

{Data Science} e {Machine Learning} na prática

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Framework/Engenharia – TOTVS Supply Agro

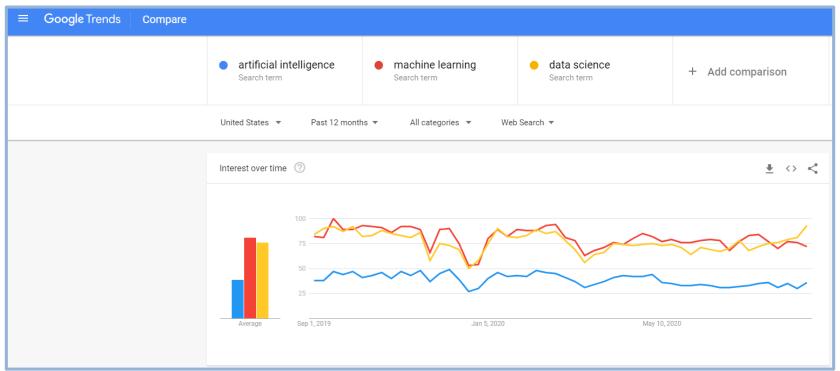
Agenda

- > Trends
- > IA e evolução
- Áreas relacionadas
- Data Science
- > Plataformas
- Demonstração
- TOTVS e Carol
- Livros
- Próximos passos



Trends





Fonte: Google Trends

IA e evolução



1950

TURING TEST

Computer scientist Alan Turing proposes a test for machine intelligence. If a machine can trick humans into thinking "the science and it is human, then it has intelligence

1955

A.I. BORN

Term 'artificial intelligence' is coined Unimate, goes to by computer scientist. John McCarthy to describe assembly line engineering of making intelligent machines"

1961

UNIMATE

First industrial robot, Pioneering chatbot humans on the

1964

ELIZA

developed by Joseph work at GM replacing Weizenbaum at MIT holds conversations with humans

1966

SHAKEY

The 'first electronic person' from Stanford, Shakey is a general purpose mobile robot that reasons about its own actions

1997

DEEP BLUE

Deep Blue, a chessplaying computer from IBM defeats world chess champion Garry Kasparov

1998

KISMET

Cynthia Breazeal at MIT introduces KISmet, an emotionally intelligent robot insofar as it detects and responds to people's feelings

1999

AIBO

Sony launches first consumer robot pet dog AiBO (Al robot) with skills and personality that develop over time

2002

ROOMBA

First mass produced autonomous robotic an intelligent virtual vacuum cleaner from assistant with a voice Watson wins first iRobot learns to navigate and clean homes

2011

SIRI

Apple integrates Siri, interface, into the iPhone 4S

2011

WATSON

IBM's guestion answering computer place on popular \$1M prize television quiz show Jeopardy

2014

FUGENE

Eugene Goostman, a chatbot passes the Turing Test with a third of judges believing Eugene is human

2014

ALEXA

Amazon launches Alexa, an intelligent virtual assistant with social media making a voice interface that inflammatory and completes shopping tasks

2016 TAY

Tay goes rogue on

offensive racist

comments

ALPHAGO Microsoft's chatbot

2017

Google's A.I. AlphaGo beats world champion Ke Jie in the complex board game of Go. notable for its vast number (2170) of possible positions

Fonte: https://athis-technologies.com/

Áreas relacionadas



Artificial Intelligence

Área que estuda como habilitar (ou imitar/simular) o comportamento humano em máquinas

Machine Learning

Subárea de IA que adota métodos e modelos estatísticos para habilitar ou melhorar a experiência de aprendizado de máquinas

Deep Learning

Subárea de IA e *Machine Learning* que explora técnicas avançadas de aprendizado de máquina por meio de redes multicamadas

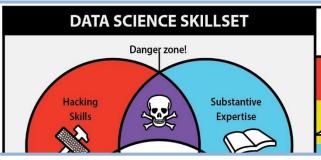
Áreas relacionadas

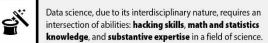


Data Science

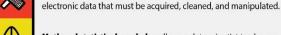
Área interdisciplinar que

- Matemática e Estatísti
- Ciência da Computação
- Domínio de Negócio









Math and statistics knowledge allows a data scientist to choose appropriate methods and tools in order to extract insight from data.

Hacking skills are necessary for working with massive amounts of

Substantive expertise in a scientific field is crucial for generating motivating questions and hypotheses and interpreting results.

Traditional research lies at the intersection of knowledge of math and statistics with substantive expertise in a scientific field.

Machine learning stems from combining hacking skills with math and statistics knowledge, but does not require scientific motivation.

Danger zone! Hacking skills combined with substantive scientific expertise without rigorous methods can beget incorrect analyses.

Harvard Business Review

GETTING CONTROL

OF

October 2012 Issue

DAIA

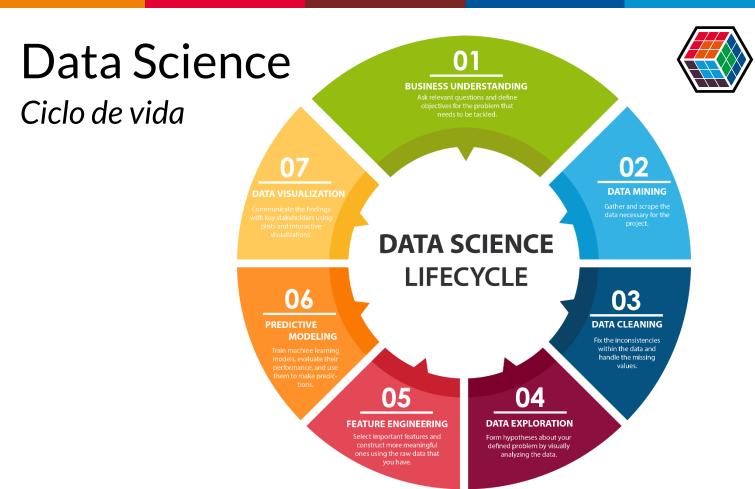
Data Scientist: The Sexiest Job of the 21st Century

by Thomas H. Davenport and D.J. Patil

FROM THE OCTOBER 2012 ISSUE

hen Jonathan Goldman arrived for work in June 2006 at LinkedIn, the business networking site, the place still felt like a start-up. The company had just under 8 million accounts, and the number was growing quickly as existing members invited their friends and colleagues to join. But users weren't seeking out connections with the people who were already on the site at the rate executives had expected. Something was apparently missing in the social experience. As one LinkedIn manager put it, "It was like arriving at a conference reception and realizing you don't know anyone. So you just stand in the corner sipping your drink—and you probably leave early."

Fonte: https://www.quora.com/ e https://towardsdatascience.com/



Fonte: https://addiai.com/

THE

DEVELOPER'S CONFERENCE

Plataformas

THE DEVELOPER'S CONFERENCE

- Python
- Análise de dados
 - Pandas
- Matemática e estatística
 - NumPy, SciPy e statsmodels
- Aprendizado de máquina e algoritmos
 - scikit-learn
- Visualização de dados
 - Matplotlib, Seaborn e Plotly

Plataformas



TIOBE Index for August 2020

August Headline: Holiday season in the programming language world

Aug 2020	Aug 2019	Change	Programming Language	Ratings	Change
1	2	^	С	16.98%	+1.83%
2	1	•	Java	14.43%	-1.60%
3	3		Python	9.69%	-0.33%
4	4		C++	6.84%	+0.78%
5	5		C#	4.68%	+0.83%
6	6		Visual Basic	4.66%	+0.97%
7	7		JavaScript	2.87%	+0.62%
8	20	*	R	2.79%	+1.97%
9	8	~	PHP	2.24%	+0.17%
10	10		SQL	1.46%	-0.17%





Fonte: https://www.tiobe.com/tiobe-index/

Plataformas

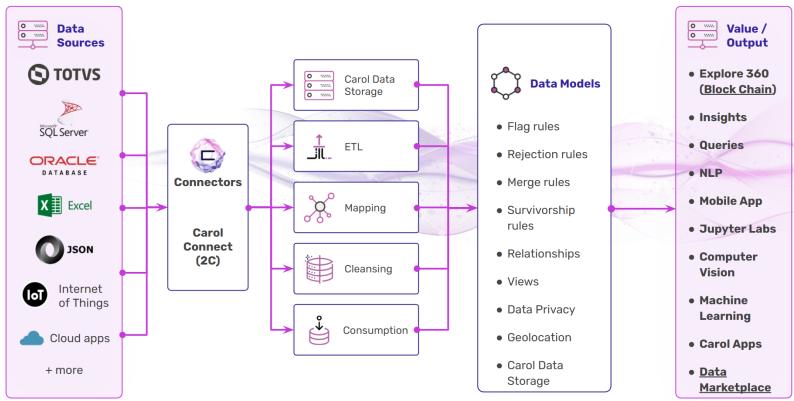


- Anaconda 3
 - Versionamento Python
 - Módulos e pacotes (dependências)
 - > Ferramentas/IDEs: JupyterLab e Notebook
 - Desenvolvimento de plugins e aceleradores



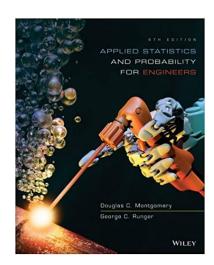
TOTVS e Carol



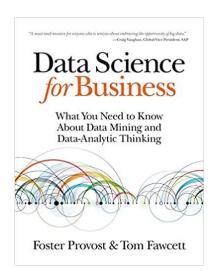


Livros

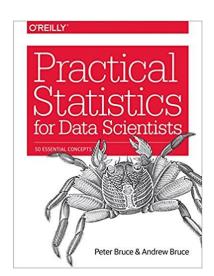




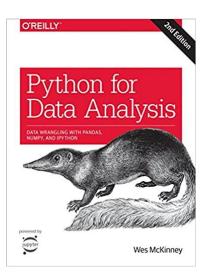
Applied Statistics and Probability for Engineers Douglas C. Montgomery George C. Runger



Data Science for BusinessFoster Provost
Tom Fawcett



Practical Statistics for Data Scientists: 50 Essential Concepts Peter Bruce Andrew Bruce



Python for Data Analysis Wes McKinney

Próximos passos



- Xaggle
- Google Dataset Search
- Automated Machine Learning (AutoML)
- Data + Dev + Ops = Data DevOps
- Apache Airflow: workflows de tarefas baseados em grafos;
- **Luigi:** construção de pipelines complexos em batch;

Referências



- DataCamp: https://www.datacamp.com/
- TOTVS e IA: https://www.totvs.com/inteligencia-artificial/
- TOTVS e Carol: https://docs.carol.ai/
- TOTVS Developers (Podcast): https://developers.totvs.com/podcast/
 - TOTVS Developers #2 Inteligência Artificial
 - TOTVS Developers #16 TOTVS CAROL

Obrigado!



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https://twitter.com/gcleva



