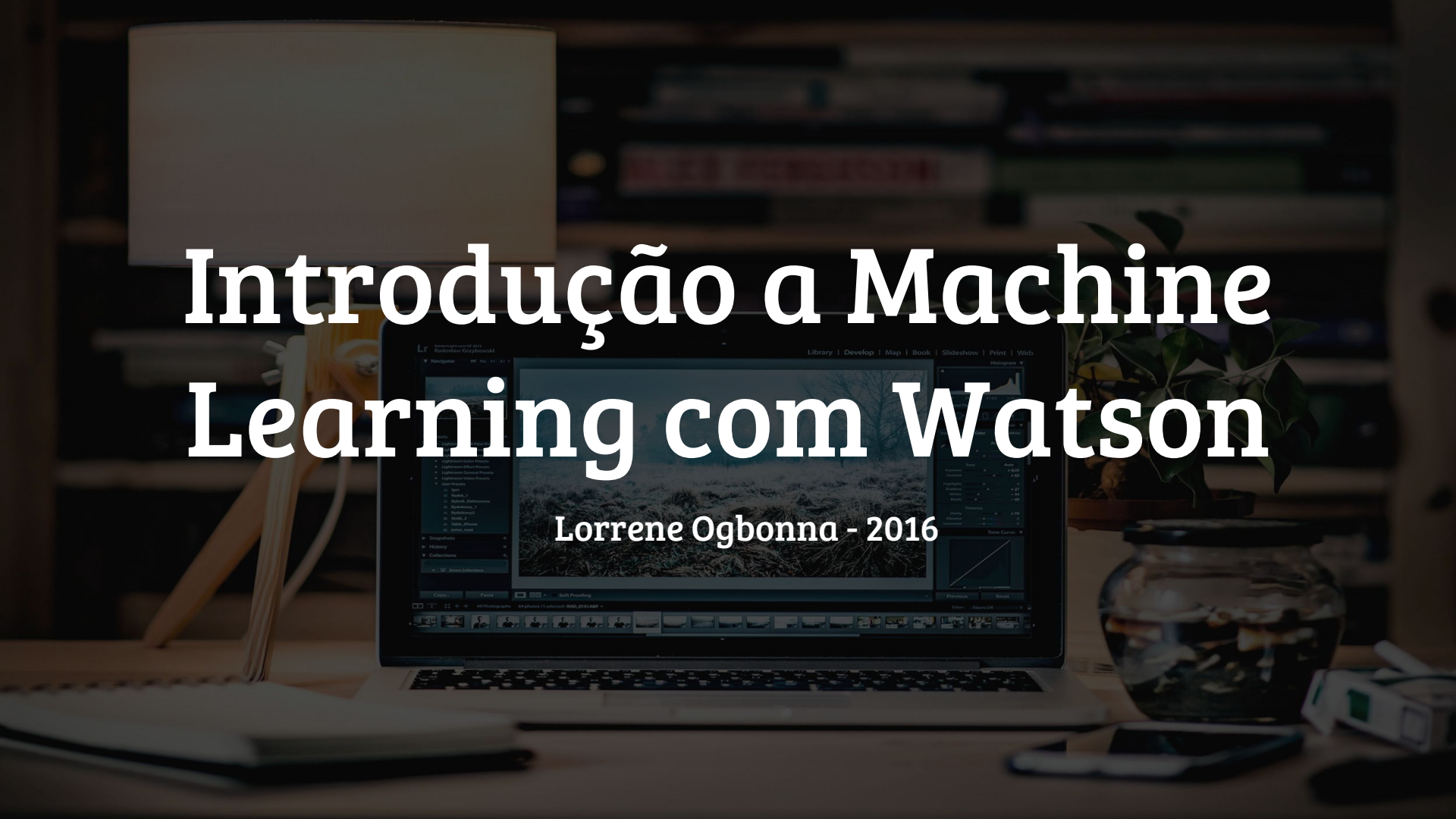


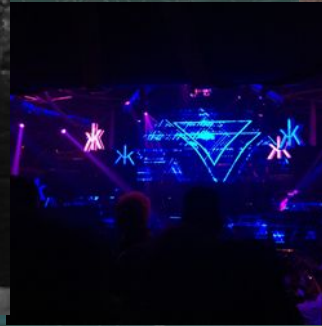
# Introdução a Machine Learning com Watson

Lorrene Ogbonna - 2016

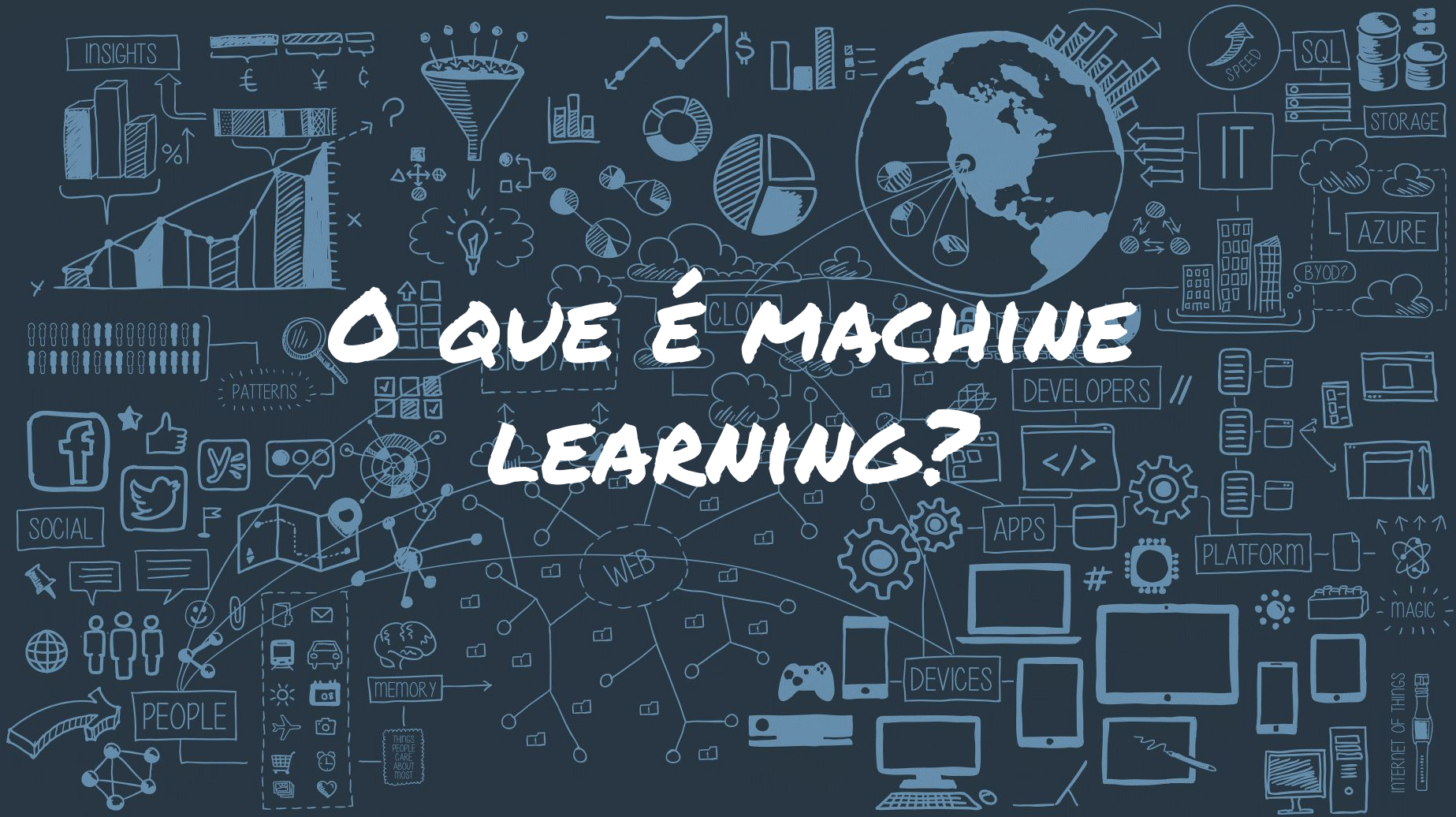




BREVE APRESENTAÇÃO SOBRE MIM...



# QUE É MACHINE LEARNING?

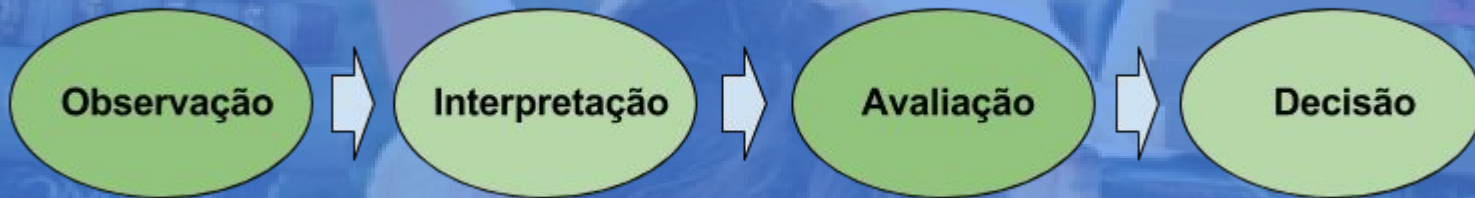




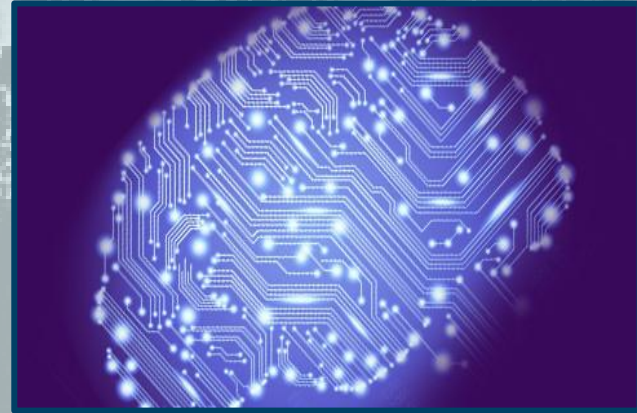
# Machine learning

- **Estratégia**
- **Inteligência artificial**
- **Algoritmos de aprendizagem por exemplos e experiência.**
- **Classificador**
- **Criador de padrões e regras**
- **Análogo a um manual de instruções**

# Processo de Aprendizagem



# ANÁLISE HISTÓRICA



O QUE SÃO DADOS ESTRUTURADOS?






A close-up photograph of a gorilla's face, looking upwards and to the left with a thoughtful expression. The gorilla's hand is visible near its mouth, as if it is about to eat or is in the middle of a meal. The background is a soft, out-of-focus green, suggesting a natural habitat. The overall image has a dark green tint.

É DADOS NÃO ESTRUTURADOS?

## Unstructured text

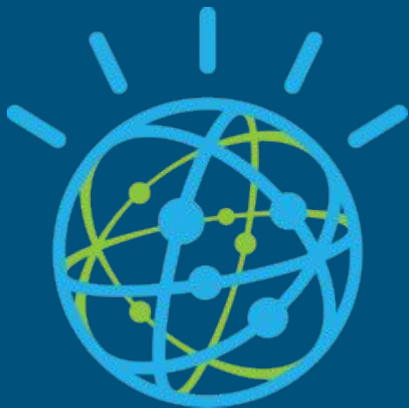
work smarter. Transforming our business models. Driving our competitive cost structure. Setting up end-to-end ownership. And making sure we make the most of our resources. IT creates the re-usable building blocks with which we assemble integrated solutions, and deliver the consulting that makes the technology work. Excellence is the minimum standard acceptable. Job description Developer position with focus on MS Access application with components in MS Access, SQL Server, ASP, and ASP .Net, Java. Activities will include but not limit to the followings: Develop/enhance systems base on requirements and analysis provided by customers; Perform Design, Coding, Unit Testing, and Documentation on assigned work; Provide guidance to other developers/testers in the same organization as needed; Resolve technical issues for customers with quick response and high quality; Attending technical and project management meetings; Help on enhancement/maintenance on legacy components; Communicate properly to both on-shore and off-shore partners at different time zones. Qualifications The ideal candidate for this position will be someone who is a developer on Tera platforms and products. The candidate should have been through large and small projects and have worked with the full IT Software Development Life Cycle. The candidate should understand that design, unit test, documentation is part of the development effort. The candidate should also be flexible to help on enhancement/maintenance on legacy components that are written in Pro\*C, PL/SQL, Oracle. Required Experience: Must have 2 or 3+ years of experiences on MS Access development along with other required skill sets listed below. Must have 2+ years of experience ASP and ASP .NET. Should be able to work independently with minimum supervision and have the ability to use his/her analytical skills to solve problems. Required Skills & Training: Fluency in MS Access VBA development. Fluency in ASP, ASP .Net. Versatile in SQL Server 2000 development tool set including DTS, BCP, stored procedures, TSQL, etc. Versatile in DOS shell scripting. Required Availability & Location: This is an off shore position in Shanghai, China. The candidate will work with the development team in Houston, USA. The candidate must be available for occasional evening Central US time phone conference with Houston, USA to resolve issues or gather requirements. Additional Desired Experience, Skills, and Training: Informatica, Oracle, Business Objects, C, C++, Java, JSP.

## Structured text



Sample Contents: TOTAL\_IT\_SKILLS\_ASKED

COMPANY	TIME	ID	SKILL_CAT	SKILL_DET	SKILL_ID
Sigatrac	2005-03-02	3	Database skills	database	13
Sigatrac	2005-03-02	6	Database skills	database	13
Sigatrac	2005-03-02	21	C/C++	C	2
Sigatrac	2005-03-02	21	Oracle	Oracle	14
Sigatrac	2005-03-02	23	Oracle	Oracle	14
Sigatrac	2005-03-02	23	C/C++	C	2
Sigatrac	2005-03-02	28	Unix/Linux	Linux	10
Sigatrac	2005-03-02	39	Network	network	22
Sigatrac	2005-03-02	45	Network	network	22
Sigatrac	2005-03-02	46	Network	networking	22
Sigatrac	2005-03-02	49	C/C++	C	2
Sigatrac	2005-03-02	49	Database skills	database	13
Sigatrac	2005-03-02	49	Network	network	22
Sigatrac	2005-03-02	49	C/C++	C	2
Sigatrac	2005-03-02	49	Database skills	database	13
Sigatrac	2005-03-02	49	Network	network	22
Sigatrac	2005-03-02	52	Unix/Linux	Linux	10
Sigatrac	2005-03-02	52	Others OS	Solaris	12
Sigatrac	2005-03-02	53	Unix/Linux	Linux	10
Sigatrac	2005-03-02	54	Unix/Linux	Linux	10
Sigatrac	2005-03-02	55	Unix/Linux	Linux	10
Sigatrac	2005-03-02	65	Database skills	databases	13
Sigatrac	2005-03-02	65	PL/SQL	SQL	18
Sigatrac	2005-03-02	66	MS SQL Server	Microsoft S...	17
Sigatrac	2005-03-02	66	PL/SQL	SQL	18
Sigatrac	2005-03-02	66	web skills	HTML	19
Sigatrac	2005-03-02	68	Java	Java	1
Sigatrac	2005-03-02	68	Oracle	Oracle	14
Sigatrac	2005-03-02	68	Java	Java	1



Sistema cognitivo criado pela IBM.

Big Data + Analytics + Cognitive Computing

# Linguagem natural

Ler e entender a linguagem humana e suas variações



Lorrene trabalha na Centauro. Ela mora em São Paulo.

# Ações

**Geração de hipótese e validação**

**Predição**

**Recuperação e extração de informação**

**Dados não estruturados** → **dados estruturados**

**Reconhecimento de padrões**

**Constante atualização**

T	F	T	T	F
T	F	T	T	F
T	F	T	T	F
T	F	T	F	F
T	F	T	T	F
T	F	T	T	F
T	F	T	T	F
T	F	T	T	F

$$\text{FIND } 7+12+17+22+\dots+342$$

$$6N=7+12+17+22+\dots+342$$

$$6N=342+347+352+357+\dots+7$$

$$25N=349+349+349+329+\dots+349$$

$$25N=349+349+349+329+\dots+349$$

$$25N=349+349+349+329+\dots+349$$

7, 11, 15, 19, 23, ...



$$V-E+F=2$$

A top-down view of a person's hands working at a desk. The person is wearing a light-colored, patterned shirt. Their left hand is resting on a silver laptop, and their right hand is resting on a spiral-bound notebook. The desk is cluttered with various items: a white coffee cup on a saucer with a spoon, several colorful highlighters (one labeled 'LIGHT'), a white pen, and a small white object. The background shows a laptop screen displaying a grid of images. The entire scene is overlaid with a semi-transparent red filter.

**Como funciona?**

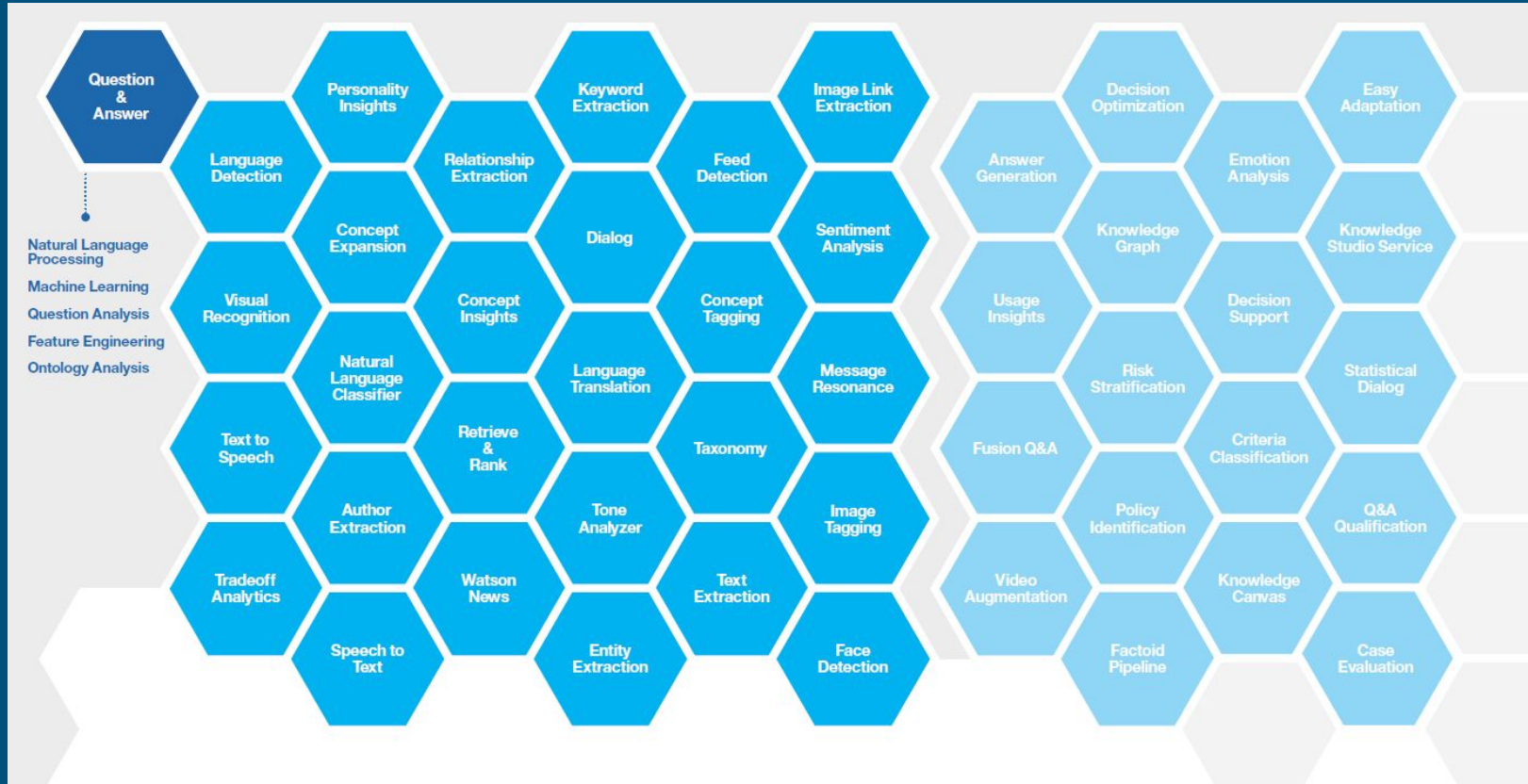
A blue-tinted background image showing a business meeting. In the foreground, there is a laptop on the left and several sheets of paper with charts and graphs on the right. In the background, three people in business attire are standing and talking. The overall scene is professional and modern.

# O que podemos inferir?

## Futuro: Era cognitiva

### Sistemas cognitivos

# Ferramentas do Watson(skills)





# Plataformas



**IBM Bluemix**

Licença de 30 dias.

A close-up photograph showing a person's hands kneading a piece of dough. The dough is being worked on a wooden rolling pin, which is resting on a wooden surface. The scene is overlaid with a semi-transparent blue filter. The text "HANDS-ON PART!" is written in a white, bold, sans-serif font across the center of the image.

**HANDS-ON PART!**

A blurred background of a crowd of people, with a person's hand raised in the foreground. The scene is lit with warm, orange-toned lights, creating a bokeh effect. The word "Perguntas?" is overlaid in white text, with a blue underline under the letter 'u'.

**Perguntas?**



Fim...  
obrigada !!

