IBM Research | Africa

The world is our lab.

Practical Machine learning for developing countries: Lessons and Reflections

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#iclr2020

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3,000 researchers

6 continents

12 labs

21 locations


Financial Inclusion
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Water


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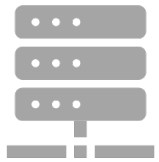
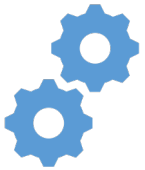
Problem definition



Data and pre-processing

Model development



Integration into practice

Collaborative problem definition is key

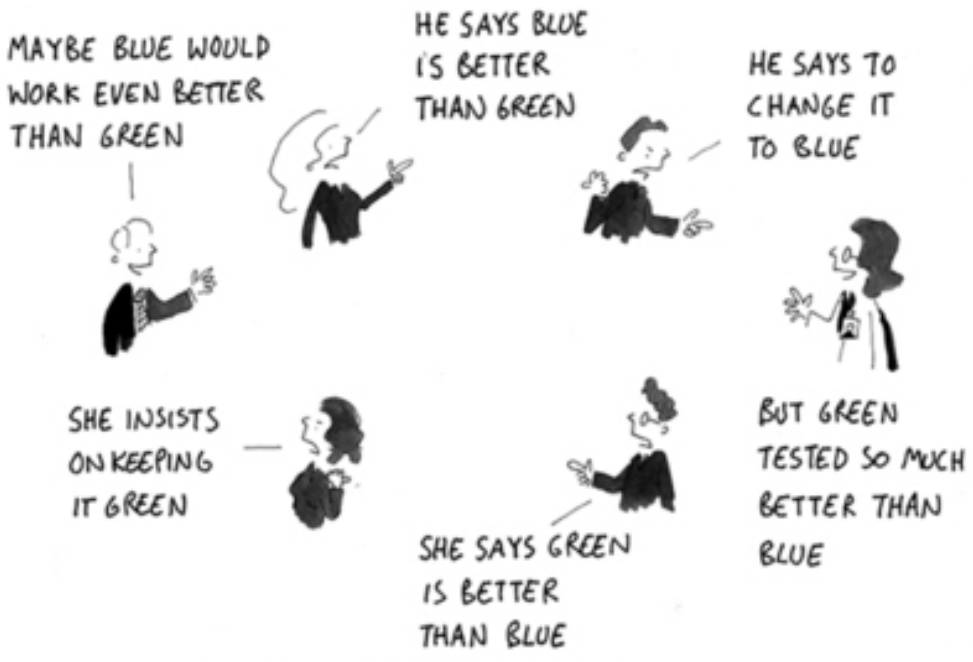


Image: https://www.insivia.com/personas-and-the-broken-telephone-game/

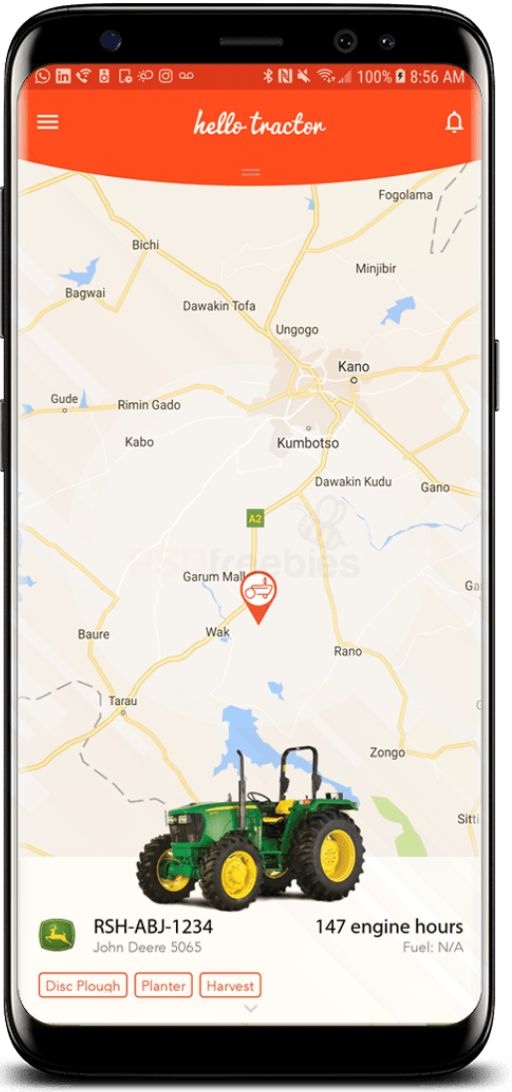
“ I suspect if you were to create a map of data sets throughout the world, it would look much like the electricity map — data overload in the U.S., Europe and parts of Asia, yet a mere sprinkling around North Africa, South Africa, Lagos and Kenya”

Carol Pineau, Vice President of Strategic Partnerships at GeoPoll.

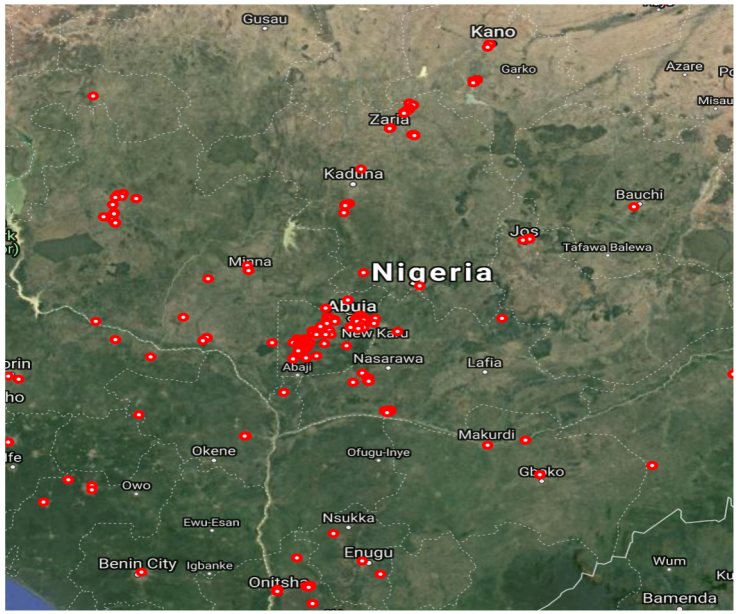
https://www.devex.com/news/the-african-data-gap-what-it-means-for-business-84246

Digitizing farms

Digitizing farms



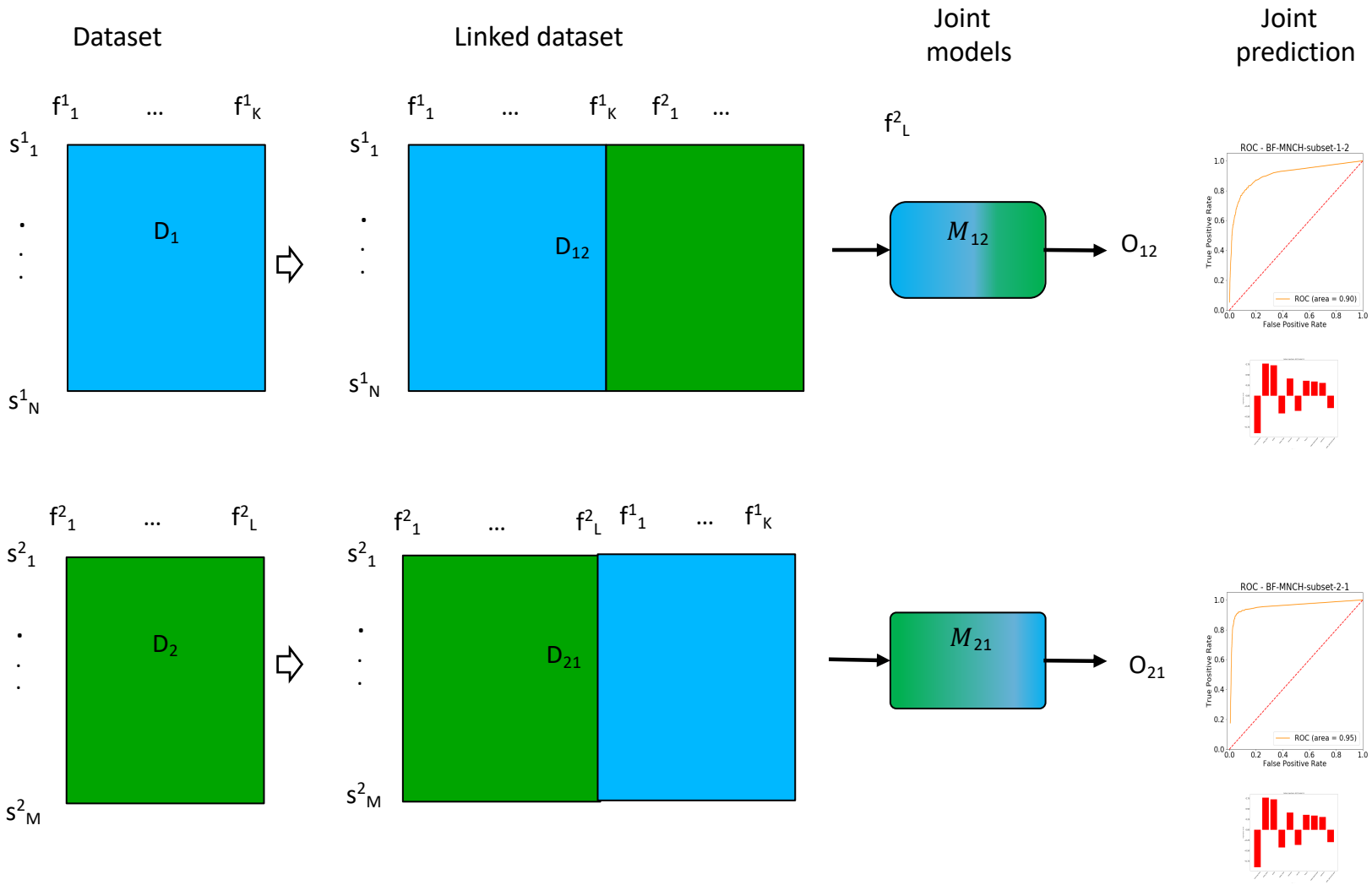
Hello Tractor Application



Serviced areas

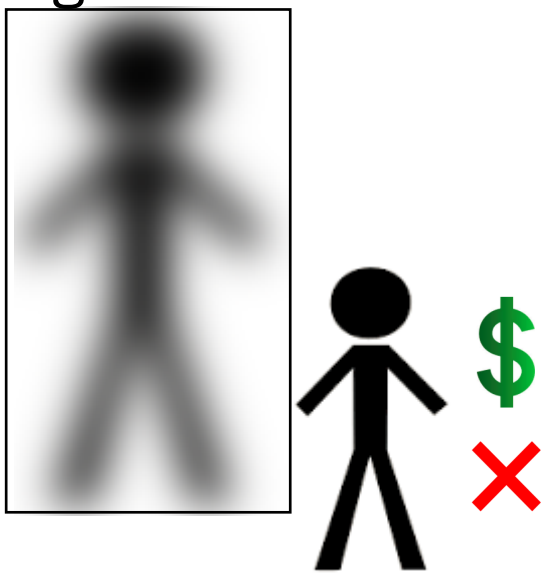
Boundary and acreage estimation

Linking datasets to improve outcome prediction



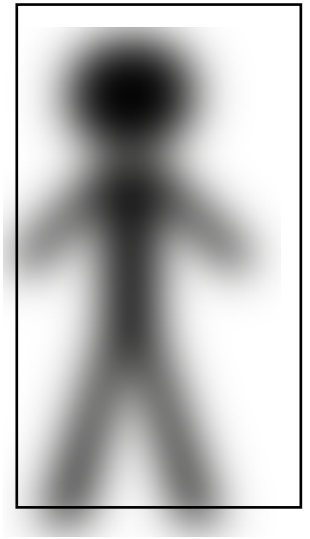
Launching a product into a new market: transfer learning example

Original Market

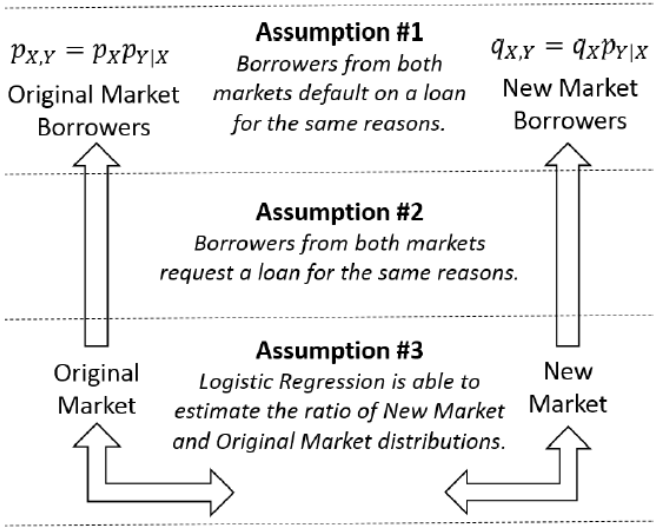


Original Market Borrower

New Market



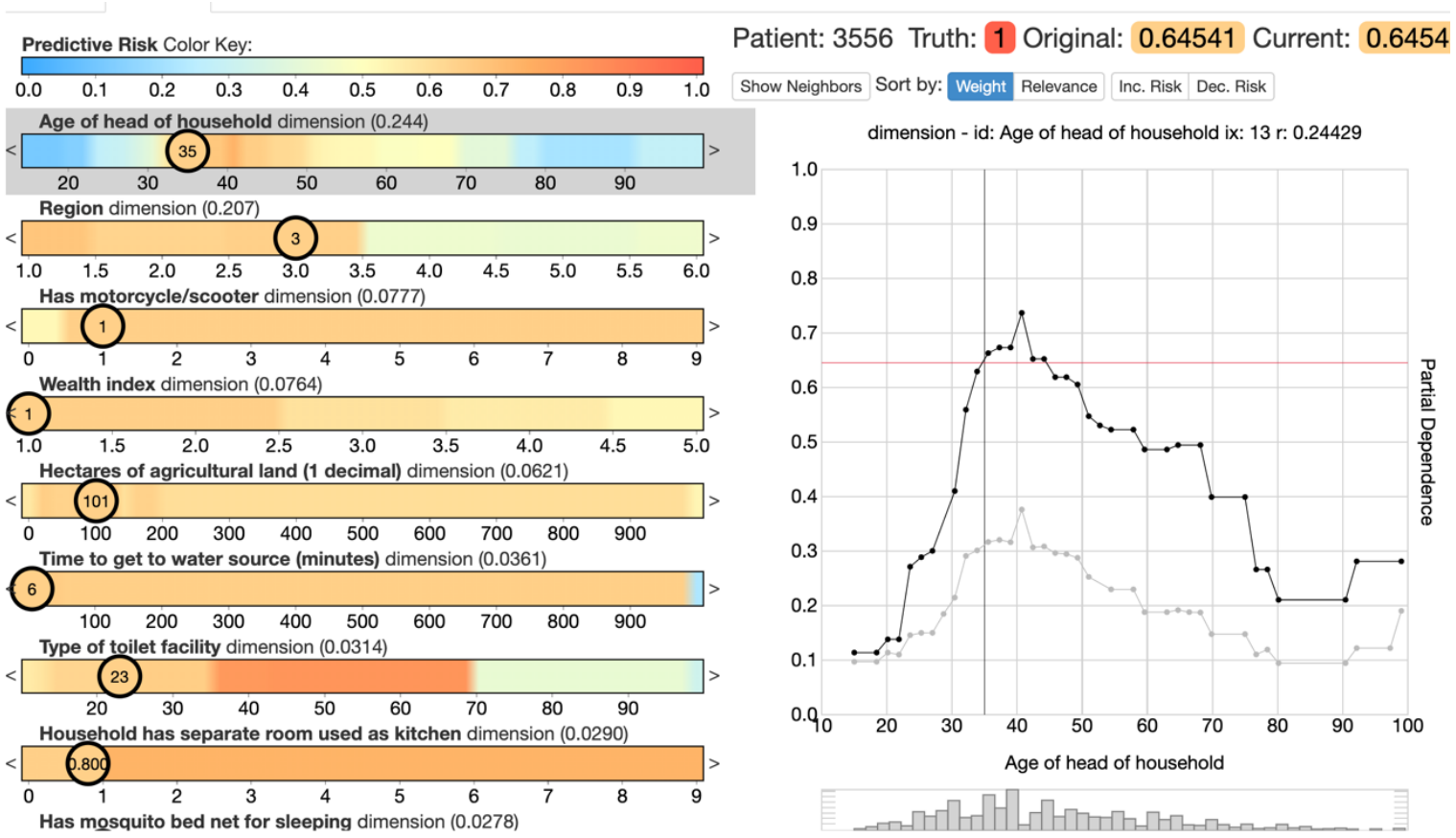
New Market Borrower



Explainability for intervention planning

1. Identify the most important markers for one entity (e.g. household or person)

2. Shows how changes in the marker profile of a single entity impacts vulnerability



MARKER PROFILE OF A SINGLE HOUSEHOLD

Corelation is not causality

Shimoni et al Journal of Machine Learning Research 2019, AMIA 2020 (Submitted manuscript)

Integration of the machine learning models into practice is still hard

Source: SWEETSense


Thank you