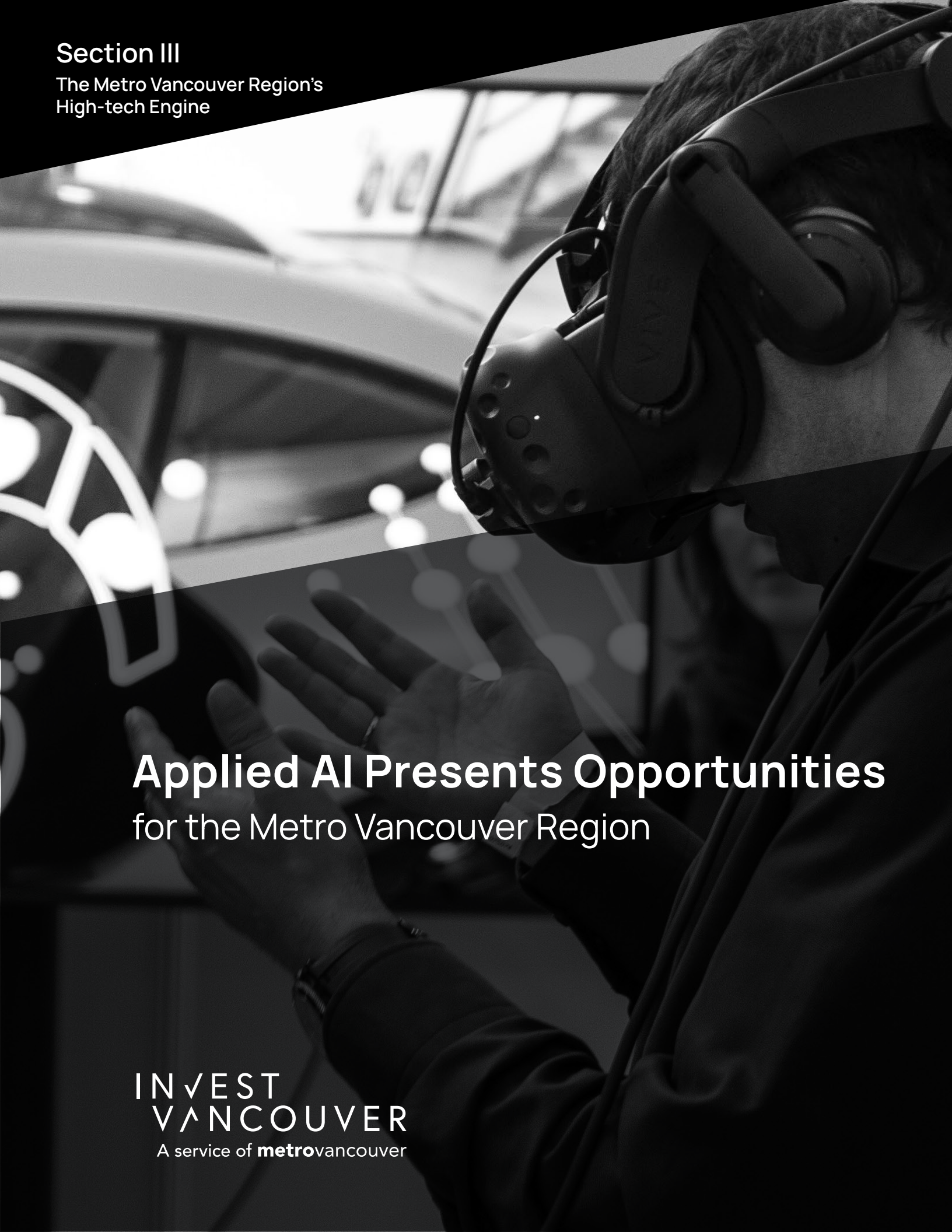
Section III

The Metro Vancouver Region's
High-tech Engine



Applied AI Presents Opportunities

for the Metro Vancouver Region

INVEST VANCOUVER

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Indigenous Territorial Recognition

Metro Vancouver acknowledges that the region's residents live, work, and learn on the shared territories of many Indigenous peoples, including 10 local First Nations: **qićəý'** (Katzie), **q̓ʷɑ:ńƛ̓əń** (Kwantlen), **kʷikʷəƛ̓əm** (Kwikwetlem), máthxwi (Matsqui), **xʷməθkʷəy̓əm** (Musqueam), qiqéyt (Qayqayt), se'mya'me (Semiahmoo), **Sḵwx̱wú7mesh Úxwumixw** (Squamish), **scəẃaθən məsteyəxʷ** (Tsawwassen) and **səlilwətaɬ** (Tsleil-Waututh).

Metro Vancouver respects the diverse and distinct histories, languages, and cultures of First Nations, Métis, and Inuit, which collectively enrich our lives and the region.

About Metro Vancouver

Metro Vancouver is a diverse organization that plans for and delivers regional utility services, including water, sewers and wastewater treatment, and solid waste management. It also regulates air quality, plans for urban growth, manages a regional parks system, delivers affordable housing, provides an economic development service through Invest Vancouver, and serves as a regional federation. The organization is a federation of 21 municipalities, one electoral area, and one treaty First Nation located in the region of the same name. The organization is governed by a Board of Directors of elected officials from each member jurisdiction.

About Invest Vancouver

Invest Vancouver is Metro Vancouver's regional economic development service. By attracting strategic investment in key export-oriented industries, conducting research and policy analysis, and fostering collaboration on a local, national, and global scale, Invest Vancouver is facilitating the creation of high-quality jobs to achieve a resilient regional economy that delivers prosperity for all residents of the Metro Vancouver region. Working closely with leaders across all levels of government in the region and beyond, Invest Vancouver is addressing regional concerns to increase economic resilience, strengthening strategic export-oriented industries, attracting word-class companies, and laying the foundation for a region where every resident can thrive in today's rapidly evolving global economy. Our data-driven, objective research aims to provide actionable intelligence to position the region for success in a rapidly evolving global economy.

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Overview & Methodology

This report snapshot investigates the rise of artificial intelligence (AI) and the region's applied AI sector as an economic development opportunity. While AI has been in development for years, the release of OpenAI's ChatGPT has put the technology in the spotlight. The rapid adoption of AI will bring numerous risks and opportunities. One clear risk is that of missing out, i.e. the risk of not benefiting from the potential productivity gains of AI integration. This section contemplates the implications of a gradual approach to integrating AI, cautioning that such hesitancy could land individuals and firms on the wrong side of a new digital divide. It then pivots to areas of opportunity, highlighting the possibilities of embracing AI and nurturing its deployment in domains where the region holds considerable expertise. By leveraging AI in resource extraction, construction, and healthcare, the region could drive advancement in these critical areas and create economic development opportunities.

The findings are informed by structured interviews conducted with founders and executives from firms with operations in the region, as well as leaders, professors, and knowledgeable representatives from industry groups, accelerators, academic institutions, and investment funds. Interviewees were offered anonymity to ensure candid assessments. The primary research was supplemented with secondary research that draws from academic, industry and government studies and reports, media coverage, presentations, and other public sources.

The report snapshot is extracted from Invest Vancouver's comprehensive analysis in "The Metro Vancouver Region's High-tech Engine: Boosting the Economic Landscape." Dive deeper into the full report to explore a data-driven analysis of the emerging technology hub in the region, and learn about the key factors that international tech firms consider when selecting a new location and how the Metro Vancouver region measures up in these areas.

AI's transformative potential

Artificial intelligence (AI) stands at the forefront of technological innovation, with the potential to significantly reshape not only the technology sector but myriad aspects of business and everyday life. Given the rapid evolution of AI and its profound implications, coupled with the Metro Vancouver region's noticeable advancements in applied AI, it is important to monitor emerging trends and opportunities.

The launch of OpenAI's ChatGPT has propelled AI into the limelight, sparking widespread interest in the ongoing AI revolution. The adoption of AI may be similar to the internet in its capacity to fundamentally reshape the economy and transform society. AI will enable the creation of novel services and give rise to entirely new industries, the same way the internet made possible e-commerce, social media, streaming services, and digital apps.[1] It will transform roles in existing industries, and introduce ethical, legal, and societal concerns.[2] As AI evolves and expands the boundaries of what is possible, it will precipitate additional risks and opportunities, many of which are unclear or unknown at this time. Even in this period of rapid change, however, there is a clear risk arising from not integrating AI.

This analysis consists of two parts, both focused on the implications of AI adoption in the Metro Vancouver region and BC.

1. The risks from moving slowly to integrate AI and the possible creation of a new digital divide.
2. The economic development opportunities in three domains – resource extraction, construction, and healthcare – where the region holds considerable expertise and the integration of AI could yield novel solutions to pressing societal challenges.

Uneven AI adoption could create a new digital divide

Uneven adoption of AI could create a new version of the digital divide, based on the capacity and willingness of individuals, firms, and countries to integrate AI into their systems and processes. The job market will reward people who can use AI to complete tasks more efficiently. Firms that embrace AI, especially those that move swiftly, stand to gain a competitive edge over those that approach AI adoption with hesitation or avoidance. Countries where people, firms and governments that integrate AI will be better positioned to benefit from productivity gains.

1 Just as Netflix supplanted Blockbuster and then provoked a transformation in entertainment consumption, people will use AI to create business models that will disrupt incumbents and reshape markets. Also like the internet, AI will spur many smaller changes through applications that improve existing services and make workers more efficient.

2 Examples include law enforcement's use of biased facial recognition models trained on problematic data sets; legal risks surrounding the unauthorized use of all manner of intellectual property to train models; new cybersecurity risks; and the potential to undermine the democratic process with malicious AI-generated images and videos indistinguishable from the real thing.

For individuals, the rapid technological change induced by AI may provoke fear of job losses because AI allows for the automation of an even wider variety of routine tasks across many disciplines. The use of AI may eliminate some roles, but it will also ease labour shortages. For example, in shipbuilding a single welder able to oversee multiple AI-controlled welding robots can overcome a shortage of maritime welders. More broadly, AI will underpin a shift from 'doing' to 'supervising' in multiple settings, including call centre workers who transition to monitoring responses from chatbots interacting with many customers simultaneously. Such changes will make workers more productive and may improve their job satisfaction, but it might not be seamless. Many workers will need new skills to navigate the evolving job landscape.

Already, there is growing evidence that AI can make users more productive. Programmers who use AI-based tools, for example, can complete routine and repetitive tasks as much as 50% faster than those who do not.[3] Knowledge workers using AI are more productive, complete tasks more quickly, and produce higher quality results.[4] Workers who are more productive are likely to do better in the job market, suggesting competition from AI-proficient humans is a bigger employment risk than clever computers displacing humans.

A 2023 World Economic Forum study highlights that the adoption of frontier technologies, such as AI, is driving transformation and will necessitate comprehensive upskilling as automation and AI reshape job roles.[5] If AI adoption is similar to the introduction of computers and internet-based technologies in the workplace, older workers and people from backgrounds that limit their opportunities for appropriate training and access to the technology are the most likely to find themselves on the wrong side of the AI divide. In a cruel irony, they may also be the ones who would benefit most from using AI.[6]

For firms, the risk is waking up on the wrong side of the new digital divide, with their competitors far ahead in adopting AI. McKinsey, a global consultancy, found that firms building up their digital and AI capabilities outperformed laggards in total shareholder returns across every sector they analyzed, often substantially.[7] At a minimum, businesses should be collecting, sorting, and curating business-specific data for training AI models and creating digital twins. Comprehensive operations data can be incredibly valuable, both for improving the specific business that collected it and for deriving insights applicable to others like it. Especially for first movers, the secondary revenue stream from business-specific datasets may rival their primary business. Beyond figuring out a data strategy, firms need to embrace AI and invest in training for their employees, with people working in the field describing it as "irresponsible" for any business not to make AI adoption a top priority.[8]

3 See, for example, McKinsey Digital, "Unleashing developer productivity with generative AI" (June 2023).

4 Fabrizio Dell'Acqua et al., "Navigating the Jagged Technological Frontier: Field Experimental Evidence of the Effects of AI on Knowledge Worker Productivity," *Harvard Business School Technology & Operations Management Unit Working Paper No. 24-013*, September 2023.

5 World Economic Forum, "Future of Jobs Report 2023" (May 2023).

6 Sida Peng et al. found that older and less experienced programmers benefitted the most from working with an AI programmer. See "The Impact of AI on Developer Productivity: Evidence from GitHub Copilot" arXiv.org, February 2023.

7 Bryce Hall et al., "Rewired and running ahead: Digital and AI leaders are leaving the rest behind," McKinsey & Company, January 12, 2024.

8 The panel at the Microsoft and Vancouver Tech Journal "Capturing the AI Opportunity in BC" event on February 13, 2024 emphasized the urgency of adopting an AI strategy and stressed the value of business data.

The urgency for AI adoption is acute for firms in both BC and Canada, where the prevalence of small firms and a more risk-averse business culture may hinder readiness to embrace AI. Overcoming these barriers is crucial to unlock the full potential of AI technologies. Notably, 98% of businesses in BC employed 50 or fewer workers in 2022. Smaller firms are slower to adopt new technologies (and AI in particular), and may lack the resources to pursue such investments.[9] Additionally, the Canadian business culture is more risk averse than in the US, affecting the pace of AI integration.

Large American firms seem to be moving more quickly to incorporate AI: 72% of US compared to just 35% of Canadian large firms reported using AI in their operations.[10] Invest Vancouver's interview with a Vancouver-based developer of a new AI-enabled service highlighted this discrepancy. One of their clients is a large firm with US and Canadian operations. The client's Canadian branch was still in preliminary discussions whereas the US branch had embraced and deployed the AI-based service.

Multiplied across individuals and firms, reluctance to adopt AI could see Canada forego a much-needed productivity windfall. In a public address in March 2024, the Bank of Canada noted that the country's business sector productivity was essentially the same as seven years earlier, and that our GDP per capita has weakened considerably compared to the US.[11] They called for coordinated efforts to fix this problem, including better use of technologies like generative AI.

Looking forward, boosting productivity is necessary to support higher Canadian wages and living standards. McKinsey estimates that AI-based automation could provide an annual boost to global productivity of 0.5% to 3.4% from 2023 to 2040, depending on adoption rate and worker redeployment.[12] To capitalize on this opportunity, our workforce needs to be adequately prepared to handle the major disruptions caused by this new technology.

While the risk of ending up on the wrong side of the AI divide should spur firms to action, there are plenty of reasons to be optimistic about AI and the implications for the regional economy.

AI as an economic development opportunity

The Metro Vancouver region and BC are poised to play a leading role in leveraging AI to tackle pressing societal challenges. Resource extraction, construction, and healthcare are just three applications where AI integration added to the region's existing industrial strengths, expertise, and skill sets could forge pathways to superior, more sustainable solutions. Innovations that enhance mining efficiency while mitigating its environmental footprint, accelerate building construction, and optimize healthcare delivery would be in high demand worldwide. Such advancements hold the promise of higher quality of life through enhanced housing affordability, improved healthcare accessibility, and reduced environmental degradation. For the region that hosts the companies supplying them, they would also foster job creation and economic resilience through exports.

9 Deloitte, Digital Equity: Empowering All Organizations to Succeed in the Digital Era (November 2023).

10 KPMG, "More than One Third of Canadian Businesses Experimenting with CHATGPT, KPMG Canada Survey Finds" (April 19, 2023).

11 In 1984, output per hour worked in Canada was 88% of US levels; by 2022, it had fallen to 71%. Over that same period, Canada's productivity lagged all G7 members except Italy. Senior Deputy Governor Carolyn Rogers, "Time to Break the Glass: Fixing Canada's Productivity Problem," Bank of Canada, March 26, 2024.

12 Michael Chui et al., "The Economic Potential of Generative AI: The Next Productivity Frontier," McKinsey & Company, June 14, 2023.

The region is already cultivating AI-powered solutions across myriad domains, despite the perception that AI innovation is concentrated elsewhere. The impression of the region as an outsider in AI stems from the region's peripheral role in the federal government's national AI development strategy, which primarily revolves around support for National Artificial Intelligence Institutes in Edmonton (Alberta Machine Intelligence Institute – AMII), Montreal (Mila), and Toronto (the Vector Institute). These institutes act as a magnet for researchers focussed on AI development, in contrast to our region, where Google poached leading AI academics from UBC in the early 2010s.

Yet, the region teems with vibrant AI initiatives. Vancouver-based **DIGITAL** uses federal funding to champion homegrown AI technologies as part of its overarching mission to catalyze R&D investment, foster technology adoption, and facilitate the re-skilling of Canadian talent. The UBC **Centre for Artificial Intelligence Decision-making and Action** (CAIDA) boasts over 100 professors and their research associates spanning 27 departments, schools, and institutes. At SFU's highly regarded **Big Data Hub**, industry, the public sector, and community groups collaborate with AI researchers pioneering solutions across multiple sectors.[13]

In the private sector, a diverse array of firms harness the power of AI, ranging from **Fujitsu's** AI research group to enterprises such as **Semios** and **Terramera** in agritech, **A&K Robotics** and **Sanctuary AI** in robotics, and **Variational AI** and **AbCellera** in life sciences. SaaS ventures like **Copilot AI** and **CharliAI**, digital content creators like **Lumen5**, and sustainability-focused enterprises like **intuitive** in waste management and **OnDeck** in fisheries management contribute to the rich tapestry of AI innovation. According to Capital Compass, a new investment-tracking tool from Innovate BC, the Metro Vancouver region hosts over 130 firms dedicated to developing cutting-edge products and services grounded in applied AI.

Matching the region's emerging excellence in applied AI with existing strengths and expertise could produce advancements in multiple areas.

Developing AI solutions for more efficient and sustainable mining

Separating the resource economy from the technology sector overlooks how technology not only boosts demand for resources but also fundamentally transforms the industry. In mining, technology is driving demand and altering the sector significantly. On the demand side, clean technology is poised to underpin a sustained boom in mining for critical minerals, even with significantly expanded recycling efforts. Within the industry, AI and machine learning are powering mining technology for enhanced recovery of metals. Mines are complex systems that generate vast data volumes and AI acts as an enabling technology that helps data-intensive industries glean insights from data to reach better outcomes.

Mining activity is abundant in BC, presenting an opportunity for technology companies in the region to work with the industry on tailored solutions. The BC mining sector offers fertile ground for the development of best-in-class mining technology, especially in mineral exploration and processing. The combination of industry experience and technological expertise should ensure an emphasis on practical solutions with tangible real-world applications. Mining technology is alluring on two fronts. First, the industry urgently needs enhanced sustainability and efficiency. Second, escalating global demand driven by the need for critical minerals to support the clean energy transition ensures firms specializing in mining technology have global reach almost from inception,

13 AIRankings.org rates the SFU Big Data Hub #1 in BC and #4 in Canada for AI capabilities.

with ample potential for export-driven growth.[14] Firms in BC are already working on AI-driven mining solutions (see box).

Hyperspectral Intelligence develops imaging technology for the mining and energy sectors, enabling precise rock analysis for safer and more efficient mining. Their cloud-based data processing offers real-time insights, enhancing sustainable resource extraction practices.

Ideon Technologies uses cosmic-ray muon tomography and artificial intelligence for subsurface imaging in mining. Their technology measures subatomic particles from supernovas to detect minerals and metals beneath the Earth's surface, offering a sustainable and more efficient alternative to conventional exploration methods.

MineSense leverages AI and machine learning in its technology to differentiate ore from waste in the mining process. Their system combines hardware and software, employing proprietary algorithms to analyze and report real-time data on ore grade and characteristics, thereby improving mining efficiency and decision-making.

Tackling housing affordability through AI-driven construction innovations

The Metro Vancouver region could be at the leading edge of new construction techniques made possible with applied AI. The region needs more housing, especially more affordable housing, to meet pent up demand from a growing population.[15] The housing issue is a complex one, and there are many challenges to overcome. No single solution will make housing plentiful and affordable. Yet, new building methods might reduce the time required for construction and mitigate the shortage of skilled workers in the building trades.[16] While these innovative construction techniques would address our local housing needs, the issues they target are not exclusive to our region. This presents an opportunity to export AI-driven construction solutions.

14 Canada Energy Regulator, "Market Snapshot: Critical Minerals are Key to the Global Energy Transition" (January 2023).

15 A recent RBC study found the cost of housing has reached all-time highs in Canada, including in Vancouver. To improve affordability, they call for a coordinated, multi-prong approach to increase housing supply, including the use of innovative technology such as artificial intelligence. RBC Economics, The Great Rebuild: Seven Ways to Fix Canada's Housing Shortage, (April 2024).

16 AI might also help streamline the approvals and permitting processes: Kelowna, BC is using AI to expedite building permits.

Next generation building techniques address affordability by making it possible to build more housing, more quickly, with fewer people. The Canada Mortgage and Housing Corporation (CMHC) forecasts that to make housing affordable by 2030, the country needs an additional 3.5 million homes beyond the number expected under business-as-usual scenario.[17] Housing affordability has also eroded globally, in large part due to a lack of supply.[18] The introduction of AI-powered building techniques will make it possible to build much more quickly. Faster is better because it helps bridge the gap between supply and demand that fuels rising prices, and longer construction periods escalate expenses, which developers pass on to buyers. Harnessing AI for routine and repetitive tasks will also make construction less labour intensive, which matters in this context because the shortage of skilled construction workers limits the pace of building. With the looming wave of retirements among the trades, expanded training programs will struggle to offset the losses. Building techniques that use less labour will make it possible to build more with greater efficiency at a lower cost, which should translate to a more affordable final product.

AI-based technology will be integrated throughout the future of building construction: in the initial design, in the permitting process, in the models used to schedule the onsite work, in the visualizations that allow designers and customers to tour a building before it is built; and, increasingly, in the construction itself.[19] These new buildings will be smart (with embedded monitoring technology), resilient (to earthquakes, floods, and fires), use sustainable materials (such as mass timber), and be designed to produce lower carbon emissions. Modular construction will see large components built offsite and then assembled onsite.

Moving part of the construction into a factory in modular construction will allow the use of AI-controlled robots in a matter already familiar from the automated production lines in the motor vehicle industry. The novel application is at the construction site. UBC researchers have already designed AI-controlled drones for inspection work and real-time onsite mapping. The drones can provide real time input to create a digital twin of the construction site. Using the digital twin, a separate AI system can safely control equipment, such as a crane, to autonomously unload and place large cement blocks. The same lab is working on autonomously controlled excavators and envisages moving on to equipment used throughout the building process. This work is at the leading edge of the coming transformation of the construction industry.

17 "For the purposes of this report, we define affordability in terms of the share of after-tax income that a household with average income would need to spend to buy the average house. The target is, by 2030, to return affordability to levels last seen around 2004, before the price growth that many Canadians have faced in the last decade and more." CMHC, Housing Shortages in Canada (September 2023).

18 World Economic Forum, What has Caused the Global Housing Crisis – and How Can We Fix It? (June 2022).

19 Rapid prototyping and testing of design options at the concept stage is a rapidly emerging use case. In permitting, the BC government and municipalities such as Kelowna are already exploring how the use of AI can reduce the time required to verify project compliance with municipal and provincial regulations, greatly increasing certainty and reducing processing time.

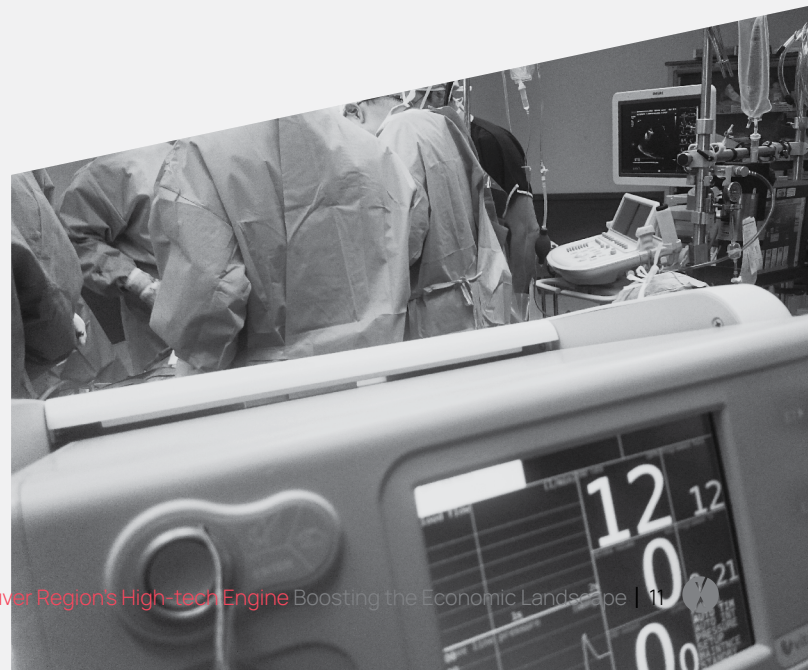
To address the housing issue, the most important development will be advancing new building techniques to the point where they reach economies of scale, i.e. they tip over from an expensive demonstration process to something routinely deployed across multiple building sites at lower costs. Accelerating the widespread deployment of these innovative solutions will bring the tipping point and the realization of efficiency gains closer.

The private and public sectors should explore ways to speed the adoption of these technologies within the region. Singapore, for example, is encouraging construction automation through financial incentives that reward off-site building.[20] In the public sector, novel approaches to procurement, demonstration projects, and routine deployment of these solutions can stimulate demand and assist in the achievement of economies of scale, thereby enhancing their market competitiveness. As part of the **CMHC Housing Supply Challenge**, for example, BC Housing, Metro Vancouver, Kope.ai, and other partners are developing a digital catalog of pre-qualified, off-site building components and a software tool to configure mid-rise buildings for prefabricated construction. The resulting standardization should spur growth in the industry, provide greater cost certainty, and make the delivery of housing more efficient.

The public interest in AI-integrated construction is threefold. First, it makes it possible to build more housing, more rapidly. Second, it makes it possible to build at lower cost once the techniques achieve scale, even if it is initially more expensive. Third, it allows the region to carve out a niche in which it excels, potentially becoming an engine for economic growth and innovation. The region is not alone in struggling to build housing, and there would be a substantial and growing export market for these technologies.

Harnessing AI to elevate patient care and strengthen the Life Sciences industry

Integrating AI with health services and harnessing health data could improve patient outcomes and bolster the life sciences industry. The strained provincial health system faces constant pressure to deliver care that is faster, better, more accessible, and more cost-effective. Strategic, small-scale experimentation with applied AI targeting patient outcomes could alleviate these pressures. Fraser Health is spearheading such testing in patient settings. Similarly, AI's efficacy in research and drug discovery hinges on access to comprehensive health data, an area where Providence Health Care is making progress.



20 Built Offsite, Singapore rewards offsite construction companies that embrace advanced offsite construction automation (September 2023).

BC might be in the optimal position for leveraging applied AI to enhance patient health, since the health sector in the province is small enough for effective coordination yet substantial enough to yield meaningful results. One interviewee cited the swift deployment of ultrasound machines across the province during the pandemic as the type of coordination BC handles better than larger jurisdictions. Consequently, the provincial health system could be an excellent environment for prototyping and commercializing applied AI.

Fraser Health, the largest of the five publicly funded regional health authorities in BC, serves more than two million people in 20 communities from Burnaby to Fraser Canyon. The health authority's Digital Patient and Provider Experience team is prototyping and testing AI and other technology implementations in the health system, including a pioneering enterprise digital twin and digital front door. This innovative use of predictive and prescriptive health analytics is driving improvements in health care access, delivery, and patient convenience.

Fraser Health is establishing partnerships to co-create AI solutions and recently won a 1.5-million-dollar prize from Scale AI to collaborate with Deloitte Canada. Through this collaboration, they are developing an AI-driven physician-scheduling tool to forecast patient demand accurately, which will improve the patient experience and reduce physician workloads.[21]

Adopting generative artificial intelligence, Fraser Health is using Google Cloud's Vertex AI and large language models (LLMs) that can learn policies and workflow processes, which are reducing clinicians' administrative workloads by simplifying the clinical documentation process within the MEDITECH Expanse EHR system.[22] In addition, in collaboration with Amazon Web Services, they have introduced a Virtual AI Assistant that is supporting staff and medical staff in quickly locating learning resources on MEDITECH Expanse functionality and workflows.[23]

Another notable example of Fraser Health's technological innovation is their deployment of the "GI Genius" system for colon cancer screening.[24] This initiative uses AI to assist medical teams by enhancing the accuracy of colonoscopy procedures through real-time, AI-assisted polyp detection. Such advancements underscore Fraser Health's commitment to employing cutting-edge technology to improve patient outcomes, with early detection playing a crucial role in increasing survival rates for colon cancer.

21 Hospital News, Scheduling for the future with artificial intelligence (December 2023).

22 Hospital Management, Fraser adopts generative AI for MEDITECH Expanse EHR (December 2023).

23 Fraser Health, New Virtual Assistant uses artificial intelligence to improve staff and medical staff learning experience with MEDITECH Expanse - Fraser Health Authority (February 2024).

24 Fraser Health, Improving colon cancer screening with artificial intelligence (December 2023).

Managing access to data presents a universal challenge: finding a balance between security and accessibility. Opting for inaction is convenient, but forfeits the potential health improvements and operational streamlining. In Canada, various models exist to address this challenge. Among them, **Providence Health Care**, a not-for-profit operator of hospitals and research centres in BC, stands out.[25] Providence Health Care Ventures, a subsidiary of Providence focused on technology partnerships and development, aims to further the integration of frontier technology such as AI with the healthcare system through a collaborative, secure, data-driven approach to improve patient outcomes. At the forefront of this innovation is their advanced Integrated Health Informatics Datalab (IHID), which our interviewees described as one of the most advanced health data programs in Canada.

IHID is designed to bridge the gap between the Life Science industry's need for health data access, while upholding the stringent privacy and ethical standards hospitals must adhere to. IHID's cloud-based system not only facilitates and streamlines data integration across multiple datasets, but also upholds patient privacy through de-identification and the implementation of strict controls, thereby ensuring a secure research environment. Companies are able to run models on IHID and can request restored access to the same dataset in the future to do additional testing. However, they are restricted from downloading the source health data from the cloud, so it remains within the secure environment. Only their researchers' derived research results leave the system at the conclusion of the project.

Providence's approach significantly enhances access to diverse datasets, providing firms with the certainty of cost and timing, which is crucial to effectively employ technologies like machine learning and AI to model potential outcomes and innovative products. Such an environment is highly conducive to innovation. Since it is attractive for both local and international firms, it could foster industry clustering and the emergence of anchor companies.

Concurrently, the use of AI allows Providence to enhance their own operational efficiencies. For example, they have begun using machine learning on their internal data to optimize the assignment of mobile blood draws based on physical layout and travel times within St. Paul's Hospital, which should result in significant internal efficiency gains and improved patient outcomes.

Thus, AI could improve healthcare in BC. From an economic development perspective, carefully managed and protected patient data could attract firms using AI to develop medical therapies. The diverse, multiethnic population of BC enhances the value of our patient data even further. Instead of conventional financial incentives such as tax credits or grants, the province could use access to this invaluable data as part of a compelling value proposition for attracting investment and pharmaceutical firms. Integrating data across health sector organizations in BC would make it more valuable, and would almost certainly repay the required investment and effort.

25 In addition to 18 health care sites, Providence Health Care includes the St. Paul's Foundation (fundraising), Providence Living (seniors' care), Providence Research (BC Centre of Excellence in HIV/AIDS, BC Centre on Substance Use, Centre for Heart Lung Innovation at UBC and St. Paul's Hospital, Advancing Health), Foundry (province-wide network of health and wellness services for young people), and Providence Health Care Ventures (commercialization of health care solutions).

Interested in reading more about the high-tech sector in the Metro Vancouver region?

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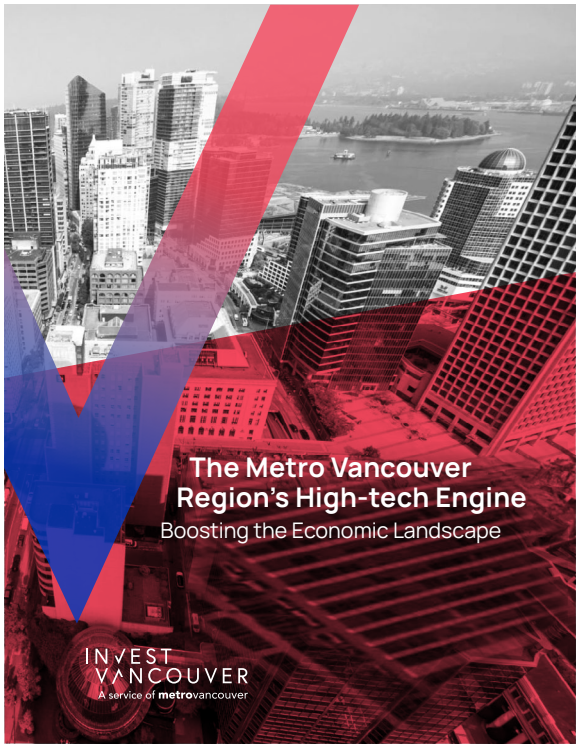

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