

VECTOR INSTITUTE: HEALTH STRATEGY PHASE I

There is an unprecedented opportunity for world-leading artificial intelligence (AI) research and innovation that capitalizes on the data advantage stemming from Ontario's large single-payer health system.

Working with partners in the health and academic sectors, Vector will support and enable health AI research and innovation across a wide range of topics. Potential health applications of AI include identifying people or groups at risk of disease, identifying interventions to help those at risk, supporting self-management of chronic diseases through real-time remote monitoring and other methods, tailoring treatment options based on an individual's genetic makeup, and improving the accuracy of diagnoses based on medical images, to name just a few.

Vector's Health Strategy Phase I focuses on three foundational interconnected health work streams – World-Class Research, Widespread Application, Analysis-Ready Accessible Data – which will lay the groundwork for a future Phase II Health Strategy with multi-year objectives in specific domains.

WORLD-CLASS RESEARCH

This work stream centres on assembling and supporting a critical mass of world-class AI researchers. Vector's role includes:

- Recruiting world-class machine learning researchers, with an emphasis on deep learning researchers, and amplifying their impact through funded graduate students working under their supervision;
- Helping health AI researchers develop proposals that secure external grant funding and yield high scientific merit publications and conference presentations; and,
- Hosting Health AI rounds and other events that help bring together the broader health research community to seed new collaborations.

WIDESPREAD APPLICATION

This work stream is focused on building the workforce that will ensure widespread adoption and application of AI in health. It is anchored in Vector's commitment to increase the number of AI-related master's programs graduates in fields including data science, natural language processing, and machine learning. Vector's role includes:

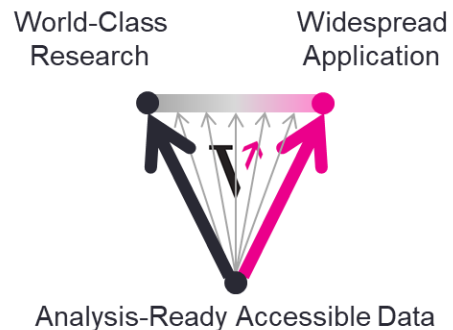
- Implementing short-term health AI pathfinder projects to help define the process through which world class research can be translated to widespread benefits for patients;
- Dramatically increasing the number of people with AI-related skills through AI-related master's programs and customized training at health organizations; and,
- Identifying and showcasing health AI application exemplars from across the health system.

ANALYSIS-READY ACCESSIBLE DATA

Data is a fundamental requirement for AI in any sector, and Ontario has multiple data health assets that have the potential to enable world-leading research and innovation. Vector will support the establishment of private and secure analysis-ready health data infrastructure for research and health system improvement projects. Working in partnership with regulators, health data holding organizations, policy makers, universities, research institutes and advisors who bring in the patient perspective, Vector will have a lead role in identifying priority data assets and facilitating appropriate access to them.

WHAT SUCCESS WILL LOOK LIKE

- Vector is recognized as a leading international centre for health AI research
- The number and talent level of people who can apply machine learning and other AI methods increases substantially
- Ontario employers, including publicly-funded health organizations, integrate new AI talent via internships and new, permanent, AI and data science roles
- Pathfinder projects – performed through partnerships with health stakeholders and selected in collaboration with health policy and decision makers – demonstrate the value of AI applications in health and help make the case for additional applications locally, nationally and internationally
- Priority data infrastructure is built once then used many times for machine learning research, AI research more broadly, innovation, and health system improvement projects
- Patient health outcomes are improved through the application of AI-related methods to local data in context
- Vector and health stakeholders have the foundation to establish the Phase II Health Strategy with multi-year strategic objectives for AI application to health topics



Please email health@vectorinstitute.ai to subscribe to our distribution list and receive information about upcoming events and opportunities including Health AI Rounds and AI-related intern placements.