

AI and the Future of Work



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

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Government
of Canada

Gouvernement
du Canada



New Frontiers in Research Fund
Fonds **Nouvelles frontières** en recherche

... a statistical reasoning machine

feeding on data

a power tool...



More
efficiently,
accurately,
consistently..

mechanizing, accelerating,
amplifying, and automating
existing patterns

Statistically finding or producing the...

typical

popular

normative

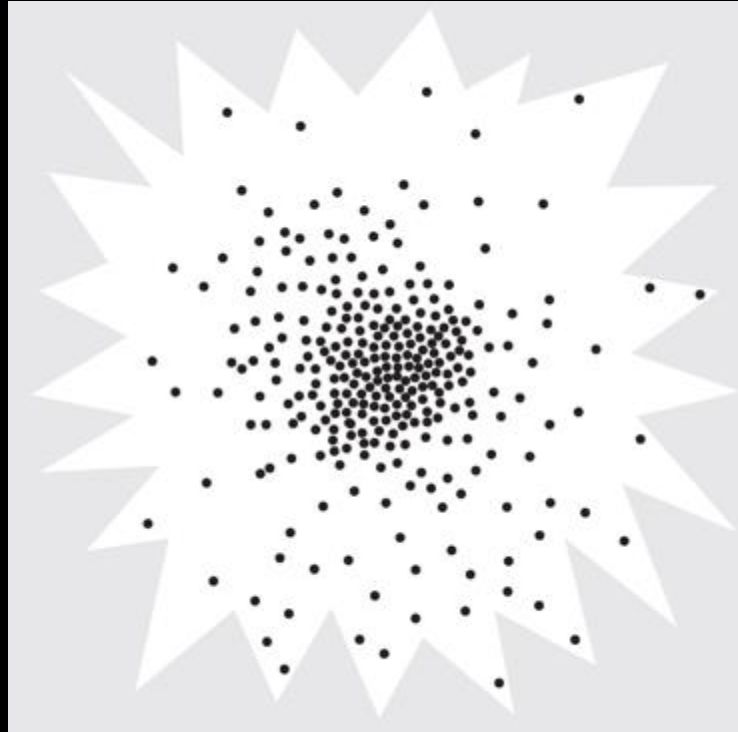
predictable

statistically average

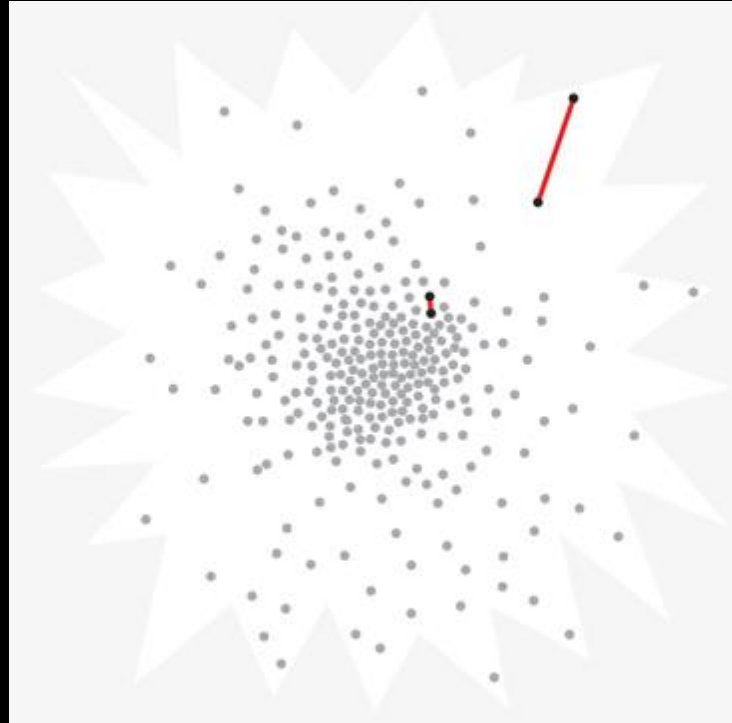
outliers and historically
marginalized minorities

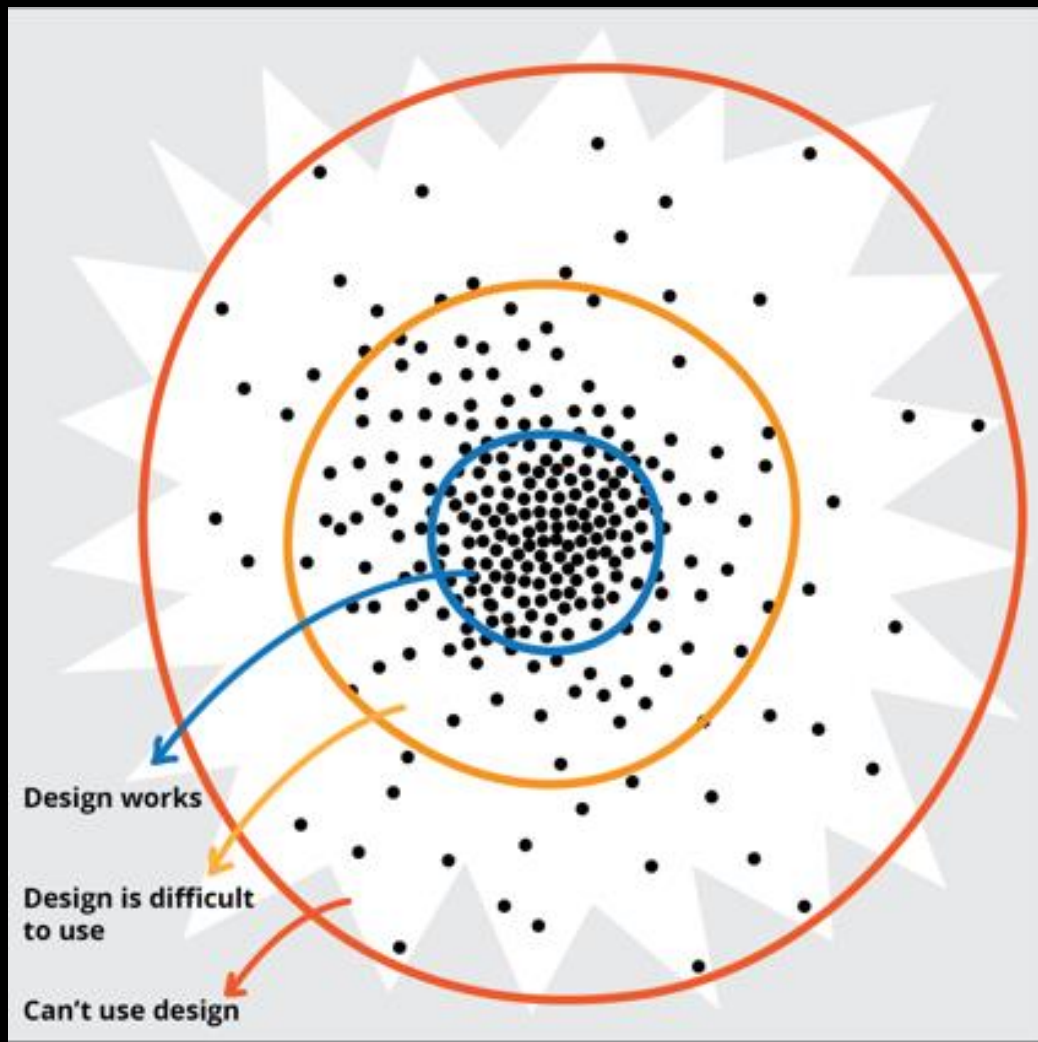
My data set of human
requirements....

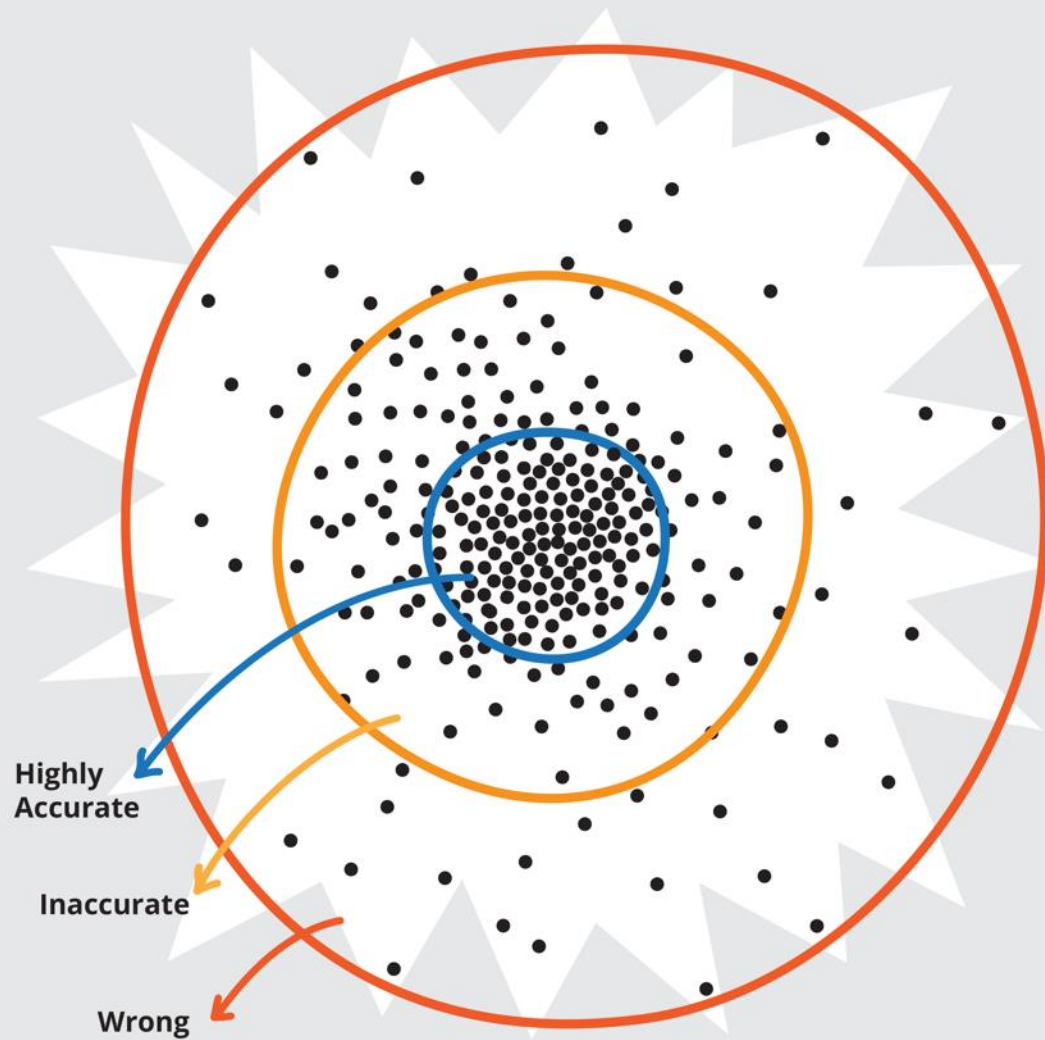
Our human starburst...



Difference...







If you have a disability the
opportunities and risks are at the
extremes

Extreme Opportunities..

- Recognize speech, gestures, patterns
- 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

Less known risk: an infrastructure
of statistical discrimination

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

Bias toward optimal pattern
=
Bias against difference

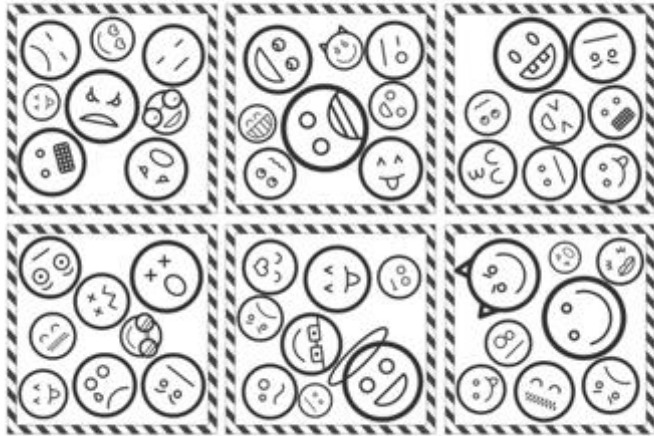
..propagating discrimination
faster, more efficiently, and
accurately

homogenizing toward a
monoculture..

> 90% of organizations use
some form of AI hiring tools

~US EEOC

AI screening systems find applicants that match predetermined optima



Optimal patterns are based on
past success metrics



Employers can add filters...

- Ideal persona
- Culture fit
- Favorite university or group



The optima will never be a person with a disability in present systems

- Not enough successfully employed persons with disabilities (but more than data gaps)
- Will never be enough consistent data regarding success to reach probability threshold
- Even if data gap is filled, each pattern will still be an outlier or minority - will lack probabilistic power in the algorithm

Assumptions of Pervasively Deployed AI Hiring Tools

- Past success equals future success
- Optimizing data characteristics associated with past successes increases future successes
- The data characteristics that determine success need not be specified or known to the operators of the AI

AI in Employment

- Recruiting announcements
- Application Filtering
- Interviews and assessment
- Productivity monitors and surveillance
- Promotion or disciplinary actions

AI getting better or more accurate
=
getting more discriminatory

More surveillance -> more
granular data

=

More ways to be different

Statistical reasoning
as the means of making decisions
does harm

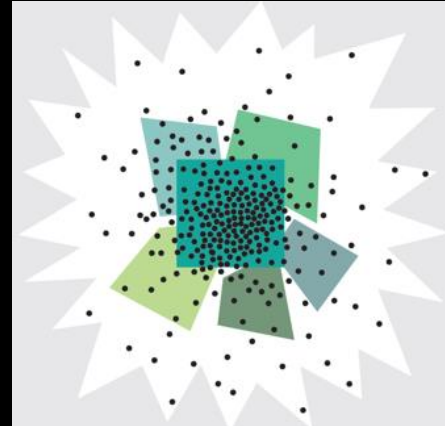
Assuming that what we know about the
majority applies to the minority does
harm

More than...

- Addressing data gaps
- Removing human bias from algorithms
- Removing stereotypes from labels and proxies

Statistical Discrimination in AI Ethics Measures

- Insignificant when determining impact metrics and thresholds
- Invisible or insignificant in error testing and risk-benefit framework
- No bounded cluster in cluster comparison



“an anomaly”

“merely an anecdote”

Privacy protections don't work

- Privacy bartered for essential services
- Re-identification if you are unique
- Differential privacy eliminates helpful data
- Need recovery from data abuse & misuse absent



How are we addressing
trustworthy AI?

Invert the dominant algorithm

- From data exploitation to data exploration
- From homogenization to diversification
- Finding missing perspectives, increasing diversity
- In hiring & admissions

Pushing benefits to where they are
needed the most...

AAC Users and Employment



baby

Blissymbol
writing (for) world

plan digital
software

ability self
independent

Filling the regulatory vacuum...

Accessible and Equitable AI
Standard

for the Accessible Canada Act

... and the EU and US

Continuing the conversation:

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

