Ministry of Foreign Affairs

Canada - an AI pioneer now setting its sights on healthcare

Commissioned by the Netherlands Enterprise Agency

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An AI pioneer now setting its sights on healthcare

Canadian businesses, government agencies and research institutes were quick to identify AI as a driving force for innovation. In 2017, the government asked the Canadian Institute for Advanced Research (CIFAR) to develop and lead a $125 million National AI Strategy, the world's first. CIFAR works closely with Canada's three national AI Institutes — Amii in Alberta, Mila in Montréal and the Vector Institute in Toronto — as well as universities, hospitals and other organizations across the country.

AI has huge potential for healthcare in Canada, especially around deep learning. So to accelerate digital healthcare innovation, CIFAR is now recommending an AI health strategy, AI4H, as "the game changer for Canada".

Motion of digital data flow. Transferring of big data. 3D Rendering/Transfer and storage of data sets. Source: Shutterstock.

CANADA

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AI & Healthcare ecosystem

With Canadian healthcare systems under intense scrutiny during the Covid-19 pandemic and AI & Health becoming a real priority for key players, an ecosystem is being developed that can leverage institutes' complementary strengths. MaRS, North America's largest innovation hub, stands in Toronto's research park surrounded by world-class research hospitals, leading research institutes, and startups and other companies producing groundbreaking discoveries and solutions. The Vector Institute has made health a key strategic pillar, while the University of Toronto has received a $250-million donation to fund a new center for AI in healthcare.

One exciting example is Bluedot, which combines public health and medical expertise with advanced data analytics and AI to anticipate infectious disease risks. Bluedot was among the first to identify the emerging risk from COVID-19 and the very first worldwide to publish a paper accurately predicting its global spread. Bluedot is used by the Canadian government to help inform its decision-making.

Toronto: Canada's AI powerhouse

The AI national strategy has helped Canada focus its efforts, thematically and geographically, to create some of the world's best AI ecosystems. Toronto, Edmonton and Montreal have traditionally been the AI hubs, with Toronto the country's true AI powerhouse, with an ecosystem built on outstanding pioneering research; a community of top international scientists and ongoing influx of young talent; direct two-way exchange with industry; and innovation catalysts, like the Creative Destruction Lab which helps scale science- and technology-based businesses.

Canada was the world's first country to develop a national AI strategy

DEEPLEARNING

Driving breakthroughs from learning bionic arms to predicting ER patient numbers: it's all possible.

Many experts in deep learning see healthcare as one of the most promising areas for AI, with countless possible applications. At the University of Alberta, for example, researchers are testing an experimental bionic arm that uses machine learning to adapt to and anticipate an amputee's movements. While at the Humber River Hospital in Toronto powerful computers can now process and analyze data from across the hospital (admissions, waiting times, transfers, discharges, etc.) to accurately predict patient numbers, waiting times and bottlenecks in ER — two days beforehand.

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This publication was commissioned by the ministry of Foreign Affairs.
© Netherlands Enterprise Agency | March 2022

Publication number: RVO-067-2022/RP-INT

NL Enterprise Agency is a department of the Dutch ministry of Economic Affairs and Climate Policy that implements government policy for Agricultural, sustainability, innovation, and international business and cooperation. NL Enterprise Agency is the contact point for businesses, educational institutions and government bodies for information and advice, financing, networking and regulatory matters. Netherlands Enterprise Agency is part of the ministry of Economic Affairs and Climate Policy.