

Digital Inclusion & Aging with a Disability



Jutta Treviranus
Inclusive Design Research Centre
OCAD University
Toronto, Canada

The ancestral and traditional territories of the Mississaugas of the Credit, the Haudenosaunee, the Anishinaabe & the Huron-Wendat

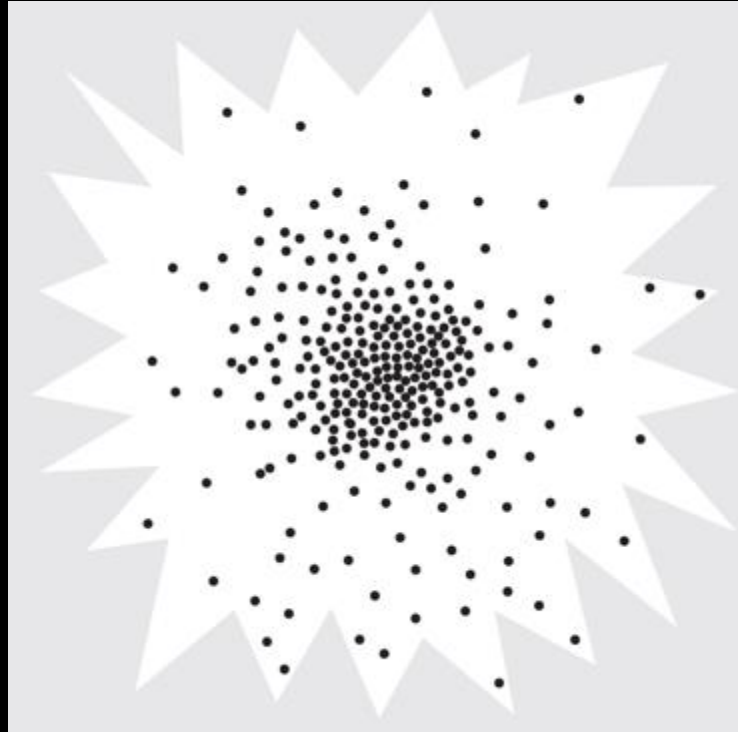
[Attribution-NonCommercial 4.0 International License](#)

When we design our systems
with people who are struggling,
our systems will work for us when
we inevitably find ourselves
struggling.

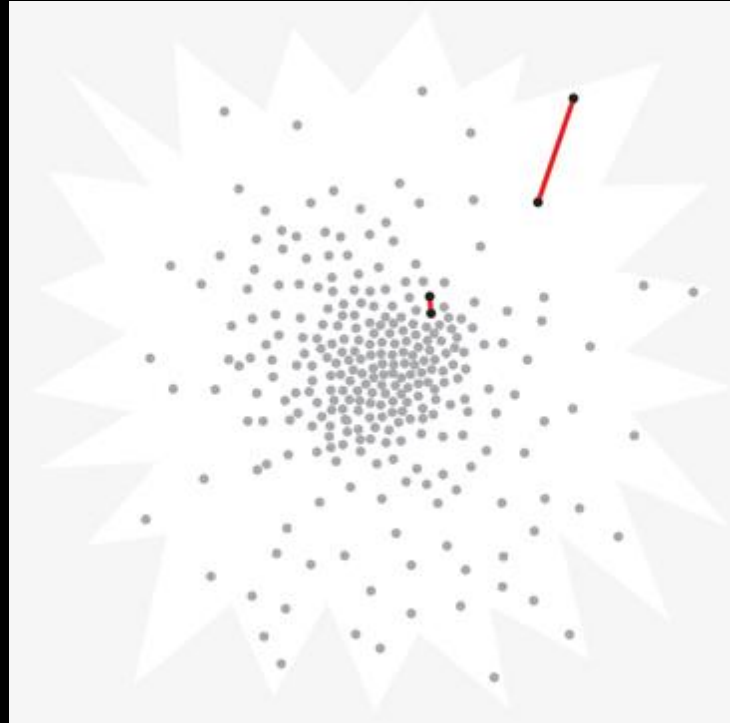
Agism +
Ableism +
Inaccessible design =
Compounding Barriers

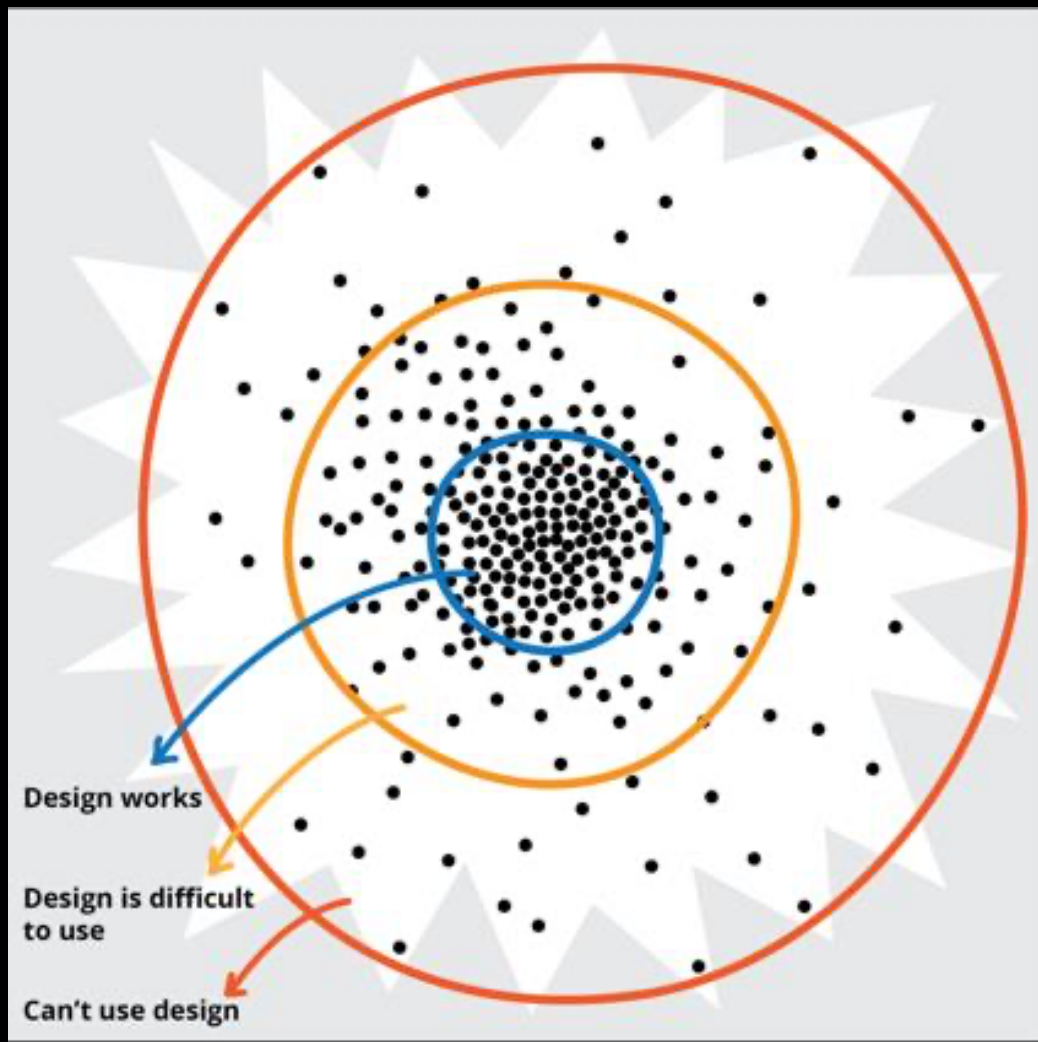
The challenges of
heterogeneous outliers...

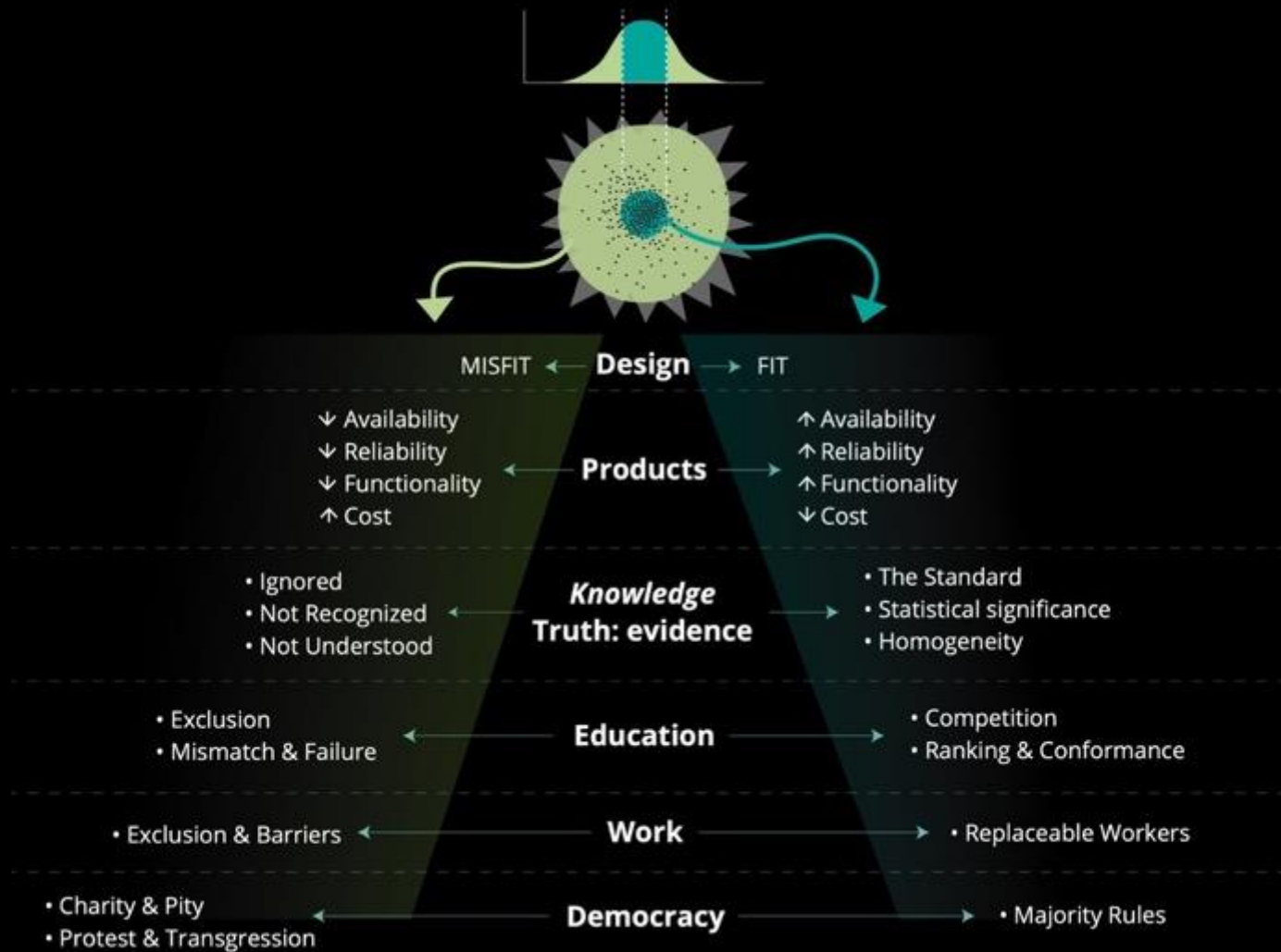
Our human starburst...



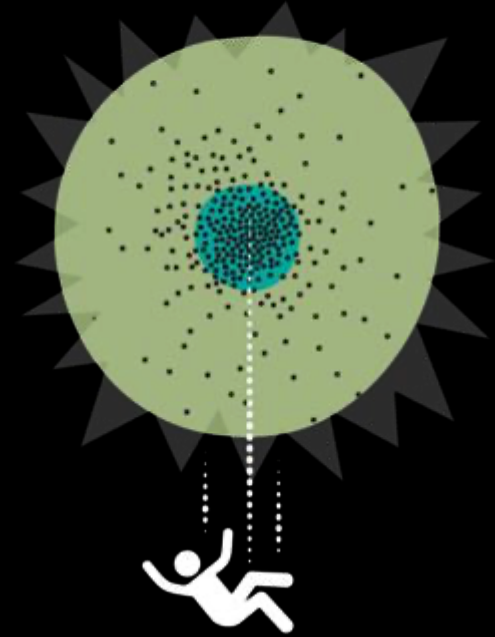
Difference...







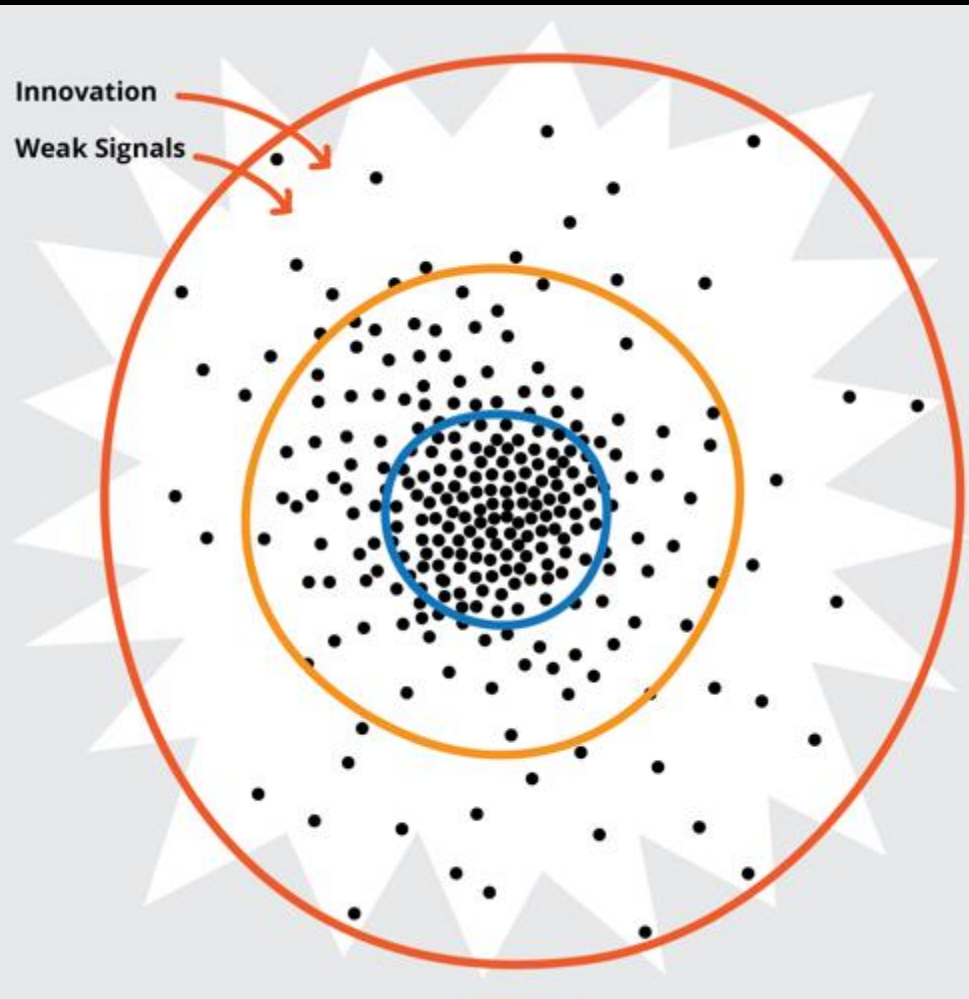
The prediction with the greatest probability

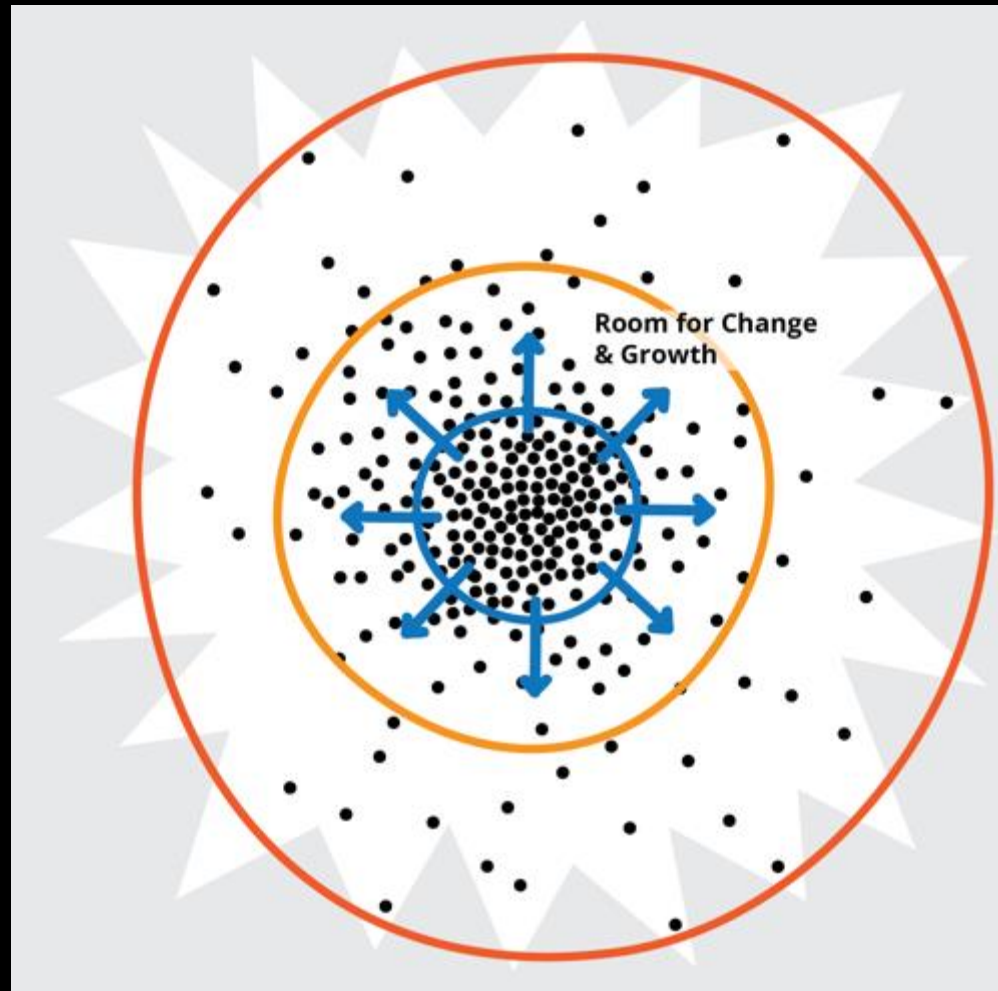


- Anytime
- When you least expect it
- Greatest Probability

Innovation

Weak Signals



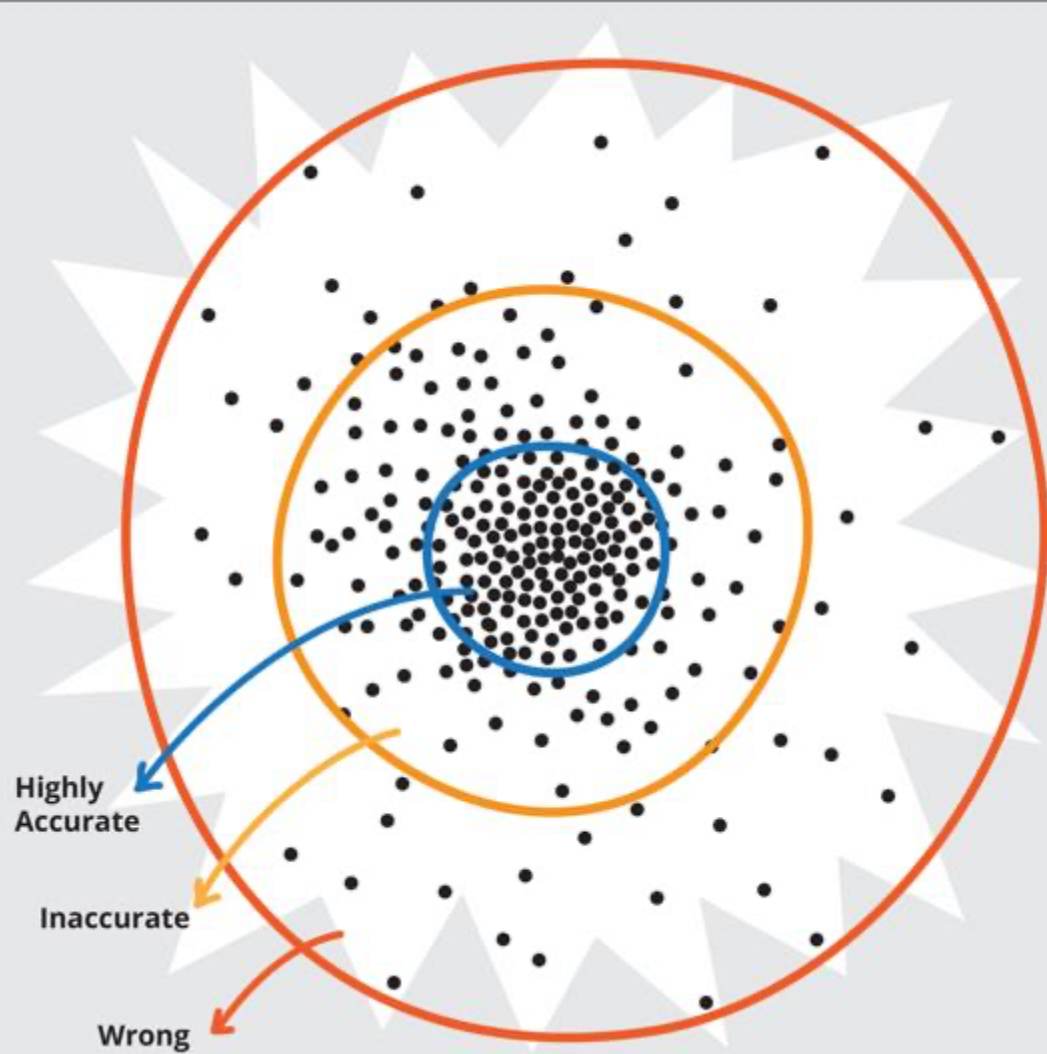


The Risks & Opportunities of Artificial Intelligence

AI is
mechanizing, accelerating,
amplifying, and automating
existing patterns

... a statistical reasoning machine

feeding on available data



a power tool...



More
efficiently,
accurately, and
consistently.

Statistically finding or producing the...

typical

popular

normative

predictable

statistically average

Extreme Opportunities of AI..

- Recognize speech, gestures, patterns, images
- Find a target object or pattern
- Match and label objects
- Remember forever and remind on time
- Sort possible paths to find the optimum
- Detect common mistakes and correct them

GenAI

- Create videos, text, images, applications from our prompts
- Summarize and translate
- Produce a polished version

Provisos...

- Privacy breaches
- Surveillance & manipulation
- Homogenization
- Inverse benefits
- Connectivity and sustainability costs
- Hallucination

Less known risk: an infrastructure
of statistical discrimination

Finding, matching, sorting,
labeling, measuring, optimizing,
calculating, analyzing people... at
scale

..propagating discrimination
faster, more efficiently, and
accurately

Harm and incident databases

- Disproportionate reports related to disability and age
- Examples: false positive tax audits, false positive security flagging, biased credit and asset rating, unfairly denied mortgage and loans, unfairly high insurance rates, de-prioritization of relevant information, unfair denial of services, iatrogenic death and illness...

The Problem with the Standard Solutions...

Statistical Discrimination in AI Ethics Measures

- Insignificant when determining impact metrics and thresholds
- Invisible or insignificant in risk or error testing
- "Merely an anecdote"

More than...

- Addressing data gaps and bias
- Removing human bias from algorithms
- Removing stereotypes from labels and proxies
- Excising markers of disability to avoid discrimination

Privacy protections

- Privacy bartered for essential services
- Privacy protections don't work
- Privacy protections eliminate helpful data
- Recovery from data abuse & misuse absent



The Regulatory Standard

Accessible and Equitable AI Standard

for the Accessible Canada Act

... nothing without us because
everything is about us

Equity Principles

- experience equitable benefits from AI systems;
- do not experience inequitable harms from AI systems;
- do not experience a loss of rights and freedoms due to the use of AI systems; and
- are given agency and are treated with respect in their interactions with AI systems, including the right to choose equitable alternatives.

Intelligence that works with the edge of our human scatterplot is better able to ..

- Adapt to change & respond to the unexpected
- Detect risk
- Transfer to new contexts
- Results in greater dynamic resilience & longevity
- Will reduce disparity
- May hold the key to our collective survival

Continuing the conversation:

- <https://accessible.Canada.ca>
- <https://idrc.ocadu.ca>
- <https://wecount.inclusivedesign.ca>
- @juttatrevira
- <https://medium.com/@jutta.trevira>

Supported in part by:



Accessibility Standards
Canada

Normes d'accessibilité
Canada

Funded by Government of
Canada's Innovation, Science
and Economic Development
Canada and Employment and
Social Development Canada

Canada

Funding Acknowledgement

Inclusive Design for Employment Access (IDEA) is supported by generous funding from the Government of Canada's New Frontiers in Research Fund (NFRF) Transformation Stream.

Le Vision Radicale Pour L'Accès Inclusif à l'Emploi (VRAIE) est financé par le fonds Nouvelles frontières en recherche du gouvernement du Canada.



Government
of Canada

Gouvernement
du Canada



New Frontiers in Research Fund
Fonds Nouvelles frontières en recherche

