



```
0101 001011 10101  
11011 001 1101 01  
100 110101 000110  
11 0110 01 11010  
0110 11 01 10 100
```

A Utilização de Algoritmos na formação da Decisão Judicial

Razão, Emoções e Sentimentos

Luis Martins

Advogado – IBM Corporation

Lisboa, 7 de Junho de 2018

Glossário Básico

Sistema Computacional

Máquina eletro-eletrônica com capacidade de assimilar dados, imagens ou áudio e executar determinadas operações devolvendo esses dados transformados em virtude destas operações

Processador

Circuito integrado que realiza as funções de cálculo e tomada de decisão de um computador de acordo com as instruções armazenadas na sua memória representadas por um sistema binário

Algoritmo

Enunciado lógico, finito e definido, de instruções que devem ser executadas sequencialmente por um computador para resolver um problema ou executar uma tarefa.

Linguagem Programação

Conjunto de regras sintáticas e semânticas usadas para traduzir as instruções sequenciais de um algoritmo em sinais elétricos (chamados bits) de forma a que possam ser executadas por um computador.



Computação Cognitiva

Sistemas de computação neurófic que tentam mimetizar cérebro humano e o funcionamento das redes neurais humanas (i.e. as sinapses neuronais, impulsos nervosos dos neurônios que são transformados em impulsos químicos).

Aprendizagem Automática

Utilização de algoritmos estruturados tendo em vista a sua alteração evolutiva em função da avaliação do resultado da sua aplicação a conjuntos massivos de dados.

Processamento de Linguagem Natural

Aplicação de distintas metodologias para a compreensão automática da linguagem humana, mediante a conversão de ocorrências de linguística em representações formais captadas por um computador

Big Data

Conjuntos massivos de dados com elevado valor económico e científico, sempre e quando, aplicando a metodologia de análise adequada seja possível extrair esse valor.

Singularidade Tecnológica

O desenvolvimento tecnológico obedece à teoria da aceleração dos retornos exponenciais e não à evolução linear no espaço e no tempo em que decorre a história do Homem

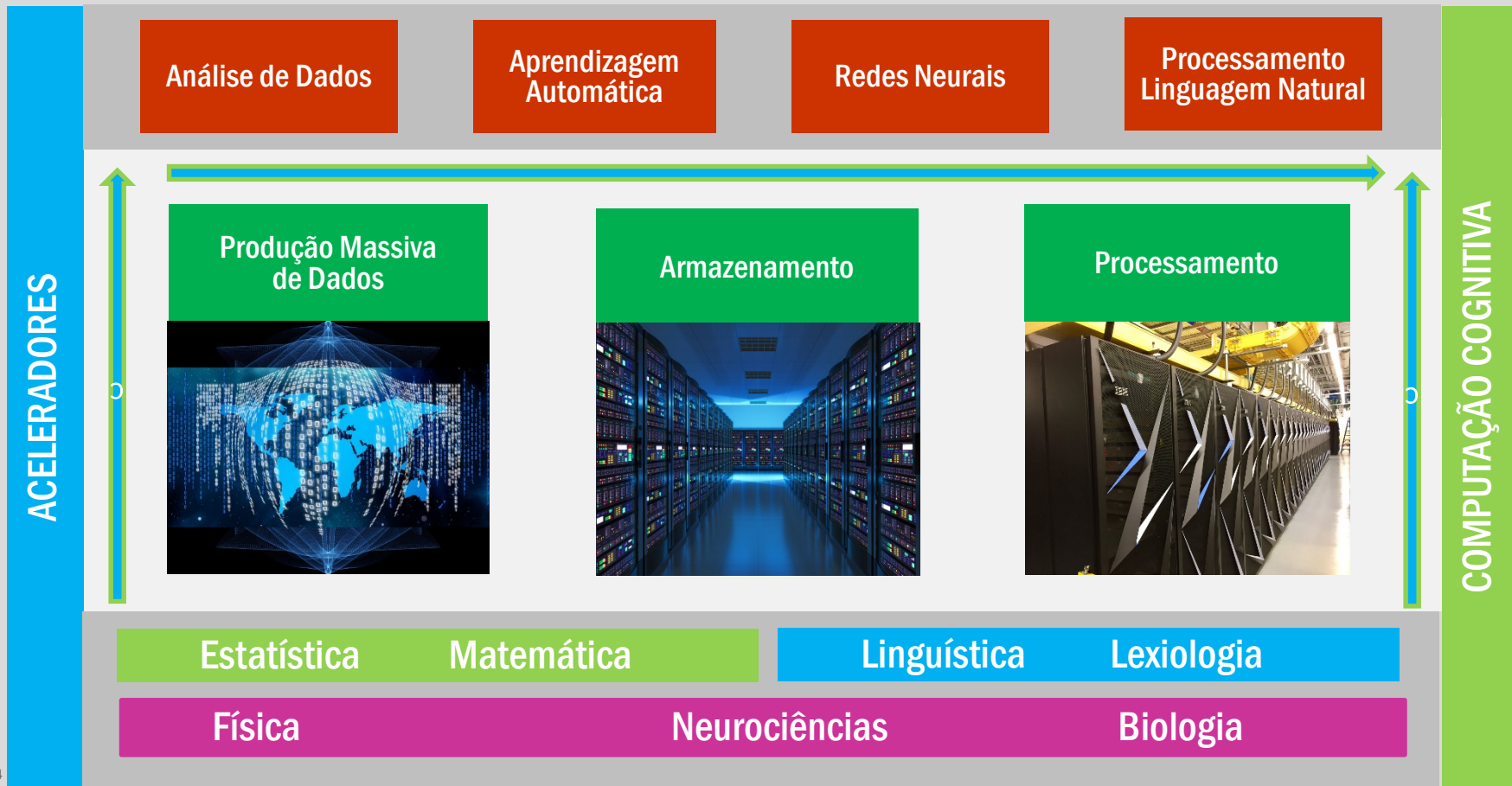
Esse desenvolvimento é representado por uma curva hiperbólica em que os acréscimos finitos conduzem a um potencial tecnológico infinito

Durante os 100 anos do século XXI – considerando a taxa actual de desenvolvimento - o progresso tecnológico será equivalente a 20.000 anos

Super-Inteligência: será alcançada quando os computadores ultrapassarem largamente a inteligência humana e resolverem problemas ainda desconhecidos



Computação Cognitiva ou Neuromórfica



Análise de Dados

O desenvolvimento tecnológico obedece à teoria da aceleração dos retornos exponenciais e não à evolução linear no espaço e no tempo

Esse desenvolvimento é representado por uma curva hiperbólica em que os acréscimos finitos conduzem a um potencial tecnológico infinito

Durante os 100 anos do século XXI – considerando a taxa actual de desenvolvimento - o progresso tecnológico será equivalente a 20.000 anos

Super-Inteligência: será alcançada quando os computadores ultrapassarem largamente a inteligência humana e resolverem problemas ainda desconhecidos



Justiça Predictiva: Utilização de Algoritmos na Decisão Judicial

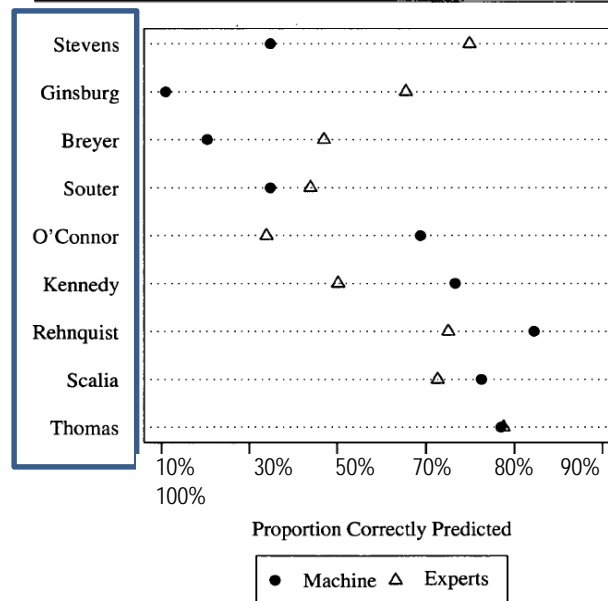
No processo de determinação da medida concreta da pena mostram-se critérios informadores “a culpa do agente” e “as exigências de prevenção”

Risco de Reincidência: Calculado por Algoritmo



Análise Predictiva das Decisões do Supremo Tribunal EUA (2002)

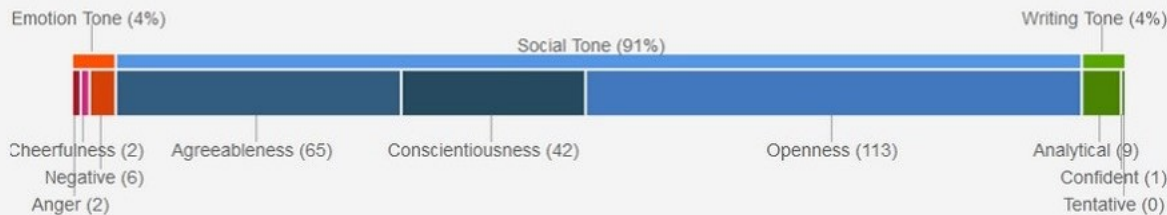
	Case Outcome Forecast		Total
	Correct	Incorrect	
Machine	75.0%	25.0%	100.0%
Experts	59.1%	40.9%	100.0%



Source: Columbia Law Review, The Supreme Court Forecasting Project, 2002

Personalidade: conjunto de características psicológicas que determinam os padrões de pensar, sentir e agir

Identificação de comportamentos futuros utilizando a modelos probabilísticos... e mais



Click on any highlighted word to see suggested synonyms.

Hi Team,

I know the times are difficult. Our sales have been disappointing for the past three quarters for our data analytics product suite. We have a competitive data analytics product suite in the industry. But we need to do our job selling it!

We need to acknowledge and fix our sales challenges. We can't blame the economy for our lack of execution! We are missing critical sales opportunities. Our product is in no way inferior to the competitor products. Our clients are hungry for analytical tools to improve their business outcomes. Economy has nothing to do with it. In fact, it is in times such as this, our clients want to get the insights they need to turn their businesses around. Let's buckle up and execute.

Personality Portrait

7188 words analyzed: Very Strong Analysis

Summary

You are particular, analytical and shrewd.

You are assertive: you tend to speak up and take charge of situations, and you are comfortable leading groups. You are philosophical: you are open to and intrigued by new ideas and love to explore them. And you are empathetic: you feel what others feel and are compassionate towards them.

Your choices are driven by a desire for organization.

You are relatively unconcerned with both achieving success and taking pleasure in life. You make decisions with little regard for how they show off your talents. And you prefer activities with a purpose greater than just personal enjoyment.

[How did we get this?](#)

You are likely to _____

- be sensitive to ownership cost when buying automobiles
- like historical movies
- volunteer for social causes

You are unlikely to _____

- be influenced by social media during product purchases
- prefer style when buying clothes
- like rap music

Personality

% = percent

Consumer Needs

% = percent

Values

% = percent



Tone Analyzer

This service uses linguistic analysis to detect joy, fear, sadness, anger, analytical, confident and tentative tones found in text.

*This system is for demonstration purposes only and is not intended to process Personal Data. No Personal Data is to be entered into this system as it may not have the necessary controls in place to meet the requirements of the General Data Protection Regulation (EU) 2016-679.

Resources:

[Documentation](#)
[API Reference](#)
[Fork on GitHub](#)

Start for free in IBM Cloud

Sample use cases

Choose an example to learn how you can adjust the tone of your content to change people's perceptions, or improve its effectiveness. [Learn more](#)

- Tweets
- Online Review
- Email message
- Product Review in French
- Your own text

Analyzing Customer Engagement Data? Try out the [Tone Analyzer Customer Engagement Endpoint](#).

I hate these new features On #ThisPhone after the update.
I hate #ThisPhoneCompany products, you'd have to torture me to get me to use #ThisPhone.
The emojis in #ThisPhone are stupid.
#ThisPhone is a useless, stupid waste of money.
#ThisPhone is the worst phone I've ever had - ever!
#ThisPhone another ripoff, lost all respect SHAME!
I'm worried my #ThisPhone is going to overheat like my brother's did.
#ThisPhoneCompany really let the down... my new phone won't even turn on.

Analyze

Razão, Emoções Sentimentos

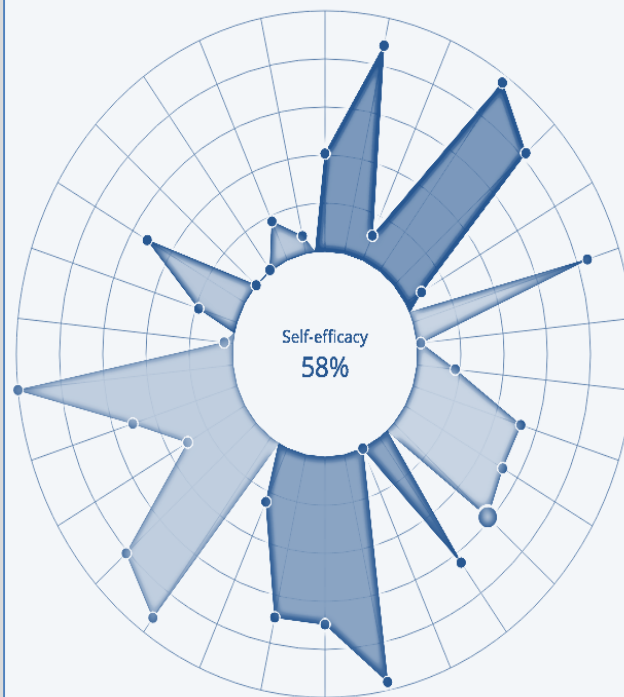


O **Raciocínio Jurídico** resulta da combinação da razão, emoções e sentimentos que formam a inteligência humana, cujas representações poderão em parte ser emuladas, mas nunca substituídas.

Emoção: é um conjunto de reacções corporais, automáticas e inconscientes, face a determinados estímulos provenientes do meio onde estamos inseridos

Sentimento: surge quando tomamos consciência das nossas emoções, isto é, o sentimento dá-se quando as nossas emoções são transferidas para determinadas zonas do nosso cérebro, onde são codificadas sob a forma de actividade neuronal.

Análise de Personalidade (inputs: escrita, audio, visual)



Openness	95%
Adventurousness	40%
Artistic interests	88%
Emotionality	11%
Imagination	96%
Intellect	82%
Authority-challenging	8%
Conscientiousness	15%
Achievement striving	84%
Cautiousness	1%
Dutifulness	17%
Orderliness	52%
Self-discipline	52%
Self-efficacy	58%
Extraversion	5%
Activity level	64%
Assertiveness	0%
Cheerfulness	96%
Excitement-seeking	69%
Outgoing	69%
Gregariousness	24%
Agreeableness	56%
Altruism	92%
Cooperation	80%
Modesty	30%
Uncompromising	50%
Sympathy	100%
Trust	4%
Emotional range	46%
Fiery	18%
Prone to worry	52%
Melancholy	0%
Immoderation	0%
Self-consciousness	17%
Susceptible to stress	7%

Viés Inductivo: o preconceito humano contaminando a máquina

★ PARIS SCIENCES & LETTRES (PSL)

PARIS INNOVATION REVIEW

Topics ▾ About Authors Contact us

FR - EN - 台灣繁體

Predictive justice: when algorithms pervade the law

To most people, the term "predictive justice" refers to a science fiction short story by Philip K. Dick titled *The Minority Report* in which precogs predict future crimes. But it also covers a complex reality. In the United States, judges use software to assess a suspect's likelihood of reoffending. Elsewhere in the world, emerging start-up offer to anticipate litigation outcomes and their potential compensations. Legal Tech offers many advantages (automation of repetitive tasks for lawyers, diversion, reduction of judicial risk, etc.) but this isn't without risk. Indeed, justice could become sheeplike, unfair and dehumanized.

9 June 2017 Paris Innovation Review

SUBSCRIBE

SCIENCE ADVANCES | RESEARCH ARTICLE

RESEARCH METHODS

The accuracy, fairness, and limits of predicting recidivism

Julia Dressel and Hany Farid*

Algorithms for predicting recidivism are commonly used to assess a criminal defendant's likelihood of committing a crime. These predictions are used in pretrial, parole, and sentencing decisions. Proponents of these systems argue that big data and advanced machine learning make these analyses more accurate and less biased than humans. We show, however, that the widely used commercial risk assessment software COMPAS is no more accurate or fair than predictions made by people with little or no criminal justice expertise. In addition, despite COMPAS's collection of 137 features, the same accuracy can be achieved with a simple linear predictor with only two features.

Copyright © 2018
The Authors, some
rights reserved;
exclusive licensee
American Association
for the Advancement
of Science. No claim to
original U.S. Government
Works. Distributed
under a Creative
Commons Attribution
NonCommercial
License 4.0 (CC BY-NC).

The New York Times

SIDEBAR

Sent to Prison by a Software Program's Secret Algorithms



Predictive Algorithms Are Not Inherently Unbiased



Seeta Peña Gangadharan, an assistant professor in the department of Media and Communications at the London School of Economics, is an affiliate fellow at the Data & Society Research Institute.

UPDATED NOVEMBER 19, 2015, 9:33 AM

The implementation of predictive policing programs is taking place with a dangerously myopic view of technology's role in public safety.

A misguided belief in the objectivity and neutrality of predictive technologies permeates every step of the process — from the software developers of companies like [PredPol](#) and [IBM SPSS](#), to frontline officers responding to computer recommendations of crime "hot spots," to the local administrators monitoring police department performance. But there is [bias inherent](#) in these technical systems, and more important, they do little to address the underlying and enduring causes of violence and crime.



ing artificial intelligence in
w the judiciary goes about



Obrigado!

