

INTRO



Professor & Director Centre for Financial Leadership & Digital Transformation

Prof Dr Kristof Stouthuysen

Field of expertise: managerial accounting

Current focus: AI for the CFO

kristof.stouthuysen@vlerick.com

ONLINE LAUNCH: THE CENTRE FOR FINANCIAL LEADERSHIP & DIGITAL TRANSFORMATION

WEDNESDAY 7 OCTOBER
(16.00 - 17.00 PM)

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**KRISTOF
STOUTHUYSEN**
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Director of the Centre for Financial Leadership
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AI a threat or benefit for Finance and Controller professionals using MS Excel?



WHAT WE ALREADY KNOW ...

“The world’s most valuable resource is no longer oil, but data!”

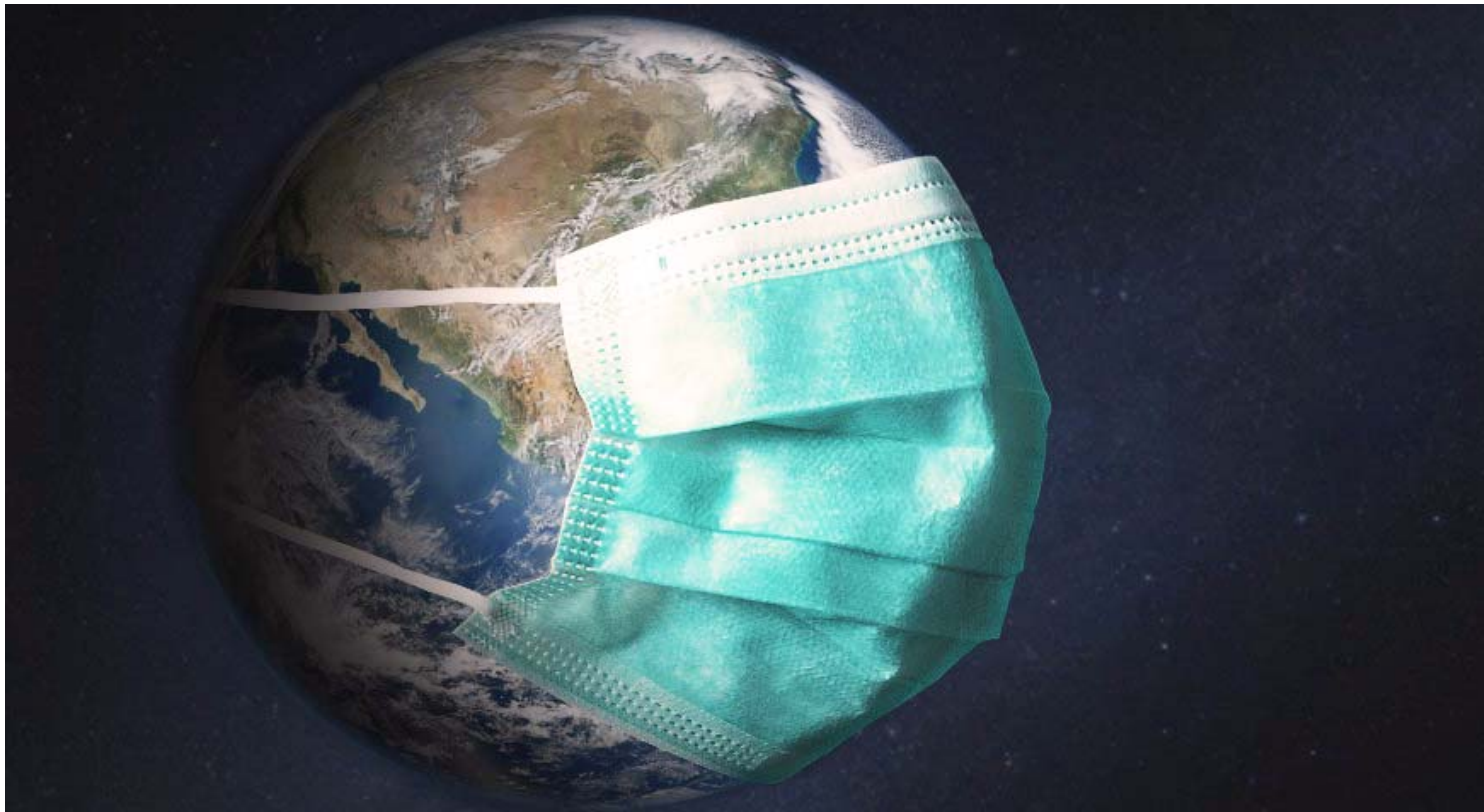
-The Economist, December 2018-

WHAT WE ALSO KNOW ...



LaValle et al., 2011, MIT

BUT THEN CAME ...



MYTH: BY NOW MOST CFOs HAVE STRONGLY INVESTED IN THE DIGITAL TRANSFORMATION OF THEIR FINANCE DEPARTMENT.

REALITY: The number of CFOs who have successfully digitally transformed their finance departments is relatively small.

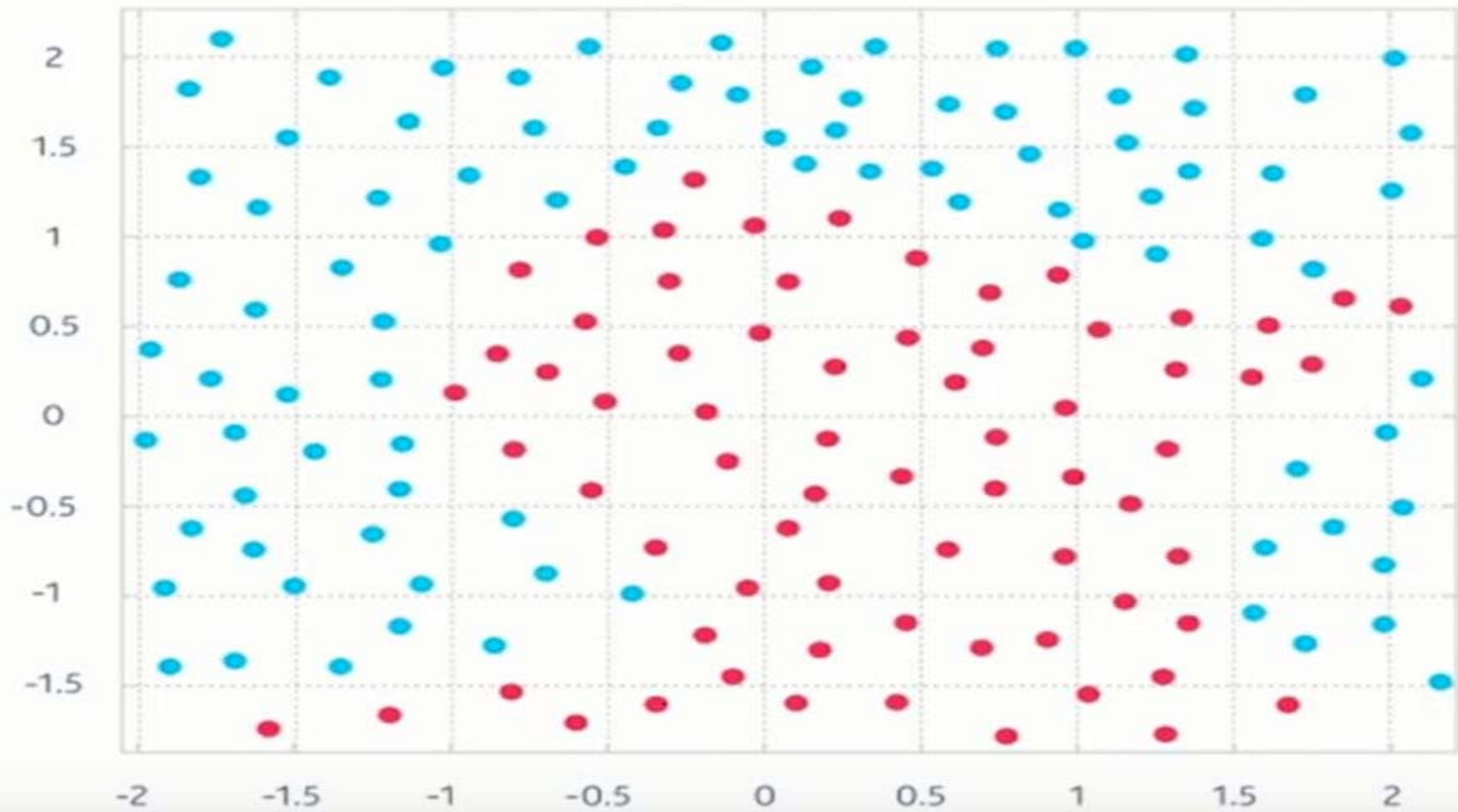


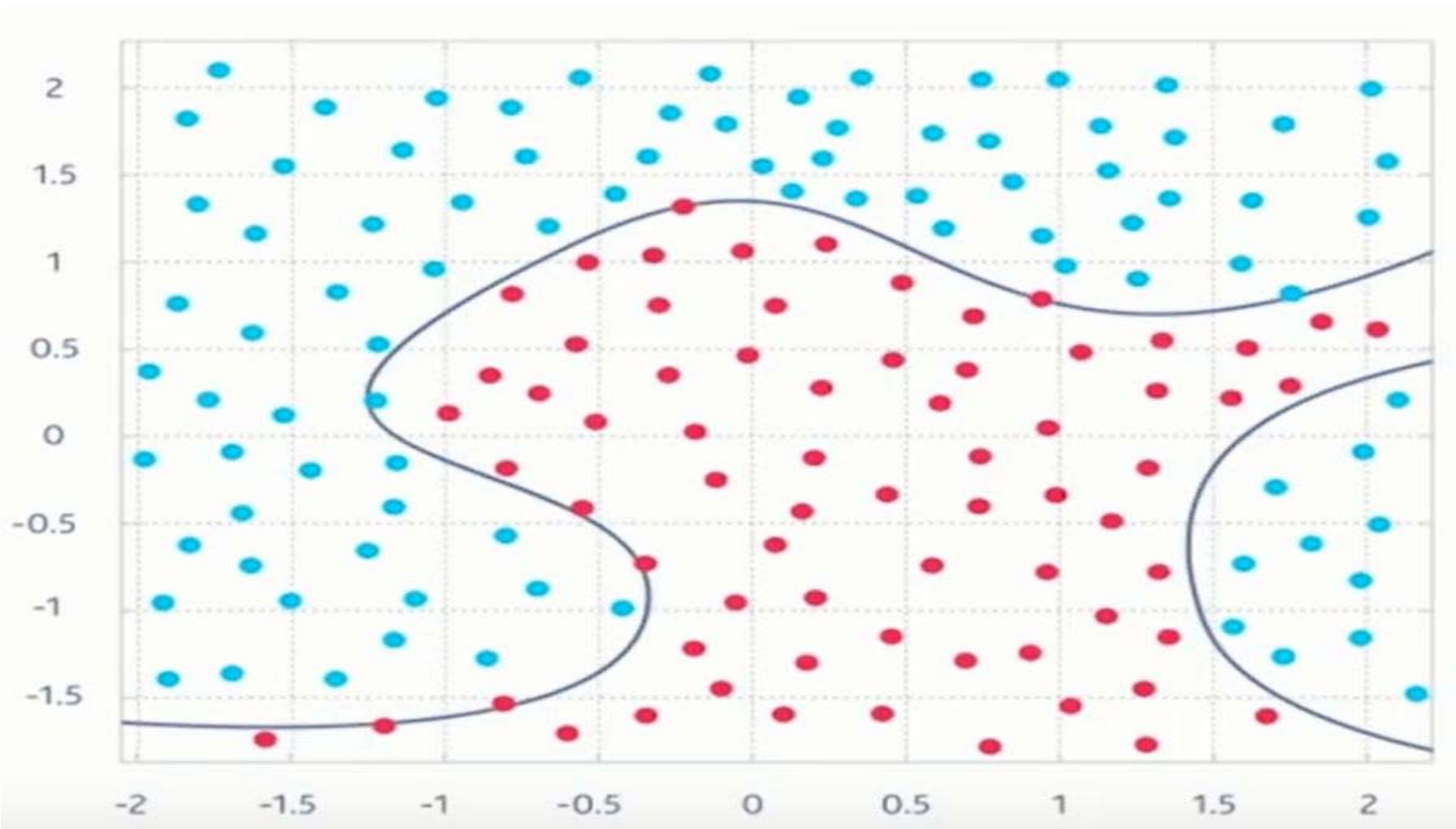
ABOUT MS EXCEL

“MS Excel is a convenient spreadsheet instrument, but it’s *not designed to* build AI-models.”

ABOUT AI

- A dominant technology that will change the finance function
- Importance of machine learning



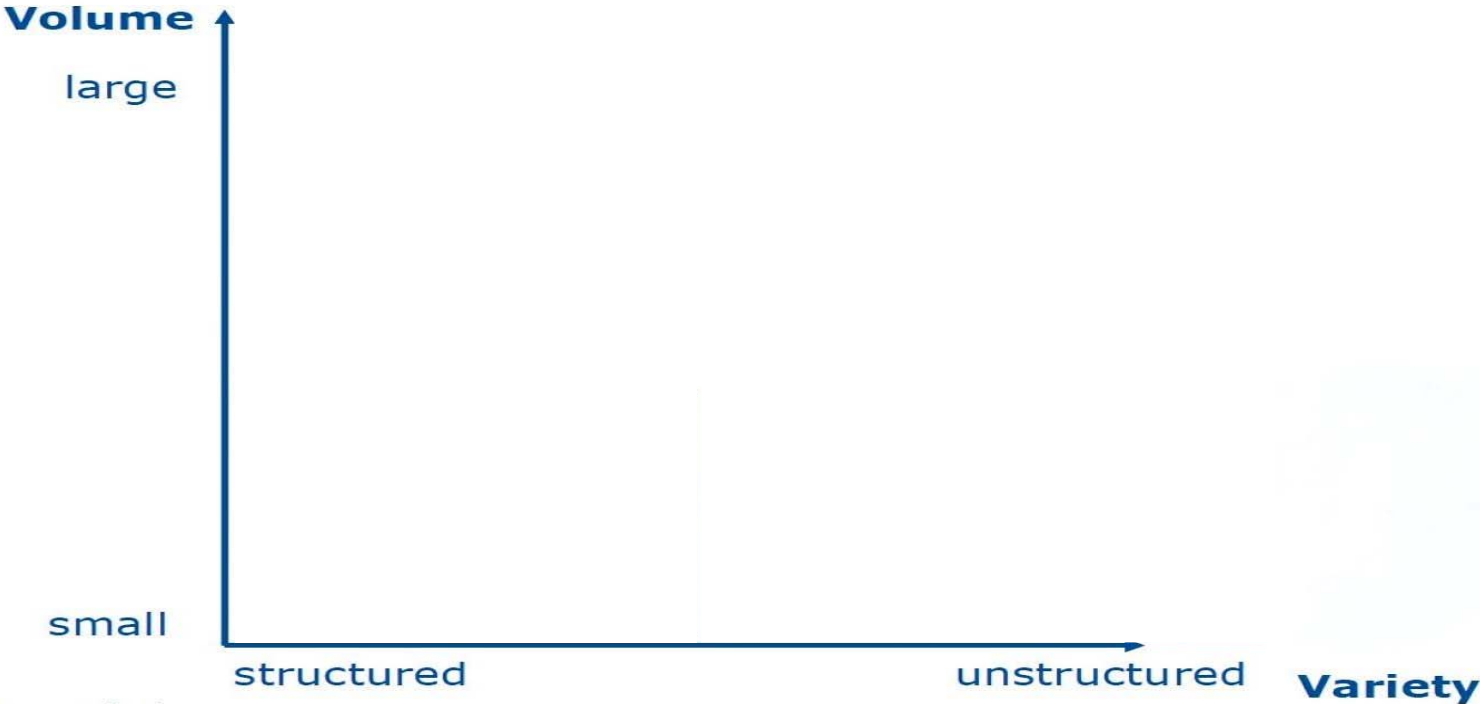


What the software should be able to do:

1. Handle high amounts of variables;
2. Handle high variety, volumes and velocity of data;



ABOUT DATA...



ABOUT ALGORITHMS AND THEIR PERFORMANCE...



What the software should be able to do:

1. Handle high amounts of variables;
2. Handle high variety, volumes and velocity of data;
3. Access to library of algorithms & performance evaluation;
4. Provide computing power;
5. Instant feedback & community;
6. ...



Make a wise choice!

MAKE A WISE CHOICE:

Software overview

* Packages that did not make the list contain too little algorithms, lack community or are not suitable for distributed use
 ** All of the below can run jobs on Spark, unless mentioned otherwise.

Package	License	Language	# Algorithms	Distributed	Comments
scikit-learn	BSD	Python	Very good	No, but experimental via Spark	Large community, well documented. Not suitable for training on large data sets.
Vowpal Wabbit	BSD	C++, Python	Very good	Yes, via Hadoop, Spark	Reads data on the fly. Efficient parallelization. Slows down for limited RAM, instead of crashing.
R packages	GNU	R	Very good	-	Does not scale well
Mahout	Apache	Java, Scala	Bad	Yes	Samsara: MapReduce being phased out (now Spark & H2O)
Spark MLlib	Apache	Java, Scala, Python	Good	Yes	Old. Lots of RAM: in memory. Many features. Deprecated in future. Spark streaming slow for atomic scoring.
Spark ML	Apache	Java, Scala, Python	Medium	Yes	New (replacement of MLlib, using Data Frames rather than RDD), easy ML pipelines, less features, growing.
Tensorflow	Apache	Python, C++	Medium	Yes	Lots of RAM. Focused on Deep Learning (neural networks)
H2O	Apache	GUI, All	Good	Yes	GUI. Stable over large range of problems!
DataRobot	Proprietary	GUI, Python, R	Very good for supervised learning	Yes	Brute force: computationally expensive. Monitoring. Works with HDFS. Too closed for Data Scientists. Limited community. Elaborate model. Useful API for monitoring. Useless for Data Scientists: only for the very last step in a pipeline



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Thank you!