Institute for Data Valorization IVADO

Canada's scientific and economic data science hub



Taking AI to the Next Level: Machine Learning + Operations Research

Taking intelligent decisions requires two ingredients:



Understanding how the world works - machine learning



Taking optimal decisions based on that knowledge - operations research "

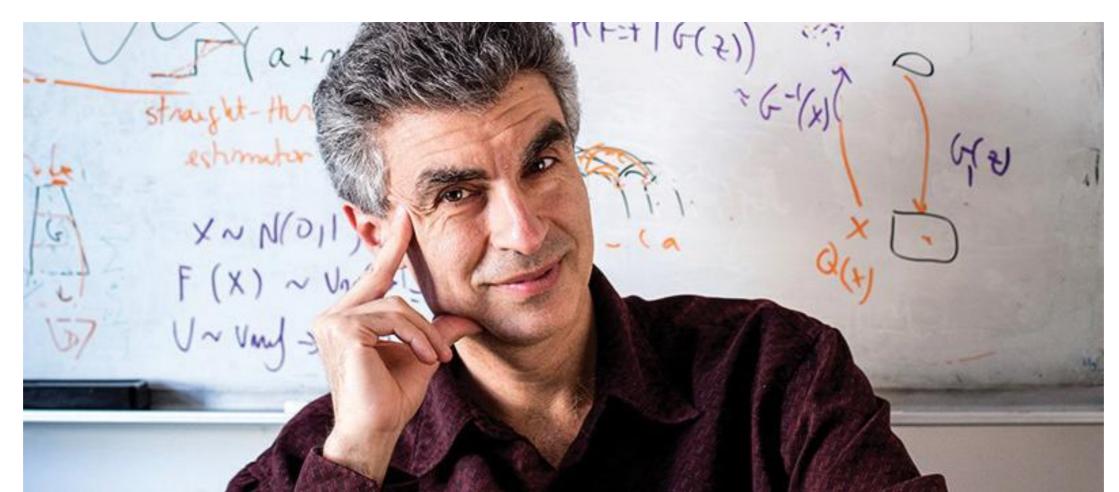
> The proposed research capitalizes on the synergy between these two disciplines, at the intersection of applied mathematics and computer science

"

Yoshua Bengio as Scientific Program Leader

- Member of pioneering trio who invented deep learning
- Only one of the trio to stay in academia despite pull from industry
- Among the most cited computer scientists in Canada:
- h-index=84
- 42,000 citations

- Canada Research Chair since 2000
- •NSERC Chair 2005-2015
- •Head of the Montreal Institute of Learning Algorithms
- Program Co-director and Senior Fellow, CIFAR



• One of only four Canadians invited to last Bilderberg meeting, a select forum of world leaders discussing megatrends and major issues facing the world, to address the economic and political impact of AI

Operations research: Taking optimal decisions in a complex context

Canada Excellence Research Chair in Data Science for Real-Time Decision-Making at Polytechnique Montréal, Dr. Andrea Lodi holds Canada's main chair in Operations Research.

Jean-François Cordeau

holder of Canada Research Chair in Logistics and Transportation was appointed to the College of New Scholars, Artists and Scientists of the Royal Society of Canada.

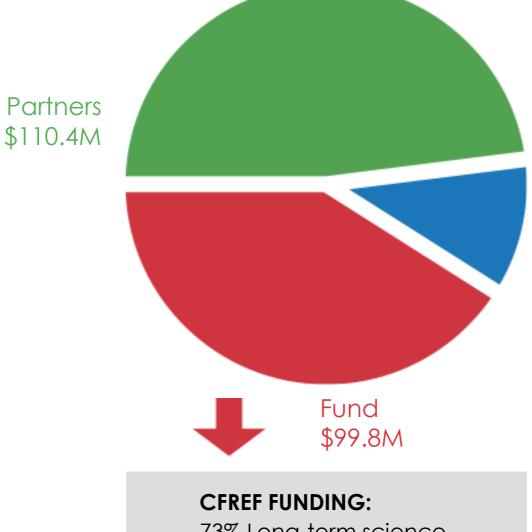
Pr François Soumis, IVADO's general director received the Prix Lionel-Boulet—one of the highest awards handed out to researchers by the government of Québecin recognition of his career, research results, leadership in scientific development and contribution to economic growth in Québec.







Data Serving Canadians: **\$240M**



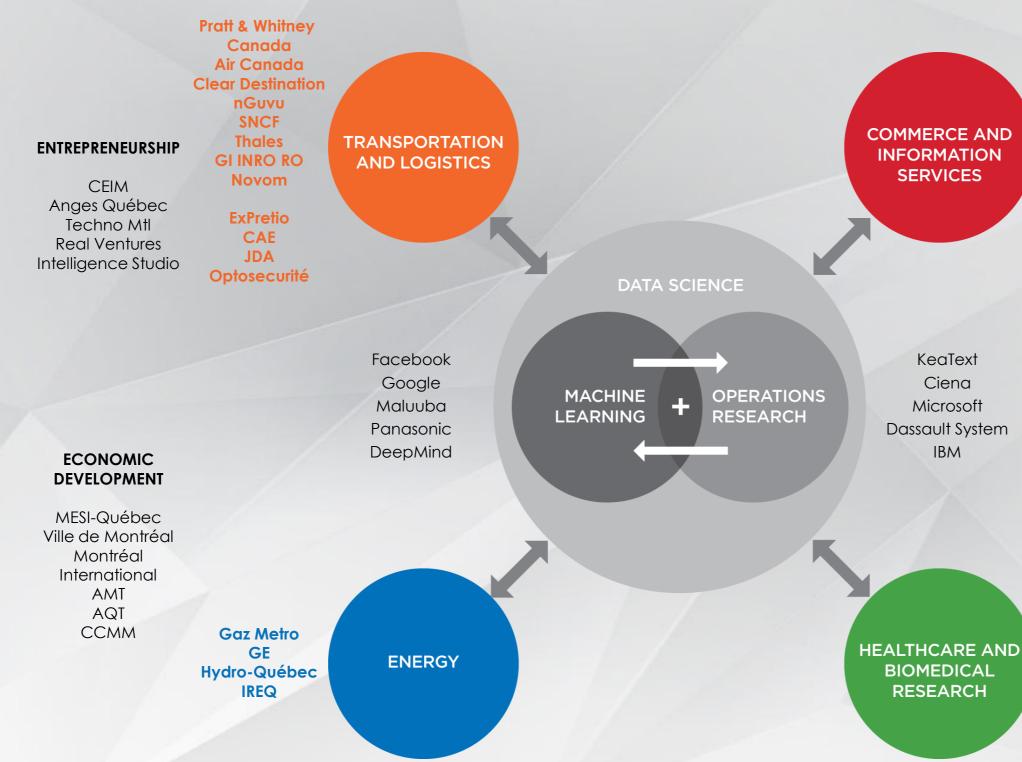
73% Long-term science 27% Transfer to industry 25 New faculty



Campus \$30.1*M*

IVADO Fundamental **Data Science – Applied**

With a strong innovation ecosystem of more than 70 partners



Banque Nationale du Canada Aimia **Squarepoint Great-West** Cogeco Intact Assurance **Power Financial** Ventures Caisse de dépôt du Québec

RESEARCH COLLABORATIONS

U. McGill U. Alberta CHU-Ste-Justine MHICC INESSS CRIM CRCHUM Sick Kids CIFAR Calcul Québec FRQ

INTERNATIONAL

EU COST C15210 EU COST TD 1207 Zuse Institute Berlin New York University Unités Mixtes Internationales France-Québec Université libre de Bruxelles

AmorChem AstraZeneca **Bristol-Myers** Squibb **CAE Healthcare** Merck Imagia **Humanitas**

IVADO Governance

SCIENTIFIC ADVISORY BOARD

Scientific Program Leader CIRRELT GERAD CERC MILA Scientific Representatives - Biomedical - Commerce - Energy - Transportation & Logistics Industry Representatives (2) McGill And UofA Representatives (2) General Director

SUB COMMITTEES

Faculty and Researcher Recruitment Scholarships Training Mentoring Diversity Projects Ethics

BOARD OF DIRECTORS

VP Research UdeM Research Director Polytechnique Research Director HEC Montréal Scientific Program Leader Technology Transfer Program Leader General Director Industry Representatives (2)

> Canada – CFREF Observer Québec –MESI Observer

STEERING COMMITTEE

General Director Executive Director Scientific Program Leader Technology Transfer Program Leader

GENERAL DIRECTOR

IVADO Operational team Executive Director

Strategic Development Officer

Business Development Officer

Associate Business Development Officer Budget Coordinator

> Knowledge Mobilization Coordinator

Administrative Assistant

Communications Coordinator

Mentoring Outreach Coordinator

Industry Oriented Training Coordinator

Entrepreneurship

Programs Coordinator

International Advisory Council

International experts (6)

Technology Transfer Advisory Board

Technology Transfer Program Leader Industry Representatives - Biomedical - Commerce - Energy - Transportation & Logistics Sector Scientific Representatives (4) General Director

SUB COMMITTEES

Entrepreneurship Projects Partnerships

IVADO Overview

Train the new generation of data scientists

Muster a pool of multidisciplinary data science talent

Animate a collaborative environment for industry and academic partners to leverage investments

Set the tone for leading-edge research in big data \succ

Position Canada's strong leadership in big data, making a difference in the new knowledge-based economy

