

Exploring AI Opportunities in Africa

Nyalleng Moorosi
Google AI

Where it All Begun



University of Fort Hare
Together in Excellence

CSIR and Tshwane



science
& technology

Department:
Science and Technology
REPUBLIC OF SOUTH AFRICA

Counting People





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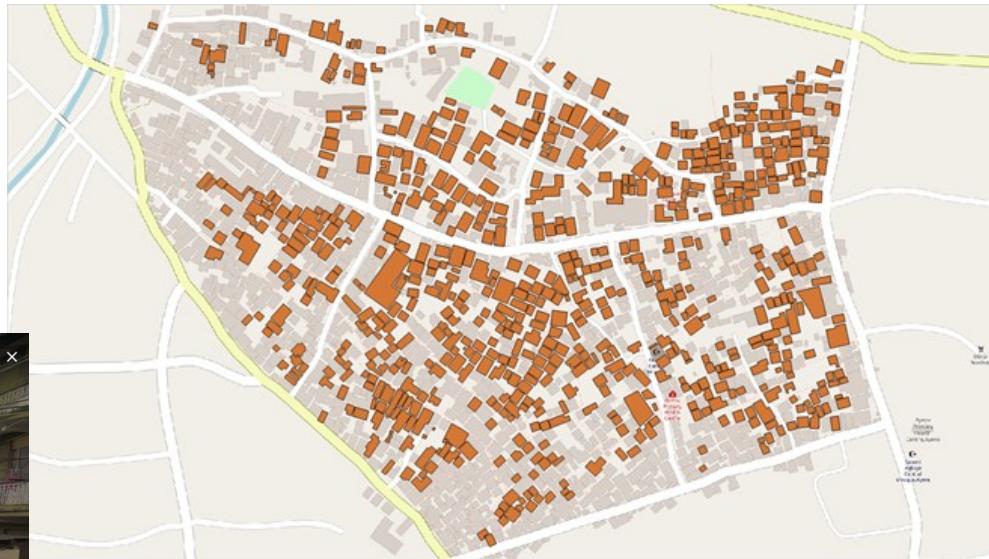


Informal Settlement

Sefala et.al BAI2018

Counting Wealth

- Find informal businesses in neighborhoods

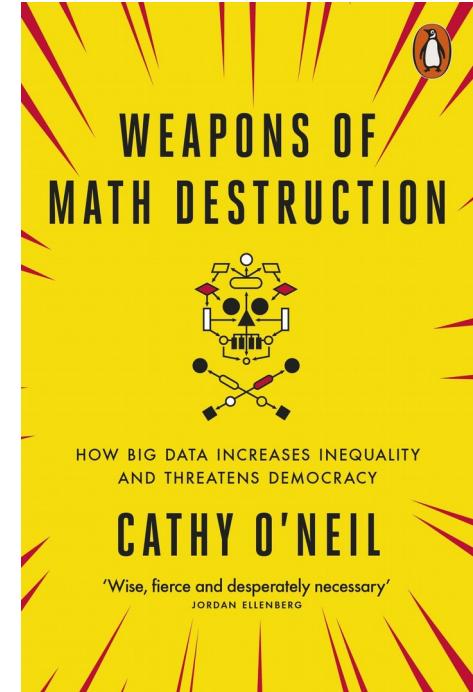


Fairness in ML

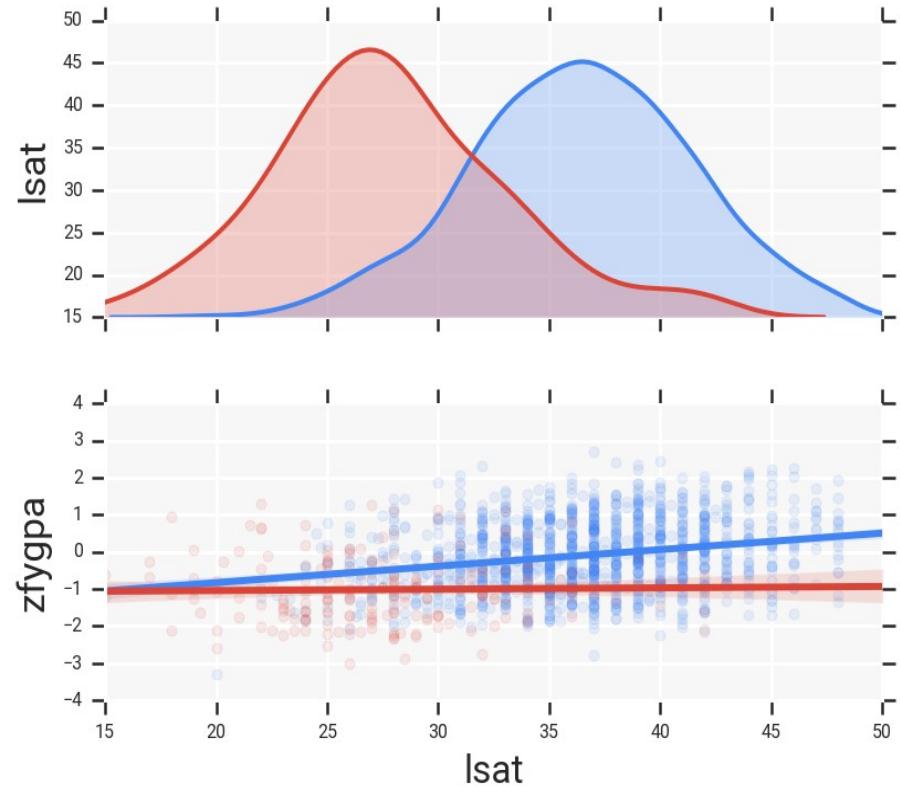
How do we make sure algorithms are not harmful?

There are two ways to cause harm

1. Provide unfair outcomes for certain groups
2. **Exclude members of certain groups**



Inclusion in ML



Suppose we have 2 models, M_1 , M_2 , and would like to know which is more "inclusive" in the sense of performing well for all groups of users.

Sample Metrics

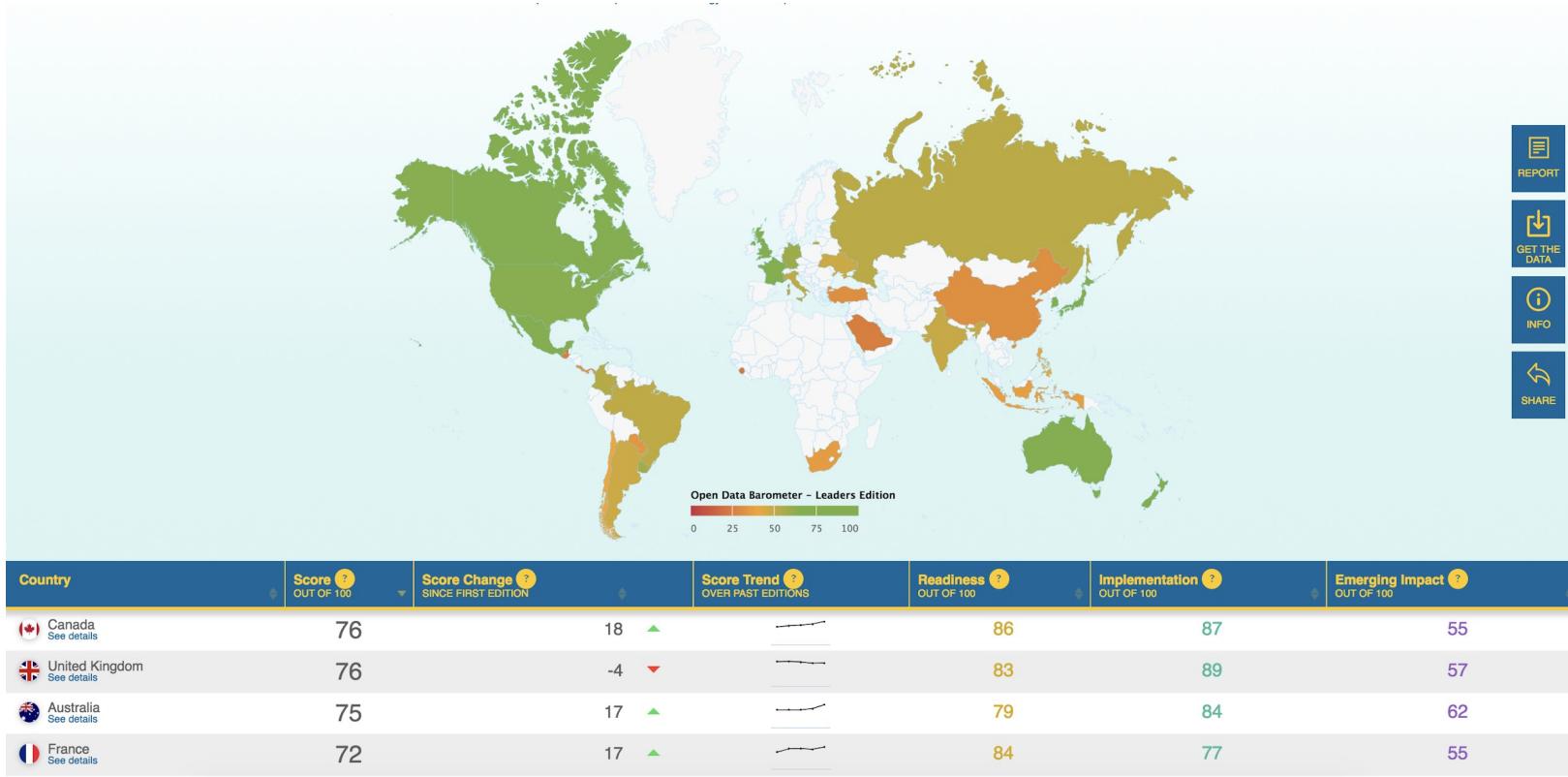
- Choose the function with the highest metric sum over the groups
- Choose the function with the highest metric mean

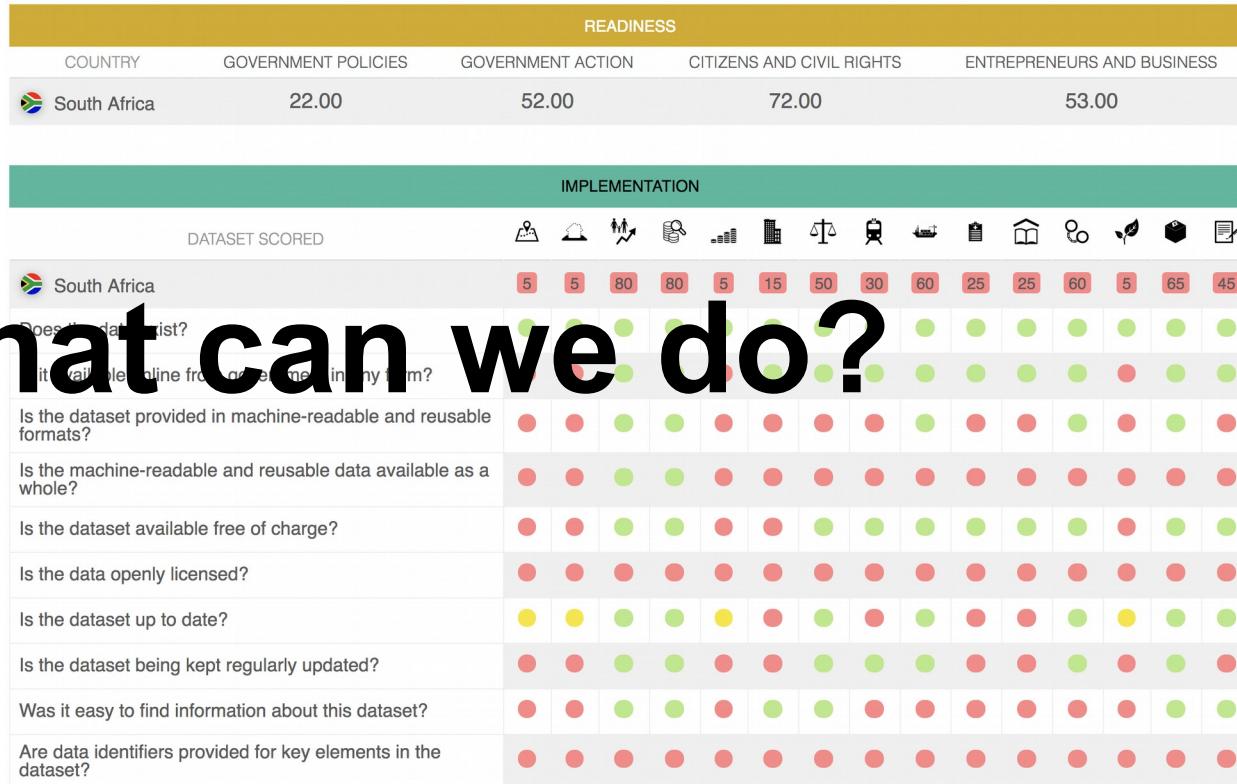
ML4D - The Ingredients

1. The People
2. The Data
3. The Policies
4. The Infrastructure

Data Availability and Openness

Open Data Barometer





What can we do?

Source: <https://opendatabarometer.org/>

ML4D indabaX-TZ

Using Social Media as Proxy



Arrive Alive @_ArriveAlive

2016/07/21

Multiple Vehicle Collision and shootout with criminals in Hurlingham, JHB shar.es/1Z1w8j
@EMER_G_MED



Smash and grab 30 minutes ago corner bree street and simmonds street in Joburg CBD @CrimeLineZA #victimissafe
#stopcrime #EnoughIsEnough



SHOOTING : CARLTON CENTRE. JHB CBD. GP.
AWAIT UPDATE



↑↓ 12



2



2016/07/31
Anyone know where I can find a shooting/gun range in jhb? Please let me know.



2016/07/23
Shooting the Don't trip video in Durban on the 6th and in Jhb on the 31st



Human Capital Development





DEEP LEARNING **INDABA**

— 2018 —

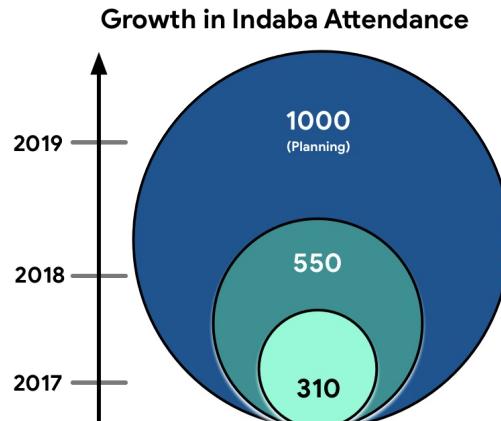
Strengthens African Machine Learning

3 Programmes:

**Kambule and Maathai
Awards Program**

IndabaX Program

**Deep Learning Indaba
School**





DEEP LEARNING INDABA

<http://www.deeplearningindaba.com>





- Support capacity building in the ever growing field of Data Science.
- DSIDE recruits vacation students (3rd/4th year) over the period of June/July (Phase 1 - lasting 4 weeks) and continuing December/January (Phase 2 - lasting 8 weeks).
- Students participate in ***mentor-guided*** and ***learn-by-doing*** problem solving of ***real-world*** needs as presented by different stakeholders.

- 30 Students 2015/2016
- 51 Students 2016/2017
- 60 Students 2017/2018
- **Multidisciplinary:**
Computer Science,
Engineering, Graphic
Design, Journalism,
Mathematics, Statistics,etc.



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In Summary: Challenges and Opportunities

What is Working In the Space?

- A culture of collaboration between people in Africa and the diaspora



What are the Challenges?

- Data governance and good data sharing policies
- Computation infrastructure
- Equality in access
- Access partners and champions
- High churn

Thank You!

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