifically license their works for informational analysis, then it is less likely that the dealing will be fair.

Canadian courts are well-equipped to assess whether a given instance of informational analysis is fair, and can take account of the commercial or non-commercial nature of the activity as part of their assessment. Fundamentally, an informational analysis exception would also maintain the careful balance the Act and its interpretation has currently struck between the interests of copyright owners and copyright users. Remember: Informational analysis is about the information contained in a document, rather than the content of those documents, or how that information is expressed, or how such works are typically monetized.

Since copyright does not protect disembodied information or ideas, a protection for informational analysis does not affect the balance between those who own copyright and those who use it, since the users who would benefit from this exception are interested primarily in information, which has never been protected by copyright. This dichotomy between a work and the insight that can be gained from it (via informational analysis) is vital to the Act.

Furthermore, the exception should be media-neutral and apply to all categories of works. In reforming the Copyright Act, Parliament should maintain the current dichotomy between a work and data. This dichotomy stems from the definition of “compilation” under the Act, whereby it is clear that there exists a realm of data that are not works. Thus, the exemption should not remove this dichotomy - where data is not copyrighted in the first place, it does not fall within the ambit of the Act.

A carefully crafted exemption should also contain a prohibition against “contracting out” the right to informational analysis, stating that any contractual provision which purports to prohibit this exemption is unenforceable, more so when these provisions are found in “click-through” or “browse-wrap” agreements.

We share the public’s and governments’ growing concern for the respect of the privacy rights and personal information of citizens in the era of “big data”. The limited informational analysis

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exemption should not pre-empt or replace other essential statutory regimes such as PIPEDA. Recognizing informational analysis under the Act cannot and should not be interpreted in any way as an open buffet to the personal information of Canadians.

V. Why Limited Reform is Coherent with Canadian Policy Objectives

Informational analysis or data mining exceptions have existed for many years in key G7 countries like Japan and the UK, and are on the verge of being introduced more widely. Appendix 1 offers a high-level analysis of key jurisdictions to offer a comparative perspective. This growing list of foreign informational analysis exceptions highlights the need for Canada to act quickly, in order to secure its status as a global AI hub. This status cannot be taken for granted. While Canada has produced some of the leading scholars in the field of AI, Canada remains a relatively small economy which must compete globally in the race for AI talent and investment. Policy levers play an important role here. For instance, the Global Skills Strategy has been a massive boost to the recruitment ability of scale-up firms.

International competition pits Canada against much larger economies that can often meet or exceed Canada’s commitments on scalable or size-dependent incentives. By contrast, offering a clear and efficient set of legal rules around informational analysis is the kind of non-size-dependent advantage that can allow Canada to maintain pace with its larger rivals. If Canada increases legal certainty that covers both AI research and AI commercialization, while certain competitor jurisdictions fail to do so, Canada’s superior legal environment will not only support its local ecosystem, but inevitably attract talent and investment. Indeed, noted copyright scholar Michael Geist has emphasized the need for a Canadian informational analysis exception which will “offer sufficient flexibility to safely move from the lab or classroom to the market.”7 By allowing all kinds of users to invoke this exception, Canada positions itself to allow development and commercialization of AI technology and other data-driven innovations.

Recognizing a limited informational analysis fair dealing exception will echo and support research to grow Canada’s IP culture. This exemption can help all players of Canada’s AI ecosystem further test, train and research new innovative techniques, thereby connecting with the clear policy objectives of fostering a culture in Canada of innovation and intellectual property.

Lastly, we believe that the fair dealing framework embraces a delicate balancing act that has been thoughtfully shaped by Parliament and Canada’s courts.

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7 Michael Geist, “Copyright Law Poses a Barrier to Canada’s Artificial Intelligence Ambitions” (2017) michaelgeist.ca, available online here.
Appendix 1: International Survey of Data Mining
Exceptions

How Other Countries Protect and Promote Data Mining

Other countries have reacted to this legal uncertainty by introducing copyright exceptions that protect and encourage informational analysis (or that otherwise refer to it as data mining). Both Japan and the United Kingdom have created specific data mining exceptions. Ireland and the European Union are currently considering the introduction of data mining exceptions in their respective copyright legislation. These international examples provide Canada with guidance on best practices and on pitfalls to avoid.

1.1 Japan

Japan’s Copyright Act has included a data mining exception since 2009. This exception allows data mining of all types of copyrighted materials, except for databases which were created for the express purpose of data mining. Access to the exception is generous: the Japanese Act contains a broad description of data mining and does not restrict the exception to any particular type of user, nor to any particular purpose. Finally, the Japanese Act expressly authorizes making derivative works as part of the data mining process; this provides protection for the work product of data mining.

1.2 United Kingdom

The United Kingdom introduced a data mining exception in 2014. The UK Copyright Act itself does not define data mining, although the UK Intellectual Property Office has published an influential definition of data mining as being “the use of automated analytical techniques to analyse text and data for patterns, trends and other useful information.”

The UK exception applies to all types of copyrighted work, but in contrast to the Japanese exception, it only authorizes data mining for the purpose of “non-commercial research”. This excludes commercial activities or the commercialization of research that occurred under the aegis of this exception.

The UK exception also includes certain restrictions on how data mining must be carried out. The exception only applies if the data miner has “lawful access” to a work; where practicable, attribution must be provided by the data miner; and subsequent dealings in any copies made are

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8 See Appendix 1 at A1.1 for an English translation of the Japanese text of this exception.

9 Data mining is defined as “to extract information, concerned with languages, sounds, images or other elements constituting such information, from many works or other much information, and to make a comparison, a classification or other statistical analysis of such information”

10 See Appendix 1 at A1.2 for the text of the UK exception.

11 UKIPO, “Guidance: Exceptions to Copyright” (updated 18 November 2014), available online here.
heavily restricted. Unlike the Japanese exception, it does not address the ability to make derivative works.

The exception also contains a prohibition against “contracting out” of the data mining right, stating that any contractual provision which purports to prohibit data mining is unenforceable.

1.3 Ireland

Ireland is currently considering whether it should adopt a data mining exception. The text of the proposed exception was put forward by a committee struck to examine copyright reform in 2013, and is back under consideration today.

The proposed Irish exception applies to all types of copyrighted material, although the material must either be freely accessible on the internet or obtained via a “right of access or use”. The Irish exception specifies that this right of access can arise from “a licence or otherwise”, which raises questions about how what kinds of rights are sufficient to allow data mining to take place. The Irish exception defines data mining as “an algorithmic or technological process of analysis of a work or works, for the purposes of seeking to establish new facts, relationships, patterns, trends or anomalies, or for other similar or related purposes, in the work or works so analysed.”

The proposed Irish exception is based on fair dealing, and assimilates data mining to fair dealing for the use of education, research, or private study. The Irish exception would be available to all users and for all purposes, as long as those purposes qualify as fair dealing for education, research, or private study. Under Irish law, fair dealing is possible only where it “will not unreasonably prejudice the interests of the owner of the copyright.”\(^\text{12}\)

While the Irish data mining exception does not itself prohibit contracting out, the Irish Copyright Act contains a general prohibition against contracting out of any user’s right.\(^\text{13}\)

1.4 European Union

The European Commission proposed an initial text in 2016 which has subsequently been debated and amended by the European Parliament.\(^\text{14}\) The European Parliament has adopted an amended version of the Commission’s text on September 12, 2018.

The European Parliament’s text creates two different data mining exceptions. One is mandatory and must be introduced into the national laws of all EU members. The other exception is optional, and its introduction will depend on the individual policy choices of EU members. The major differences between the two exceptions is that mandatory one is very narrow, but cannot be modified by private contract, while the optional exception is very broad, but can be waived through private contracts.

\(^\text{12}\) Copyright and Related Rights Act, 2000, No 28 of 2000, s 50(4).

\(^\text{13}\) Copyright and Related Rights Act, 2000, No 28 of 2000, s 2(10).

The Mandatory EU Data Mining Exception

The mandatory EU exception is narrowly focused on certain kinds of uses and certain kinds of users. It allows for reproductions for the purpose of data mining, but only by non-profit or public-interest organizations, and then only if these organizations have an educational, cultural, or scientific mission. Additionally, a qualifying organization may only conduct data mining for the sole purpose of scientific research.

The mandatory exception thus prevents commercialization of research involving data mining, and entirely excludes the commercial sector from its protection. There are also provisions which are designed to prevent data mining from being used in the context of public-private partnerships, which prohibit the public institution from sharing its research results on a preferential basis with other organizations.

The mandatory exception contains a prohibition on contracting out. Thus, while the rights it grants are limited, they are at least consistent and not subject to private modification.

The Optional EU Data Mining Exception

The optional EU data mining exception contains none of the restrictions discussed above, and simply allows anyone to use data mining for any purpose, as long as two conditions are met: (1) the user has lawful access to the copyrighted work and (2) there is no reservation of rights by the copyright owner. This reservation of rights can either be contract, or a unilateral notice, including a unilateral notice via machine-readable means.

The optional EU exception has the benefit of wide scope, and would theoretically permit commercial data mining, or subsequent commercialization of data mining by non-profit organizations. However, because this exception is subject to a unilateral reservation of rights, its practical scope is likely to be limited. Many rights holders already insert prohibitions on data mining into their website terms and conditions, or database subscriber agreements. The result is that any exception which is subject to contracting out will quickly lose any practical applicability.

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15 Amended EU Directive at article 3(1) [restriction] and 2(1), 2(2) [definitions].
16 Amended EU Directive at article 3(1).
17 Amended EU Directive at article 3(1), paragraph 2.
18 Amended EU Directive at article 3(2).
19 Amended EU Directive at article 3a(1).
20 Amended EU Directive at article 3a(1).
Element AI

Element AI is a Montreal-based start-up of 400 people, with five offices in North America, Europe, Asia. We transform large organizations around the world by translating cutting-edge AI research into customizable, scalable and human-centric AI products.

Co-founded in 2016 by established entrepreneur Jean-François Gagné and leading AI researcher Yoshua Bengio in the deep learning hub of Montreal, we’re pioneering an AI-First world by turning the world’s most important AI research into transformative business applications.

With a renowned faculty fellow network (over 80 PHDs), the largest privately-owned Canadian artificial intelligence R&D lab, as well as a growing network of specialized business partners, we look to bring state-of-the art research from the academic world into commercial applications.

We aim to build humane, ethical, and explainable AI. We firmly believe the benefits of AI should be accessible to all and our goal is to democratize AI for everyone. As part of our efforts to democratize AI and make AI accessible for everyone, it’s important to us to make sure that we explore ways to use AI to help society. Problems like poverty, climate change, disease, and much more can leverage AI and machine learning to make these issues easier to fight against. In that spirit, we opened a lab dedicated to AI for Good earlier this year to work with NGOs to bring AI research into the non-profit world.

Our people-first mindset and a spirit of open collaboration towards the responsible development of AI has led us to take on a policy advisory role for a number of governments provincially and federally here at home, as well as globally.
Faits saillants

- **Une exemption équitable et ciblée dans la Loi sur le droit d'auteur** - Une exemption ciblée au sein de la Loi sur le droit d'auteur pour permettre l'analyse informationnelle contribuerait à assurer un environnement juridique prévisible pour que l'écosystème canadien en Intelligence Artificielle (IA) continue sa croissance sans précédent et puisse atteindre une maturité concurrentielle. Cette exemption limitée serait conforme au cadre d'utilisation équitable actuel de la Loi et bénéficierait de l'interprétation antérieure de ce cadre par les tribunaux canadiens.

- **Analyse informationnelle** - L’analyse informationnelle fait référence à la nécessité pour l’IA de s’appuyer sur des données de qualité. L’analyse informative englobe la dérivation d’informations à partir de données et d’œuvres et non l’utilisation et la commercialisation réelles de ces données et œuvres en tant que telles.

- **Besoin pressant de résoudre l’ambiguïté actuelle en vertu de la Loi** - Il n’est pas clair en droit si l’analyse informationnelle, en particulier pour des raisons commerciales, est autorisée. Cette ambiguïté décourage les investissements dans la R&D en IA et le fait de manière disproportionnée pour les petites entreprises canadiennes (alors que les grandes multinationales peuvent se permettre les batailles juridiques qui pourraient en découler).

- **Réfléchir la collaboration entre le secteur public et le secteur privé dans la R&D en IA** - L’exception ne devrait pas être spécifique quant à l’identité des personnes ou entités effectuant l’analyse informationnelle. Limiter indûment l'objectif de l'analyse informative empêchera les collaborations public / privé prometteuses et pourrait créer une dichotomie entre la recherche publique et privée, ce qui ne représente pas la pratique.

- **Soutenir la propriété intellectuelle de la culture canadienne** - L’exemption relative à l’utilisation équitable de l’information peut aider à démocratiser l’accès aux données pour l’écosystème canadien de l’IA. Les données sont essentielles pour mettre l’essai, la formation et la recherche de nouvelles techniques novatrices, en lien avec les objectifs stratégiques clairs de favoriser la culture canadienne d’innovation et de développement de la propriété intellectuelle.

- **Une exemption équilibrée qui ne compromet pas les communautés artistiques et créatives du Canada** - L’analyse informative ne devrait pas être utilisée pour remplacer ou refuser les revenus des titulaires de droits. L’IA est un allié naturel des communautés artistiques et créatives du Canada, en tant que moyen utilisé par les artistes et en tant qu’outil pour améliorer la détection des violations du droit d’auteur.

- **Consolider la position du Canada en tant qu’environnement favorable à la R&D en IA** - D’autres pays se disputent le talent et les investissements en IA, et des propositions équivalentes à une exemption d’analyse informative ont été adoptées dans d’autres juridictions, notamment au Japon.
Element AI

Element AI est une start-up de plus de 400 employés basée à Montréal qui compte cinq bureaux en Amérique du Nord, en Europe et en Asie. Nous sommes un fournisseur de solutions d’intelligence artificielle (IA) qui offre aux organisations un accès inégalé à des technologies de pointe.

Fondée à Montréal par Jean-François Gagné, entrepreneur aguerri, et Yoshua Bengio, chercheur réputé en intelligence artificielle, Element AI est à l’avant-garde d’un univers où l’IA sera au premier plan, transposant les plus importants travaux de recherche en IA à l’échelle mondiale, en applications transformatrices.

Forts de notre réseau de chercheurs universitaires renommés (plus de 80 PhDs), du plus important laboratoire privé de recherche et développement en intelligence artificielle au Canada et d’un réseau de partenaires d’affaires spécialisés qui ne cesse de croître, nous formons l’équipe idéale pour relever les défis de votre organisation en matière d’intelligence artificielle.

Nous visons à construire une IA humaine, éthique et explicable. Nous croyons fermement que les avantages de l’IA devraient être accessibles et notre objectif est de démocratiser l’IA pour tous. Dans le cadre de nos efforts pour démocratiser l’IA, il nous importe d’explorer les avenues d’utilisation de l’IA pour aider la société. Des problèmes tels que la pauvreté, les changements climatiques, les maladies et bien d’autres facteurs peuvent tirer avantage de l’IA et de l’apprentissage automatique pour faciliter la lutte contre ces problèmes. C’est dans cet esprit que nous avons ouvert un laboratoire de recherche dédié à ‘AI for Good’ pour travailler avec des ONG afin d’introduire la recherche en IA dans le monde à but non lucratif.

Notre esprit de leadership et de collaboration ouverte au développement responsable d’AI nous ont amenés à jouer un rôle consultatif auprès de plusieurs gouvernements provinciaux et fédéraux, d’ici et d’ailleurs.