Toronto AI Landscape

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Paragon

BY RIVIERA PARTNERS

Twelve things to know about **Toronto AI** Landscape

01 Cohere, Tenstorrent, Waabi, Deep Genomics, Ada, BenchSci, Vector Institute, Xanadu are key to Toronto's AI ecosystem

02 Companies like Cohere, Tenstorrent, Waabi, Deep Genomics, BenchSci, Xanadu are doing original R&D and innovation

03 U of T is key in fueling the pipeline of AI talent with TD, RBC, and CIBC employing most of this talent

04 Aidan Gomez, Geoffrey Hinton, Yoshua Bengio, Richard Zemel are among the key builders behind shaping Toronto AI landscape

05 The Toronto AI market is Product- focused heavy followed by Research, and Services/ Consulting

06 **Compensation:** Total packages (base + equity) in Toronto's AI sector exceeds USD 200K for senior engineers and research scientists. Median base and equity pay accelerate steeply at senior levels across both AI Engineering and Research roles

07 Toronto's AI ecosystem is tightly knit with universities, institutes, and corporations working collaboratively

08 Toronto still feeds Silicon Valley but also attracts top U.S. & Global AI talent

09 Most startups build around applied AI; Cohere remains the key player building foundational models

10 Talent retention, funding, immigration, infra-access, and regulatory uncertainty remains key risks

11 From stalled federal law to new safety, privacy, and provincial mandates are shaping AI development

12 Academic-industry fusion, Applied AI strength, talent growth, collaborative ecosystem, and cost effectiveness set Toronto apart from some of the other AI talent hubs

Toronto hosts headquarters of 450+ AI Companies, has highest concentration in Canada

Company	Description	Founding Year
cohere	Cohere builds cutting-edge large language models and NLP solutions	2019
tenstorrent	Tenstorrent develops specialized processors and open-source software stacks for artificial intelligence applications	2016
waabi	Waabi is an autonomous trucking startup that develops next-generation self-driving technology powered by generative AI for the physical world	2021
deep genomics	Deep Genomics is an AI-driven genetic medicine company that uses its proprietary BigRNA platform to discover and program RNA-based therapies for genetic diseases	2015
ada	Ada is an AI customer service automation platform that enables enterprises to deploy no-code, conversational AI chatbots across multiple channels and languages	2016
BenchSci	BenchSci offers ASCEND, a GenAI-driven R&D platform accelerating preclinical drug discovery by extracting and organizing biological insights from scientific literature	2015
VECTOR INSTITUTE	Vector Institute is an independent, not-for-profit AI research organization	2017
XANADU	Xanadu is a computing company delivering photonic quantum hardware and software tools like PennyLane via its Xanadu Cloud platform	2016
centML Acquired by Nvidia	CentML is a startup developing tools to decrease the cost and improve the performance of deploying machine learning models	2022
layer 6 AI at TD Acquired by TD Bank	Layer 6 serves as TD Bank Group's AI center of excellence, specializing in deep learning, generative AI, trustworthy AI, and natural language processing	2011

Sources: CVCA Central, Desktop Research; Note: The company list is non-exhaustive

AI Powerhouses based out of Toronto

Cohere, Waabi, Deep Genomics, Xanadu, BenchSci **stand apart from others riding the hype**

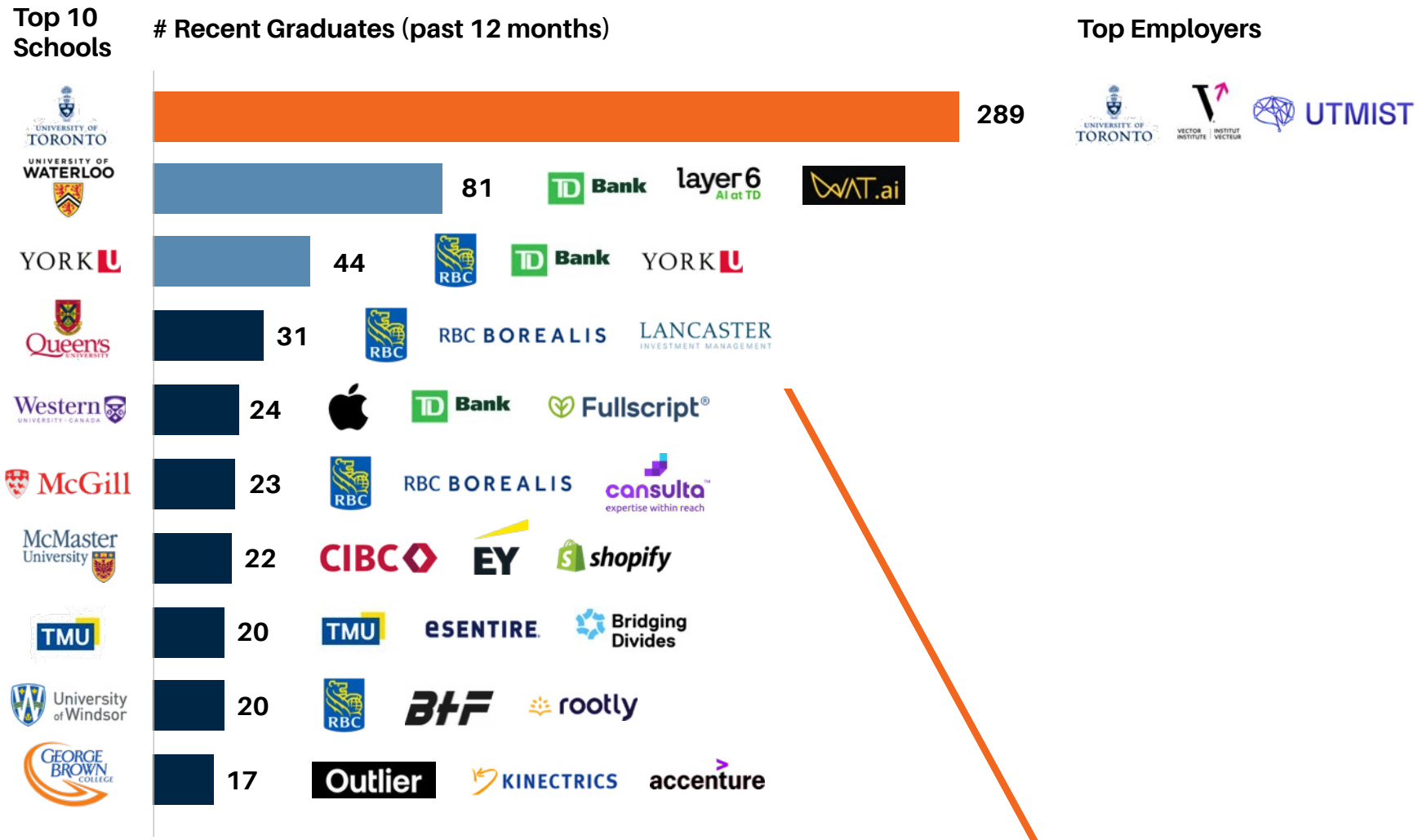
cohere	• **Cohere Labs and research initiatives**, alongside external programs like the Scholars and Catalyst Grants, **demonstrate involvement in building new ML methods,** not just repackaging existing AI • In Aug 2025, Cohere signed a **MoU with the Government of Canada to transform the public sector** using sovereign AI, signifying the deployment of its models in government services
tenstorrent	• Tenstorrent is building **next-generation AI processors** and **system architectures**, led by legendary chip designer Jim Keller. • Unlike hype-driven firms that integrate third-party AI models, Tenstorrent is creating **foundational infrastructure for global AI workloads,** competing with Nvidia, AMD, and Intel at the silicon level
waabi	• Waabi is led by **U of T professor Raquel Urtasun** (**Vector Institute's co-founder**). It is acclaimed for its **novel AI-first approach to self-driving**, including a proprietary "Waabi Driver" AI and the Waabi World simulator for virtual driving tests • **Waabi's closed-loop simulation** is touted as a next-generation, high-fidelity environment to train self-driving AI, a **clear technical innovation**
deep genomics	• Deep Genomics, founded by **U of T professor Brendan Frey** (**Vector Institute's co-founder**), pioneered applying deep learning to genetics, with numerous **peer-reviewed papers and patents in AI-driven drug discovery** • The company's **AI platform has yielded tangible scientific results** – for instance, it identified a novel therapeutic candidate for Wilson's disease
BenchSci	• Founded by U of T alumni through the Creative Destruction Lab, **BenchSci's proprietary ASCEND** understands the entire history of biomedical experiments to create a scalable AI assistant for preclinical organizations • BenchSci **partners with leading pharma firms such as Novo Nordisk**, where its platform has delivered measurable productivity gains (**up to 60% improvement**) **in preclinical R&D workflows**
XANADU	• Xanadu's team has **a strong research orientation**, having their breakthroughs published in Nature (the fourth such paper featuring Xanadu's work in 2025) • The company **collaborates with academia and government labs** (e.g. a UofT-NRC partnership on quantum algorithms and has **significant R&D contracts** (**such as with US Air Force Research Laboratory**)

In contrast, some Toronto companies market themselves around "AI" but have little original R&D or IP. These firms typically use existing AI services or superficial customizations, without academic partnerships or publications to show for it.

Examples include - Ample Insight, Wysdom AI, Ada, Fobi AI, etc.

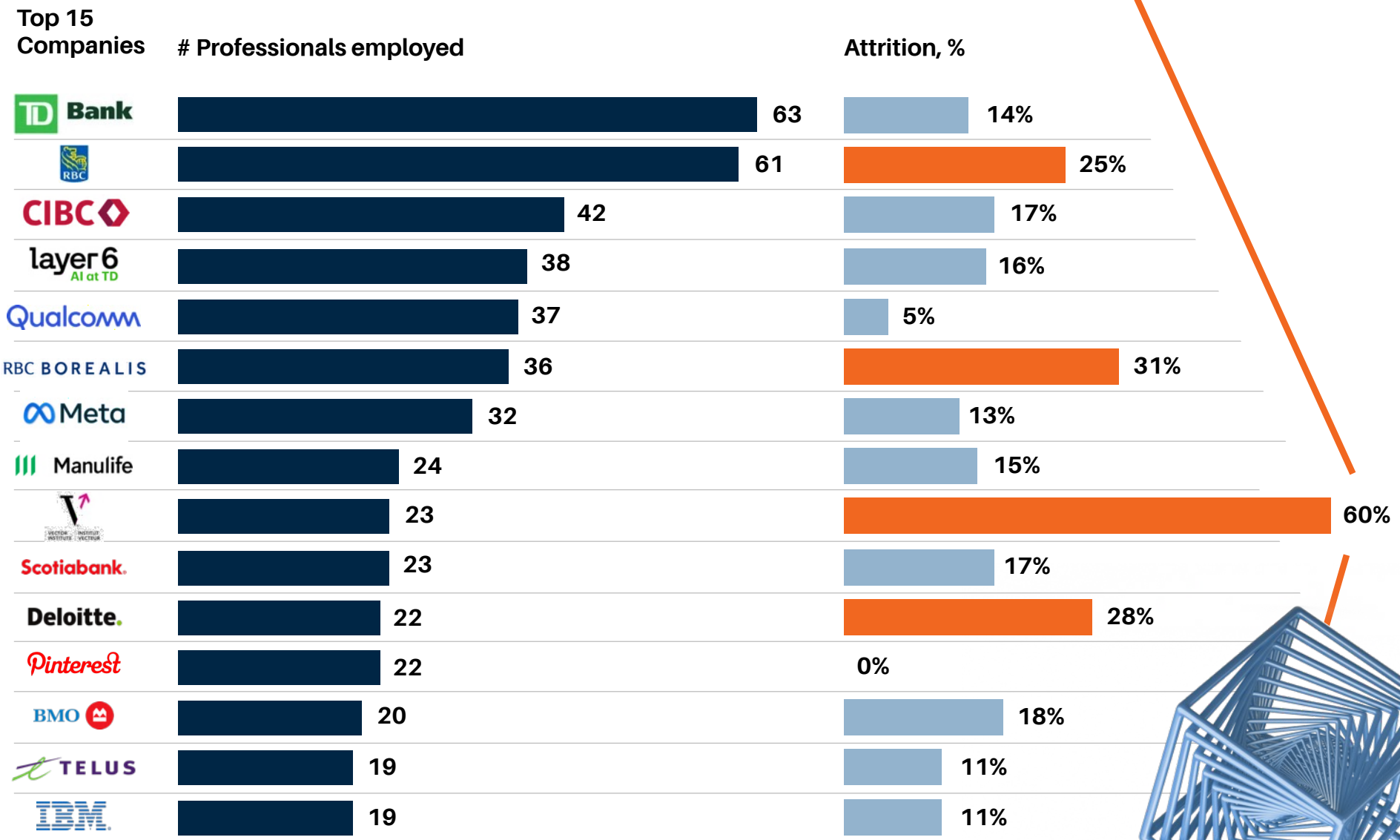
Sources: Company Website, Desktop Research; Note: The company list is non-exhaustive

U of T is **key in fueling the pipeline** of AI talent in Toronto



Sources: LinkedIn Insights; Note: List of schools is non-exhaustive; Total professionals who have AI/ML job titles on LinkedIn in Toronto are: ~2,780, Recent Graduates are professionals who attended this school and have listed a degree end date on their LI profile within the past 12 months, Top Employers are top 3 companies with largest # professionals who attended this school.

TD, RBC, CIBC among others are **key talent hubs** to find the right talent



Sources: LinkedIn Insights; Note: List of companies is non-exhaustive; Total professionals who have AI/ML job titles on LinkedIn in Toronto are: ~2,780, # Professionals employed are people with an active position at this company listed on their LI profile. Attrition is the count of employee departures divided by the average employee headcount over the past 12 months. Attrition estimates may be below actual attrition due to the time lag between when a professional departs and when they update their LinkedIn profile.

Builders **behind shaping** Toronto AI landscape

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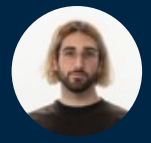


Aidan Gomez

Co-Founder & CEO

U of T alumnus and co-author of the "Attention Is All You Need" Transformer paper

Leads Cohere's development of proprietary large language models

cohere

Geoffrey Hinton

Emeritus Professor, U of T

Ex-Google Brain VP

Widely dubbed the "Godfather of AI" and 2024 Nobel Prize laureate

UNIVERSITY OF TORONTO

Yoshua Bengio

Université de Montréal Professor, Founder of Mila

Founder of Mila, one of the world's largest deep learning research institutes

Université de Montréal · Mila

Richard Zemel

U of T Professor, Co-Founder of Vector Institute

Pioneer in machine learning research, with influential work on representation learning, fairness in AI, and generative models

UNIVERSITY OF TORONTO · VECTOR INSTITUTE

Raquel Urtasun

Founder & CEO

U of T professor and Vector Institute co-founder; former Uber ATG chief scientist

Built Waabi Driver and Waabi World, a closed-loop AI-first simulator for autonomous trucks

Waabi

Christian Weedbrook

Founder & CEO

Physicist specializing in quantum optics, founded Xanadu to build photonic quantum computers

XANADU

Brendan Frey

Founder & Chief Innovation Officer

U of T professor and Vector Institute co-founder

Pioneered deep learning for genomics

deep genomics

Liran Belenzon

Co-Founder & CEO

Founded BenchSci via U of T's Creative Destruction Lab

Leads ASCEND, a proprietary biomedical GenAI assistant built on multimodal language models and knowledge graphs

BenchSci

Ivan Zhang

Co-Founder

U of T computer science alumnus; co-founded Cohere alongside Aidan Gomez and Nick Frosst

Built the engineering and infrastructure backbone of Cohere

cohere

Jim Keller

CEO

Legendary chip architect (AMD, Apple, Tesla) now driving Toronto's AI hardware firm

tenstorrent

Sources: LinkedIn, Desktop Research; Note: The list of people is non-exhaustive

Builders **behind shaping** Toronto AI landscape

2/2

Sanja Fidler

VP AI Research

Associate Professor at U of T; VP of AI Research at NVIDIA Toronto

Leader in computer vision and graphics AI research

Jimmy Ba

Co-Founder

U of T professor; co-author of Adam optimizer, a widely used ML algorithm

Left Vector to join Elon Musk's xAI, working on frontier model research

Alán Aspuru-Guzik

Senior Director, Q uantum Chemistry

U of T Professor applying AI to chemistry, quantum physics, and materials science

Leads the "Matter Lab," advancing AI for scientific discovery

David Duvenaud

Associate Professor, U of T

U of T professor; co-inventor of Neural Ordinary Differential Equations (Neural ODEs)

Research spans Bayesian deep learning and scientific ML

Roger Grosse

Associate Professor, U of T

U of T professor; focuses on scalable probabilistic modeling and deep learning

Core faculty at Vector Institute, contributing to ML interpretability and theory

Tomi Poutanen

Co-Founder & CEO

Co-founder of Layer 6 (acquired by TD Bank)

Former Chief AI Officer at TD, leading adoption of AI in Canadian financial services

Garth Gibson

Professor, Carnegie Mellon University

Former President and CEO at the Vector Institute for AI

Recognized for his contributions to scalable computing research

Phil Blunsom

Chief Scientist

Professor of Computer Science at the University of Oxford

Previously Principal Researcher at DeepMind, renowned for work in natural language processing

Jordan Jacobs

Co-Founder

Co-founded Layer 6 AI

Director of the Canadian Institute for Advanced Research (CIFAR)

Sources: LinkedIn, Desktop Research; Note: The list of people is non-exhaustive

The Toronto AI market is **product-focused** heavy followed by research, and services/consulting

Product Focused AI

Largest and fastest-growing segment in Toronto AI – companies are building products that directly serve enterprises, biotech, fintech, or government.

cohere	Enterprise LLM platform
waabi	Autonomous Trucking Software
BenchSci	AI Platforms for Drug Discovery/ Biomedical Research
deep genomics	
Ecopia	Geospatial mapping
ada	Customer Service AI

Research Focused AI

Smaller but high-profile cluster of companies and labs focused on advancing the science of AI itself.

cohere	Publishes new multilingual and domain-specific LLM research
waabi	Simulation-first methods for autonomous driving, ML research applied to safety
XANADU	Photonic quantum computers + Nature publications
VECTOR INSTITUTE	Research in generative models, reinforcement learning, and healthcare AI

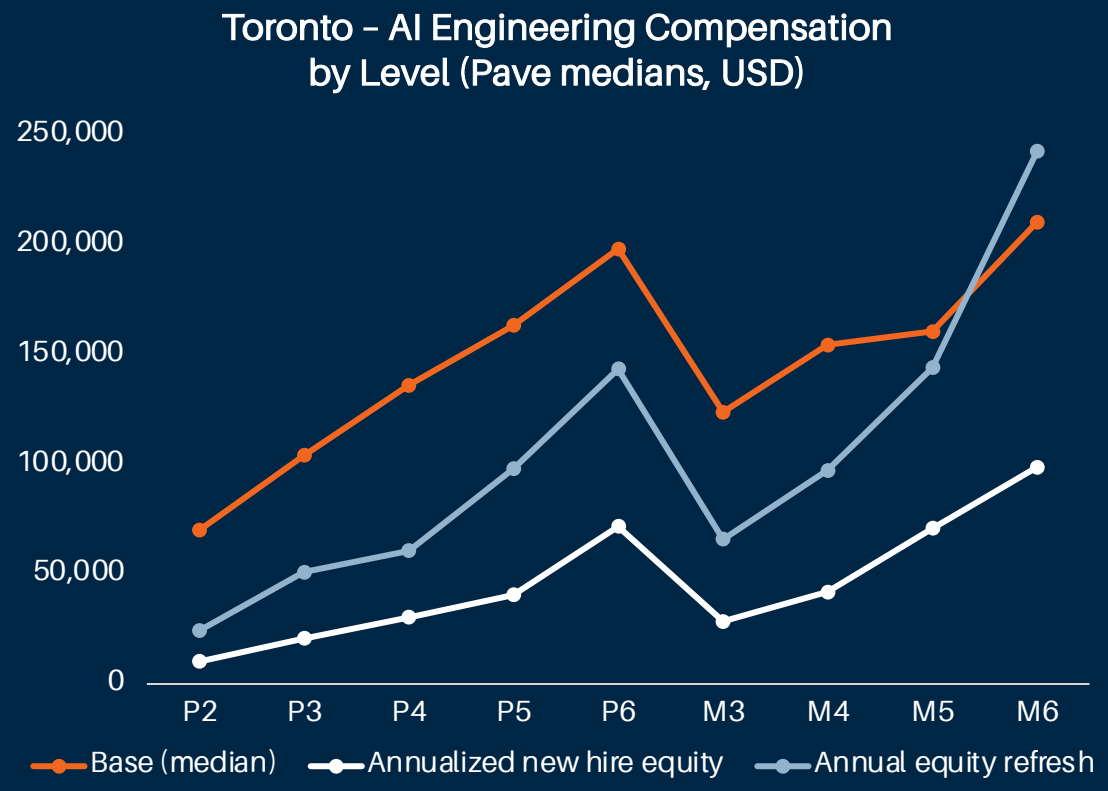
Service Focused AI

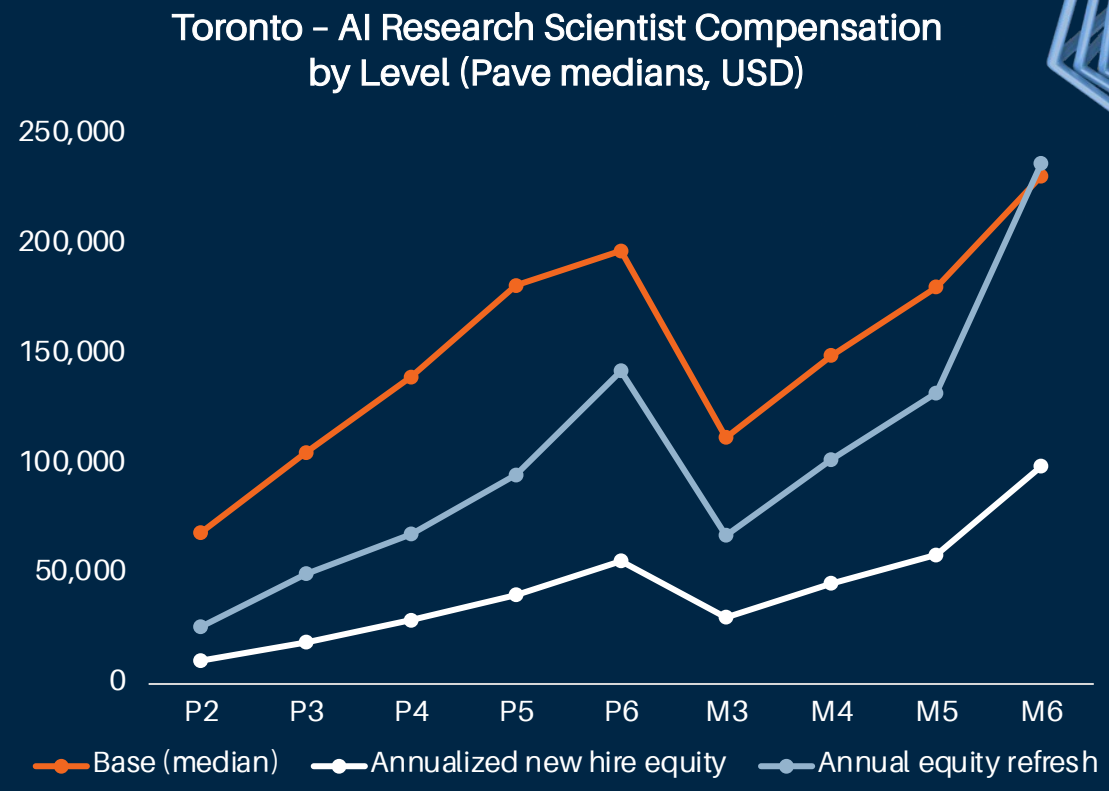
A meaningful slice of the ecosystem is made up of **firms that integrate existing AI tools for clients,** often with minimal proprietary research.

ample insight	AI Consulting & Custom Model Development
WYSDOM.AI	Chatbot Operations Management, acquired by Calabrio
Deloitte.	
accenture	

Sources: CVCA Central, Vector Institute, Company Website, Desktop Research

Total packages (base + equity) exceeds **USD 200K** for senior AI engineers and AI research scientists. Median base and equity pay accelerate steeply at senior levels across both roles





Sources: Pave, Desktop Research

The **AI ecosystem** is tightly knit with universities, institutes, and corporations working collaboratively

Academic Collaboration

Toronto's AI ecosystem is tightly interconnected – universities, institutes, and companies collaborate on research, commercialization, and talent development.

Corporate & Govt. Programs

The AI boom in Toronto has been fueled by public-private partnerships at multiple levels.

Startup Community Networks

Toronto's AI startups are tightly knit, with programs fostering shared learning, mentorship, growth.

Key examples:

- Vector Institute (founded 2017 by U of T professors) anchors Toronto's AI network, retaining talent, linking research to applications, and partnering with Ontario universities like Queen's, Waterloo, etc. to grow the pipeline.
- In 2024, U of T's incubator (UTEST), Vector, and Toronto Innovation Acceleration Partners (TIAP) partnered to mentor and fund AI ventures.
- Shared spaces: The upcoming Schwartz Reisman Innovation Campus will co-locate U of T labs and startups, further erasing academic – industry boundaries.
- Industry partnerships: Google, Microsoft, and Amazon run AI labs in Toronto, often in collaboration with U of T or Vector.

- Pan-Canadian AI Strategy, launched in 2017 by the federal government, set up AI institutes in three cities (Vector in Toronto, Mila in Montreal, and Amii in Edmonton) to foster a networked national research community.
- Vector is funded by a mix of government (Province of Ontario and Government of Canada) and leading industry sponsors from across multiple sectors.
- The MaRS Discovery District, supported by public funding and corporate sponsorships, serves as a neutral ground where startups, researchers, and big companies mingle.

- The Applied AI Association (AAIA) Toronto: Connects researchers, practitioners, and businesses on applied AI.
- Toronto Machine Learning Summit (TMLS) and AI Meetups draw engineers, researchers, and founders to discuss the latest advances.
- Creative Destruction Lab (CDL) at University of Toronto's Rotman School has a program pairing AI startups with mentors/investors.
- NextAI (NEXT Canada) provides Intensive founder training and venture support, effectively creating a tight peer group.
- DMZ (Toronto Metropolitan University) has nurtured several AI startups and encourages founders to leverage each other's expertise.

> "Hinton didn't just shape the research. He shaped the way people work here – collaborative, research-focused, and refreshingly low on ego."
>
> – Toronto Business Development Centre

> "Beyond talent, Canada fosters a unique collaborative spirit among academia, industry, and government, accelerating knowledge transfer and commercialization."
>
> – Sam Haffar, Partner, Real Ventures

Sources: CIFAR, AAIA, TIAP CVCA Central, Company Website, Desktop Research

Toronto still **feeds** Silicon Valley

but also **attracts** top U.S. & Global AI talent

Past: Brain Drain

As per a study conducted in 2018:

- 1 in 4 STEM grads (UofT/Waterloo/UBC) opted to work outside of Canada, 66% of software engineer graduates from 2015-16 are leaving Canada for work after graduation.
- Brain drain is also high in computer engineering (30%), computer science (30%), engineering science (27%), and systems design engineering (24%).
- The United States is the destination of choice for those who choose to work abroad (81.51%) majorly due to higher pay, firm reputation, and the scope of work.
- In 2019 alone, over 10,000 Canadian STEM workers moved to the US on H-1B visas or green cards.

Present: Two- Way Flow

Despite these outbound trends, it's worth noting that Canada's net tech talent flow has tilted positive.

- In 2019 it welcomed ~23,000 international STEM workers, well above the U.S. exodus.
- In a 2025 survey of U.S.-based scientists, 75% of respondents considering relocation named Canada (along with Europe) as top destinations.
- Canadian tech recruiters report a "surge in inquiries" from talent around the world looking to move to Canada.
- Retention of new AI graduates in Toronto is improving as well, 94% of 2022 graduates from Vector Institute – affiliated AI programs remained in Canada (91% in Ontario).

Outbound: Toronto AI talent powers U.S. firms through relocation and remote roles, attracted by higher pay and global projects.

Inbound: Open immigration, talent programs, and Vector's pull draw thousands of foreign AI professionals – making Toronto a global hub and net importer in the talent exchange.

Sources: Brock University, Desktop Research

Applied AI Development

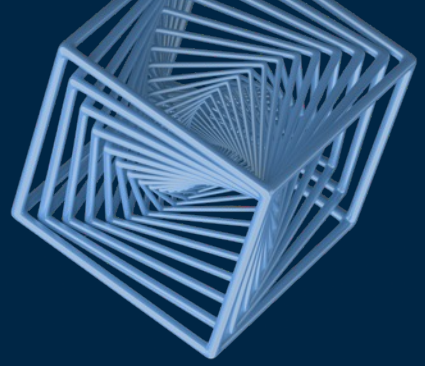
ada	Offers an AI-powered **customer support chatbot platform** for enterprises **(Customer Support)**
BenchSci	Provides an AI-powered drug discovery platform to help pharmaceutical companies speed up pre-clinical R&D **(Life Science)**
deep genomics	Uses deep learning to discover and develop novel therapeutic drugs, focusing on genetic diseases **(Biotechnology)**
blueJ	Develops AI-powered legal research software, originally focused on tax law **(Legal and Tax Research)**
Waabi	An AI startup building **self-driving truck technology (Autonomous Vehicles – Logistics)**
SIGNAL 1	Applies AI in hospitals to improve patient flow and clinical decision-making **(Healthcare Data)**

Sources: Company Website, Desktop Research

Foundational Model Development

cohere	Cohere is a Toronto-based AI company developing large language models and other foundational AI models.**(Generative AI/ LLMs)**
tenstorrent	Tenstorrent builds and sells specialized processors for training and running AI models, and even licenses its own AI chip intellectual property (including RISC-V based designs) **(AI Chips & Infrastructure)**
XANADU	Xanadu is a Toronto-based quantum computing startup building **photonic quantum processors** and **software for quantum machine learning (QML)**. Their open-source framework, *PennyLane*, lets researchers develop hybrid quantum–classical ML algorithms

Most startups **build around applied AI**; Cohere remains the key player building foundational models



Talent retention, funding, immigration, infra-access, and regulatory uncertainty **remains key risks**

Talent Retention & Brain Drain

- Many highly skilled AI professionals, especially those at PhD or MA level, are drawn to **higher-paying opportunities in the U.S.**, making it hard for Canadian startups to compete
- Several founders have relocated to the U.S. for faster growth and larger markets. The "tide is turning" now, as Toronto hosts more startup jobs, but the fight **to retain world-class talent remains a persistent challenge**

Funding Constraints

- While marquee raises (like Cohere's multi-hundred-million rounds) grab headlines, most startups now face a harder funding climate
- **Q1 2025 saw venture deals at a five-year low** as global trade uncertainty spooks investors. In response, many companies **turned to debt financing** (early 2025 saw venture debt was 229% higher than the first – quarter average over the last five years)

Immigration & Talent Integration

- Canada's Global Talent Stream and Start-up Visa programs exist to fast-track skilled immigrants, but **processing delays and caps can hinder hiring**. For example, IRCC (Immigration Canada) reported roughly 2.19 million pending applications in mid-2025, of which 842,800 were backlogged beyond service standards
- While Canada remains more welcoming than many countries, **bureaucratic backlogs and quota restrictions** have emerged as new obstacles for Toronto's AI firms seeking global talent

Compute & Infrastructure Access

- Canada's AI Compute capacity is far behind leading jurisdictions: adjusting for international market and population differences, Canada lags by a factor of 8 to 11 times compared to the US, approximately eight times compared to Japan, and two-to-three times compared to France and Germany
- Survey data shows Canadian firms list **"high cost of model training and deployment"** as a top adoption obstacle
- Overall, limited local HPC and high operational costs mean many Toronto AI companies must either partner with big cloud providers or forego large-scale model training until better infrastructure is built

Regulatory Uncertainty

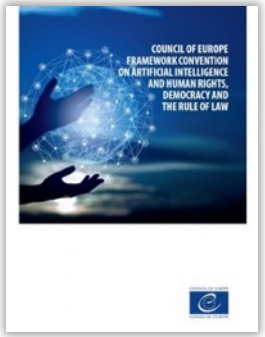
- In late 2023 Canadian privacy regulators issued guidance that generative AI use is subject to current privacy law (PIPEDA). This emphasizes consent, transparency and prohibits certain "no-go" uses of AI (e.g. deceptive content)
- Ontario has taken a proactive stance – in 2024 it became the first Canadian jurisdiction to require employers to notify candidates when AI-driven tools are used in hiring
- While Canada has no wide-ranging AI law yet, companies must watch EU's AI Act and U.S. policy moves. Aligning with emerging "best practices" (fairness, transparency) is prudent to avoid being caught off-guard by future rules

Sources: CVCA, Vector Institute, Desktop Research

From stalled federal law to new safety, privacy, and provincial mandates are **shaping AI development**

Federal AI Legislation Reset

- The proposed **Artificial Intelligence and Data Act (AIDA),** part of Bill C-27, **did not advance** when Parliament was prorogued in January 2025.
- Canada currently **lacks a federal AI-specific statute**, leaving developers to operate under existing privacy and sectoral frameworks.



Commitment to international standards

- In February 2025, Canada became a signatory to the **Council of Europe AI Convention**, committing to human-rights–based governance of AI.
- This signals stronger future requirements for accountability and impact assessments.

Research security restrictions

- The federal **Sensitive Technology Research and Affiliations of Concern (STRAC)** policy designates AI as a sensitive domain, restricting federal funding when projects involve certain foreign institutions.
- This directly affects academic-industry partnerships and eligibility for grants.

Soft-law governance and safety initiatives

- The Government of Canada established the **Canadian AI Safety Institute (November 2024)** and issued updated AI management guidelines in March 2025.
- Together with an **expanded voluntary code for generative AI**, these frameworks are shaping procurement and funding conditions in the absence of binding law.

Office of the Privacy Commissior of Canada

Privacy enforcement actions

- The Office of the Privacy Commissioner has launched **investigations into the use of Canadians' personal data for AI training.**
- This highlights the application of existing privacy law to AI and raises the bar for transparency, consent, and data-minimization practices.

Ontario

Provincial developments (Ontario)

- Effective **January 2026**, Ontario will require employers to **disclose the use of AI in recruitment and candidate assessment,** driving explainability and compliance obligations for HR technology providers.

Sources: Govt. of Canada, Desktop Research

Toronto AI landscape conclusion:

Pros

Academic- Industry Fusion

Vector Institute + UofT directly link world-class research to commercialization, producing high-growth AI startups

Applied AI Strength + Talent Engine

Toronto specializes in applied AI across healthcare, finance, and mobility, with a deep and growing talent pool fueled by universities and immigration-friendly policies

Collaborative & Cost- Effective

Unlike SF/NYC, Toronto's ecosystem is connected and open, with operating costs and salaries ~40-50% lower, with global-quality outcomes

Cons

Talent Retention Risk

Many highly skilled AI professionals, especially those at PhD or MA level, are drawn to higher-paying opportunities in the U.S., making it hard for Canadian startups to compete

Funding & Infrastructure Constraints

Scarcity of late-stage growth funding and limited AI Compute capacity are other challenges that AI companies face

Regulatory Uncertainty

Canada's AI Act (AIDA) stalled, leaving a patchwork of provincial privacy rules; creates planning ambiguity for scaling high-impact AI products

Paragon

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Thank you

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