

Rulex

The AI that tells you why™

Andrea Ridi

CEO Rulex

Banking Summit 2018

4th – 5th October 2018 – Stresa (VB)

What is Artificial Intelligence?

Artificial Intelligence is *“the ability of a machine to imitate intelligent human behavior”*.

Rulex deals with one aspect of Artificial Intelligence (AI) - inductive machines that learn from example (Machine Learning).



What is Big Data?

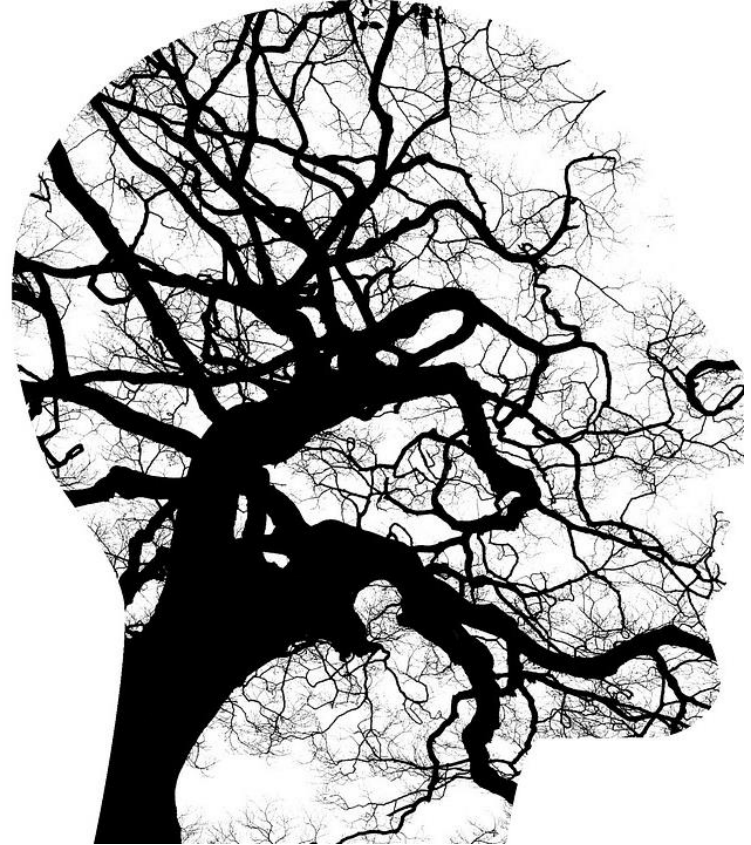
Big data consists of large amounts of data generated by companies which can be used to improve performance.

Rulex analyzes complex big data with multiple variables.

Why do I Need AI?

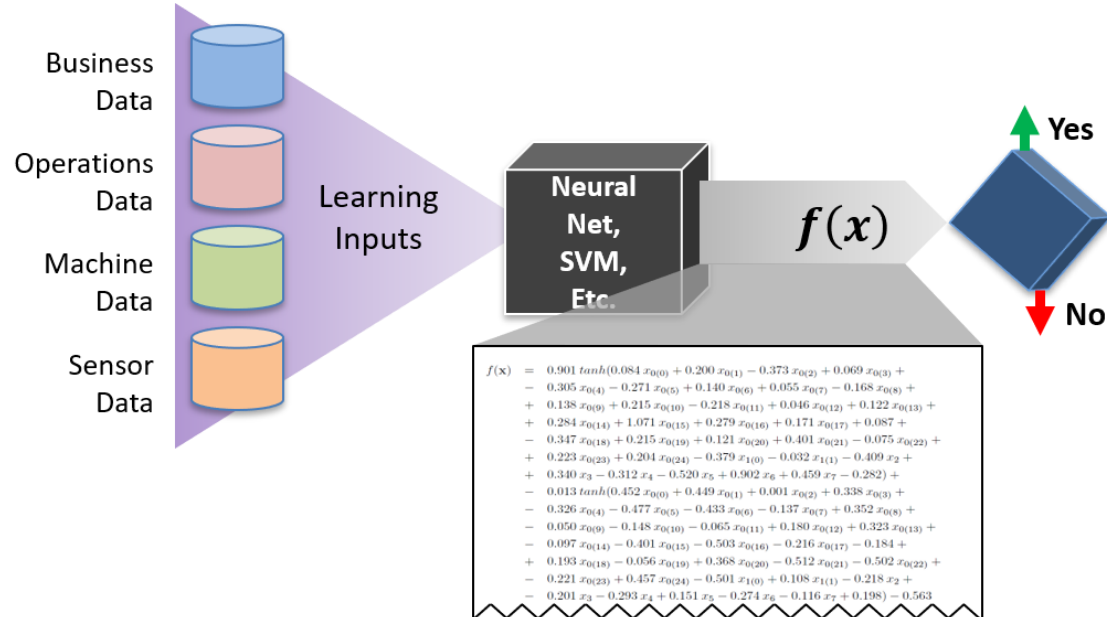
Human intelligence alone cannot handle the complexity and quantity of information involved in big data.

The only way to find value in this complexity is by using Artificial Intelligence and Machine Learning.



Black Box Machine Learning Algorithms

Black Box AI
produces
unexplainable
predictive
maths



The prediction may be correct, but there is no explanation, so no informed corrective actions can be taken

Consequences of Black Box AI

- Hidden decision biases and regulatory exposure
 - race, gender, age, etc.
- Unknown decision actions
 - churn response, fraud investigation, loan performance
- Unaudited error cases
 - false positives (and negatives), incorrect targeting



General Data Protection Act

Under article 22 of the GDPR everyone has the “right to an explanation”, for automated decisions, which must be delivered in clear and understandable language.

This requires interpretable machine learning techniques and human readable predictive rules.

Penalties for non-compliance can be as high as 4% of annual revenue

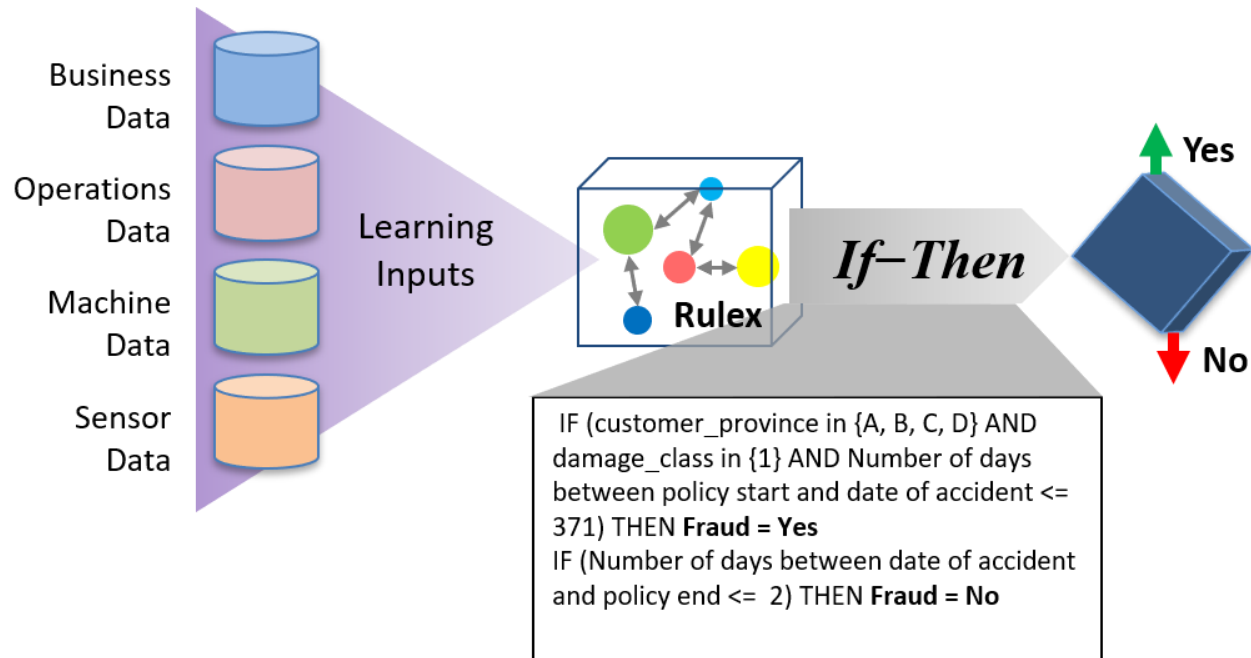




Rulex has solved these issues, dropping the black box and developing a totally new approach
Clear Box AI

Clear Box Machine Learning Algorithms

Clear Box AI
produces
self-
explanatory
predictive
logic



Predictions are fully explained, so that informed corrective actions can promptly be taken

Benefits of Clear Box AI

Easy to understand *if-then* based logical rules, eliminating the need for data science skills.

All predictions can be explained; the results are intrinsically GDPR compliant.

Easy to integrate into business applications

Knowledge-based solutions, understood by domain experts.



Rulex Founding Mission

We aim to:

Provide

Provide accurate explainable “clear box” predictions

Capitalize

Capitalize on growing need for explainable AI

Simplify

Simplify AI application development and integration

Deliver

Deliver early proof of business value and rapid ROI

Focus

Focus on use cases where other AI has failed



Rulex Customers

Rulex is an enabling technology on which custom or standard vertical solutions are built.

Global Platform customers

F50 CPG Manufacturer

Multi-year master vendor contract for 6-10 applications.

Local Platform customers

Konika Minolta

Global Solutions customers, CRM, IoT applications and strategic technology partner, Robotic Data Correction

Global Solutions customers

Unipol and other EU insurers


Claims Fraud application resold through GFT and PWC

Local Solutions customers

Banca Ifis and other EU banks

Non-Performing Loans application resold through GFT





Banking Applications for Rulex

- Preventing and understanding customer churn
- Robotic Data Correction (RDC)
- Upselling and cross-selling products
- Optimizing business models
- Risk evaluation and credit monitoring
- Non-performing loans evaluation
- Anti-fraud (transactions, laundering)

Rulex Use Case

NPL and legal action

Problem – it is not always profitable to take legal action against insolvent debtors

Solution – identify debtors on whom the legalization process can be applied.

Requirements:

- The solution can be used by business experts, not data scientists
- High performance on large amounts of data
- Transparent explainable predictive rules



Rulex Use Case

NPL repayments

Problem – it is not possible to predict if and how debtors will repay their loans

Solution – identify if debtors will replay their loans over ten years, and if so, how much will they repay

Requirements:

- The rules must be simple and understood by business experts
- The highest precision must be provided for defining debtors that will *not* repay their loans and the model must be consequently weighted (90% achieved)

10/9/2018

© 2018 Rulex, Inc.



Rulex Use Case

Risk evaluation

Problem – it is difficult to identify default high-risk clients

Solution – identify which clients are likely to be a credit risk a year ahead of when problems effectively occur.

Requirements:

- The output rules must be easily understood by business experts
- The model is applied to CPC indicators
- The model must be easy to implement in business processes

10/9/2018

© 2018 Rulex, Inc.



Rulex Adoption Challenges

10/9/2018

© 2018 Rulex, Inc.



Data Quality



Initial data analysis that determines the value of your data.



Save time trying to find value in inappropriate data



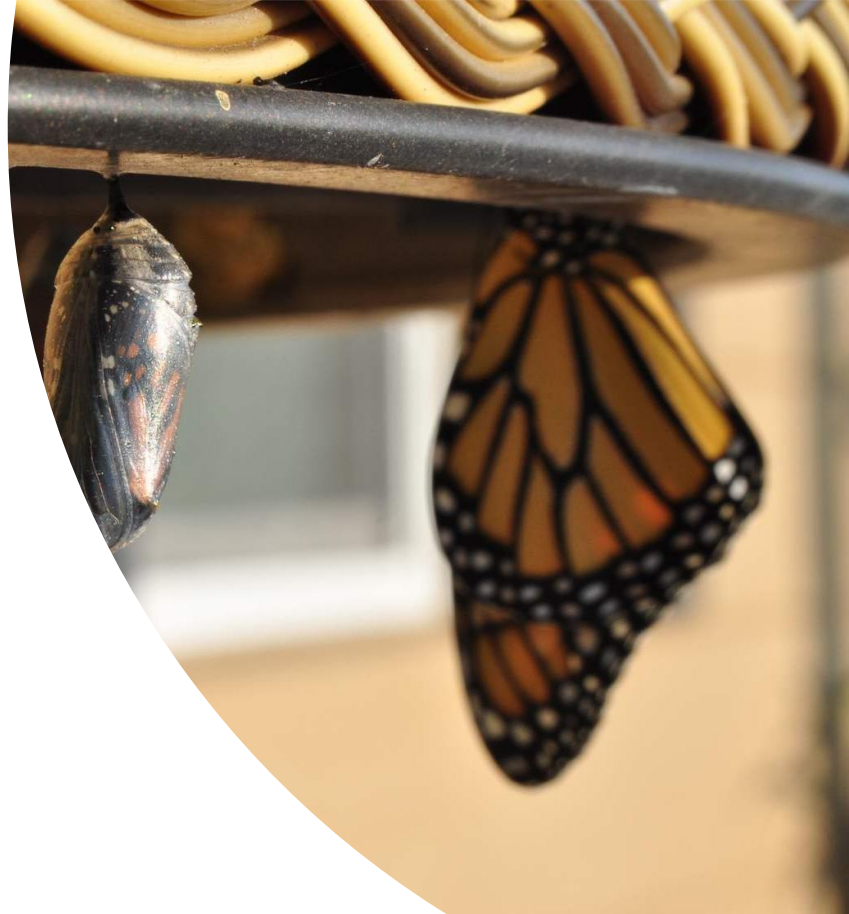
Trash in > trash out



Change Management

The data evaluation processes:

- Implies new procedures
- Impacts the organization
- Requires effective change management

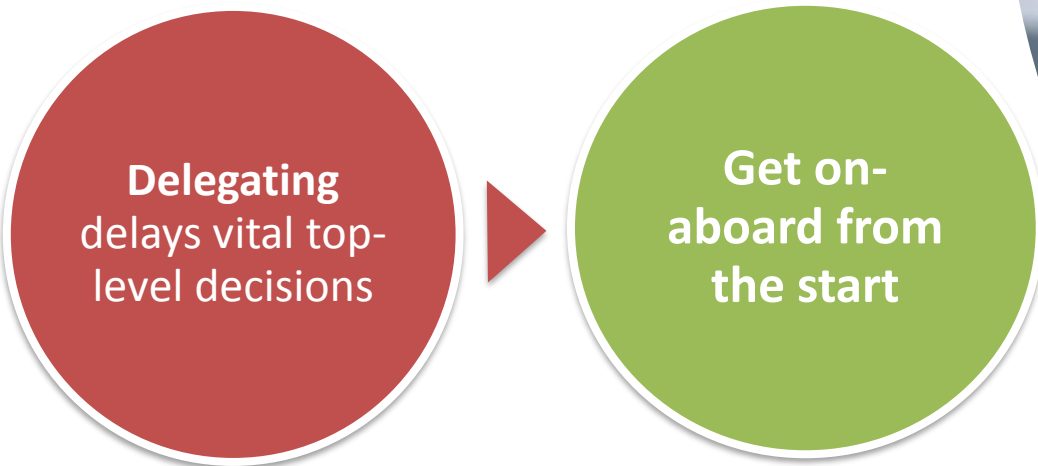


10/9/2018

© 2018 Rulex, Inc.

Escalation to Top Management

To quickly generate value through new technologies, C-level management must be actively involved

A diagram consisting of two circles. The left circle is red and contains the text "Delegating delays vital top-level decisions". A small red triangle points from the right side of this circle to the left side of a green circle on the right. The green circle contains the text "Get on-board from the start".

Delegating
delays vital top-
level decisions

**Get on-
aboard from
the start**



A red sports car is driving on a two-lane road that stretches into the distance. The scene is set at sunset or sunrise, with a warm, golden light illuminating the sky and the road. The car is in the right lane, moving towards the viewer. The background features a line of trees and a clear sky. The overall mood is one of freedom and forward motion.

You are the
drivers of
change

Rulex

The AI that tells you why™

Andrea Ridi

CEO Rulex

a.ridi@rulex.ai

www.rulex.ai