

Artificial Intelligence for Business

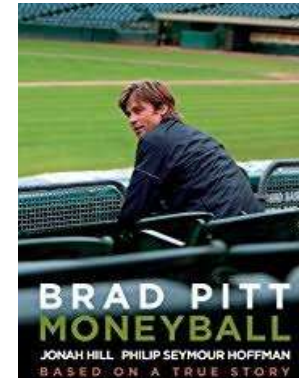
The challenges of talking AI to non-data scientists

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Ok, let's start here:



Do these movies explain what data science and AI are?

Not really.

They are mostly about some very smart yet obscure people, or a very hot actor and a random American sport (sorry, I didn't watch that one).

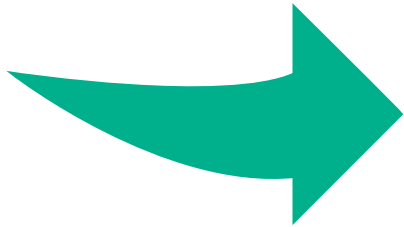
How do we explain «this stuff» then?

Let's start clarifying this for ourselves then.

Data Science, Artificial Intelligence, Machine Learning?

Wikipedia

> Data science is an interdisciplinary field of scientific methods, processes, algorithms and systems to extract [knowledge](#) or insights from [data](#) in various forms, either structured or unstructured

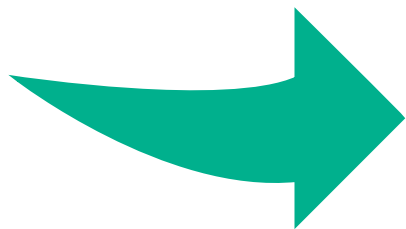


ABILITY TO GET INFORMATION OUT OF DATA

Data Science, Artificial Intelligence, Machine Learning?

Wikipedia

> **Machine learning** is a field of [computer science](#) that uses statistical techniques to give [computer systems](#) the ability to "learn" (i.e., progressively improve performance on a specific task) with [data](#)

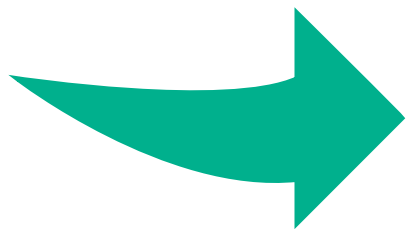


ALGORITHMS AND TECHNIQUES TO GET THAT
INFORMATION

Data Science, Artificial Intelligence, Machine Learning?

(SAS definition)

> **Artificial Intelligence** is the science of training systems to emulate human tasks through Learning and Automation



A WAY TO TURN THOSE TECHNIQUES INTO
MAKING THEM REPLICATE HUMAN BEHAVIOR



Learning

Automation

Benefit

An example

The screenshot displays the SAS Event Stream Processing Studio interface. The main window shows a video feed of a person's face, which is being analyzed for emotions. A green text overlay on the video reads "you are 64.37% angry". The interface includes a sidebar with a list of queries, a central data table, and a bottom panel with a code editor.

Queries:

- Select all
- ✓ CQ.Copy1
- ✓ CQ.Keep10Events
- ✓ CQ.Image
- ✓ CQ.ImageScoring
- ✓ CQ.modeReader
- ✓ CQ.scoreRequest

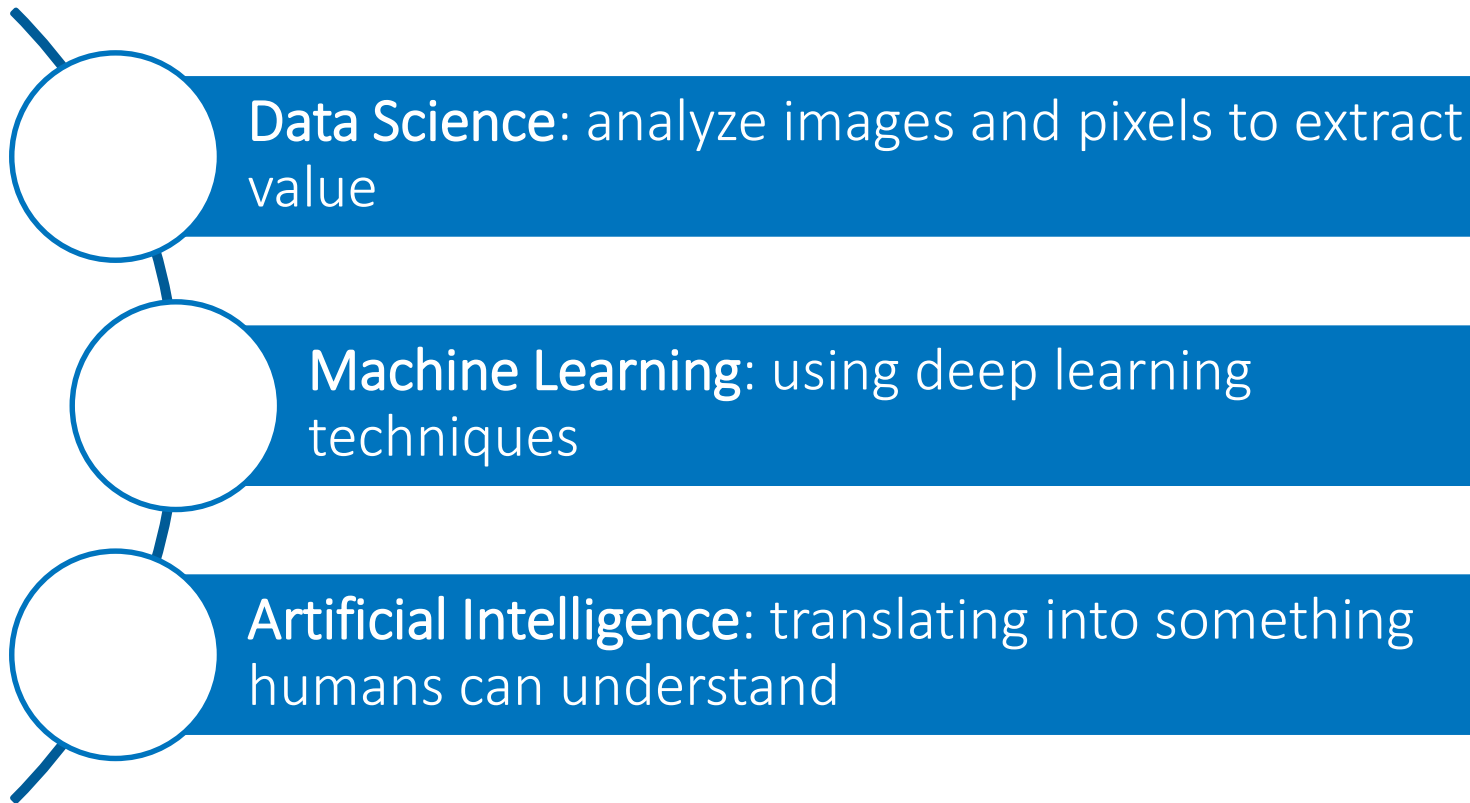
Continuous query: CQ
Retained events: 0

Opcode	id	userID	P_label	S
Insert	0	sspart	0.029739	0
Insert	1	sspart	0.037963	0
Insert	10	sspart	0.037889	0
Insert	11	sspart	0.037885	0
Insert	12	sspart	0.036127	0
Insert	13	sspart	0.037907	0
Insert	14	sspart	0.037884	0
Insert	15	sspart	0.037889	0.110554
Insert	16	sspart	0.037921	0.110777
Insert	17	sspart	0.037899	0.110431

Code Editor:

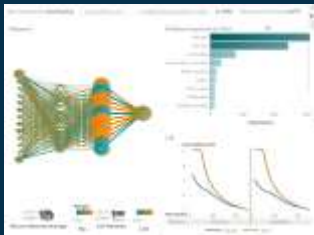
```
<class 'numpy.ndarray'>
BAQ...
OrderedD
Disgust'
0'), ('P_
sspart'
_label_Ne
keep10Even
BAQ...
OrderedD
Disgust'
0'), ('P_
sspart'
_label_Ne
keep10Even
<class 'str'>
IMAGE TYPE HERE!!!
<class 'numpy.ndarray'>
(500, 500, 3)
0 1 2 3
0 i n sspart /9j/4AAQSkZJRgABAQAAQABAAQ/2wBDAAI
BAQEBAQIBAQ...
```

Detecting Emotion Explained



How does it technically work?

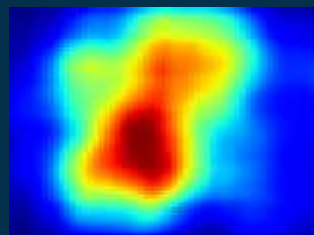
Machine Learning



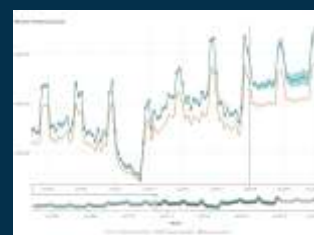
Natural Language



Computer Vision



Forecasting and Optimization



Data Management



Visualization



Decision Support



Deployment



Core
Capabilities

Supporting
Technologies

Machine Learning



More
compute
power

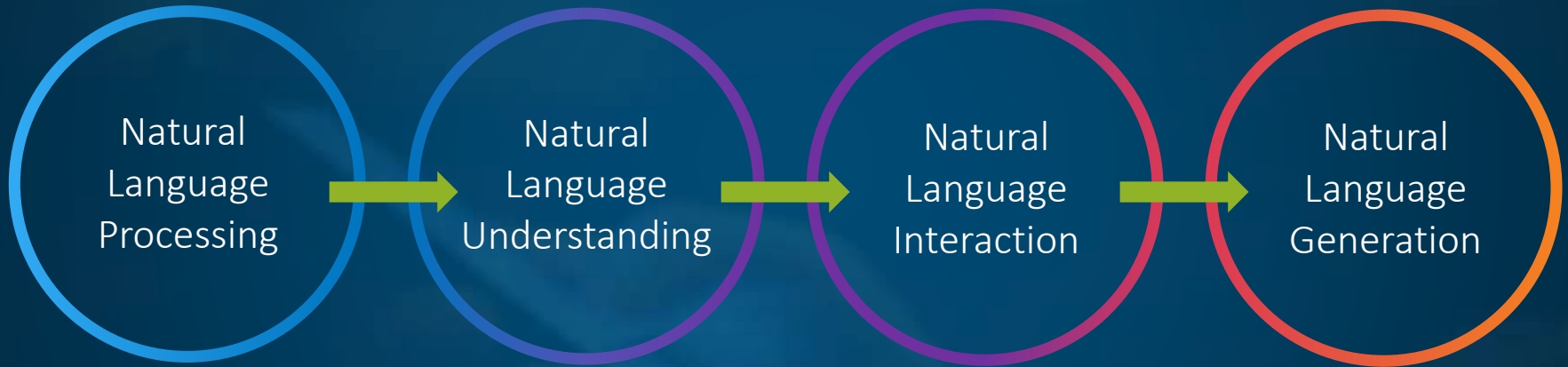
Larger
data sets

More
complex
models

Better
algorithms

DEEP
LEARNING

Natural Language



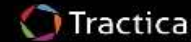
Computer Vision

Image
Processing

Image
Recognition

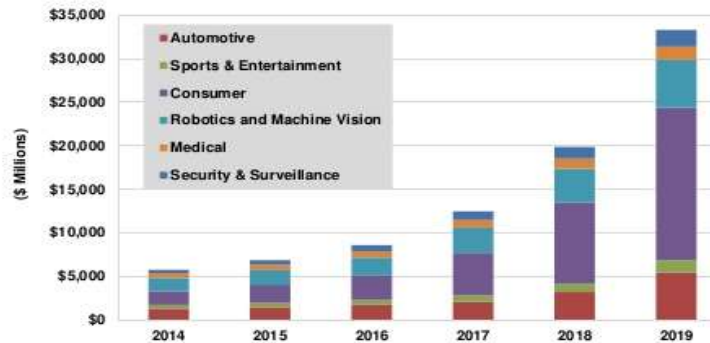
Object
Detection

Computer Vision Market Forecast



- The total computer vision market is expected to grow from \$5.7 billion in 2014 to \$33.3 billion in 2019 at a CAGR of 42%.

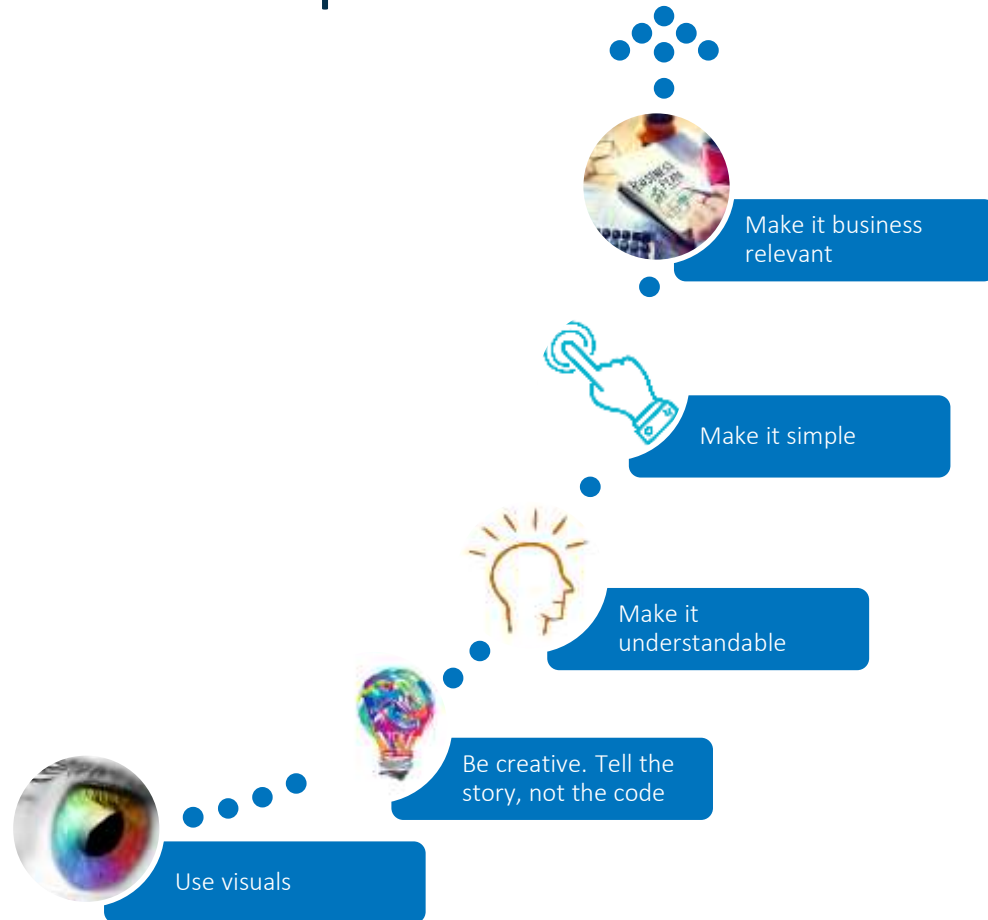
Computer Vision Revenue by Application Market, World Markets: 2014-2019



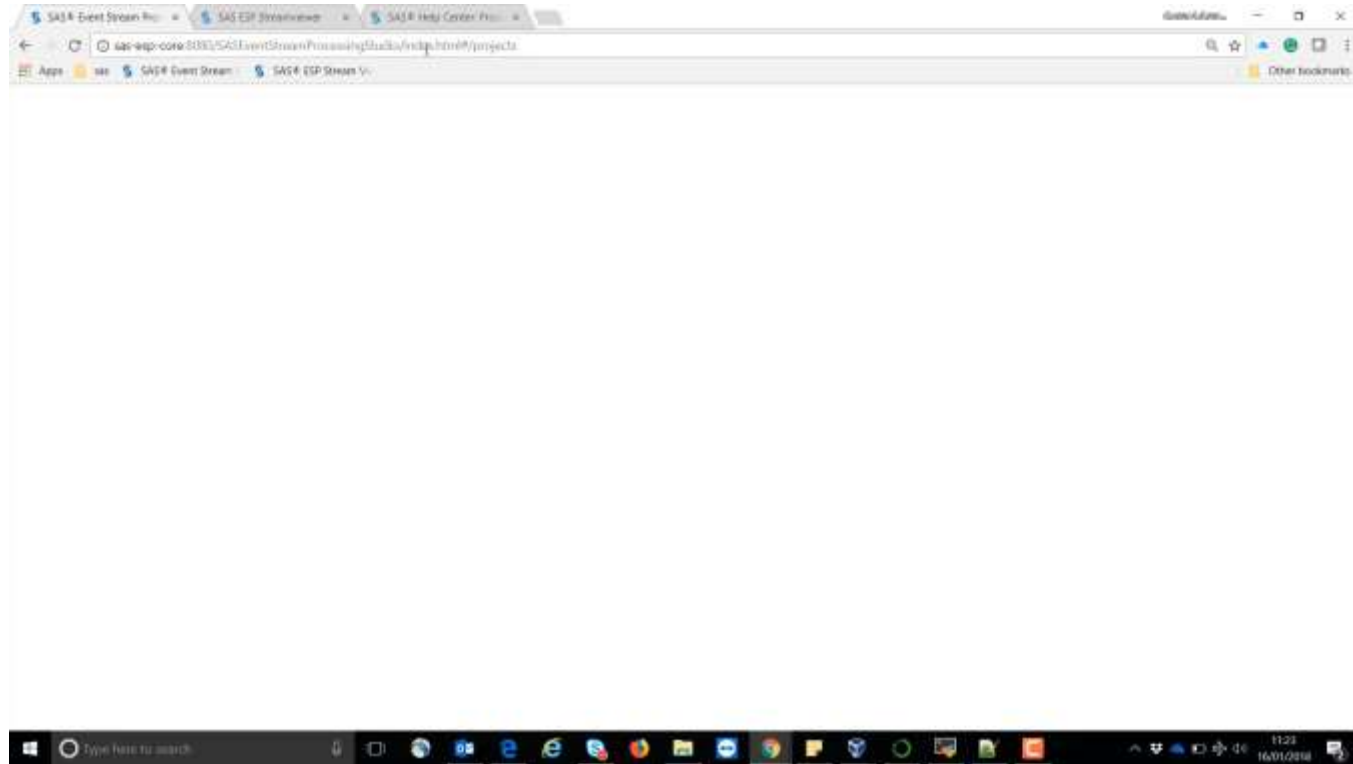
How do I explain how it works?

YOU DON'T

How do I explain how it works?



What do you understand better in this example?



Do they need to know all details?

NO.

Simulate Human Conversation

The screenshot displays the SAS Training website. At the top, the SAS logo is on the left, and 'sign in' and 'search' links are on the right. A navigation bar includes 'Home', 'Support', 'Learn', and 'Connect'. Below this, a 'LEARN / TRAINING' section features a 'Training Console' with a search bar and a 'My Training' link. A left sidebar lists various learning paths under the 'LEARN' heading, with 'Training' selected. The main content area, titled 'SAS Training', features a large banner for a 'New training center at University of Memphis' with a 'View course dates' button. Below the banner are sections for 'Starting Points' (with links like 'Log in to My Training', 'Get started with SAS', 'Get SAS certified', 'Manage your registrations', 'Join a group and learn', and 'View Top 10 course list'), 'Get Connected with SAS' (describing live SAS classrooms), 'Autocourseworks' (with social media icons), and 'Free SAS Tutorials' (with a link to 'Get started with how-to videos'). On the right, there's a 'United States' location selector, an 'EVENTS' section for 'SAS Global Forum Denver', and a 'Training Bot' chat window with the message: 'Hi! Welcome to SAS Training. I'm the Training Bot. How can I help you today?'. A search bar is at the bottom right.

How do I explain it?

Value.

They don't need to know the technical process.
They need to know if they are going to make (or save) money
(and if it's legal).

Ok. So how do I explain a recommendation engine?

Tell my husband to buy me shoes.



Thank You
Merci
Dank
Grazie

sas.com