

# Data centred sciences: principles and common aspects

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<http://vargas-solar.com/data-centric-smart-everything/>

<https://classroom.google.com/c/MTQ4MzcwMjY1MDEz?cjc=5bz2tk6>

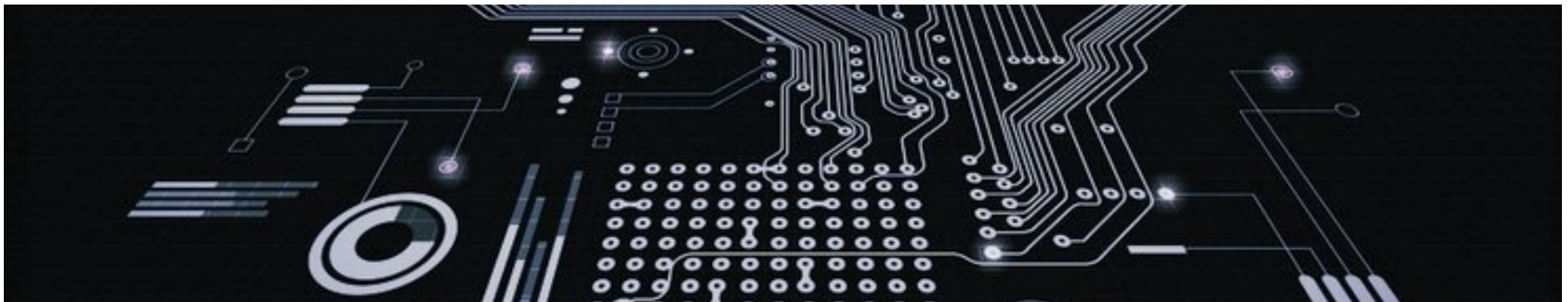
Slack channel: [https://join.slack.com/t/colenationale-5jr8199/shared\\_invite/zt-hhf9euv7-bmp7Kn9LL68RyzdhJnbKxA](https://join.slack.com/t/colenationale-5jr8199/shared_invite/zt-hhf9euv7-bmp7Kn9LL68RyzdhJnbKxA)





***“Data is everything and everything is data”, Pythian***

Turning reality phenomena into data thanks to the **Big Data** trend



# DATIFICATION

Rendering into data, aspects of the world that **have never been quantified**



Any individual can analyse huge amounts of data in short periods of time

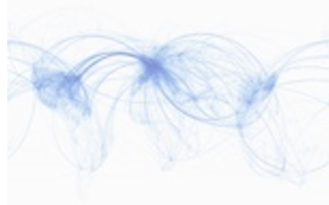
- **Analytical knowledge:** most of the crucial algorithms are accessible
- Use rich data to make **evidence-based decisions** open to virtually **any person or company**

# DATA CENTRIC SCIENCES

Social Data Science



Network Science



Digital humanities



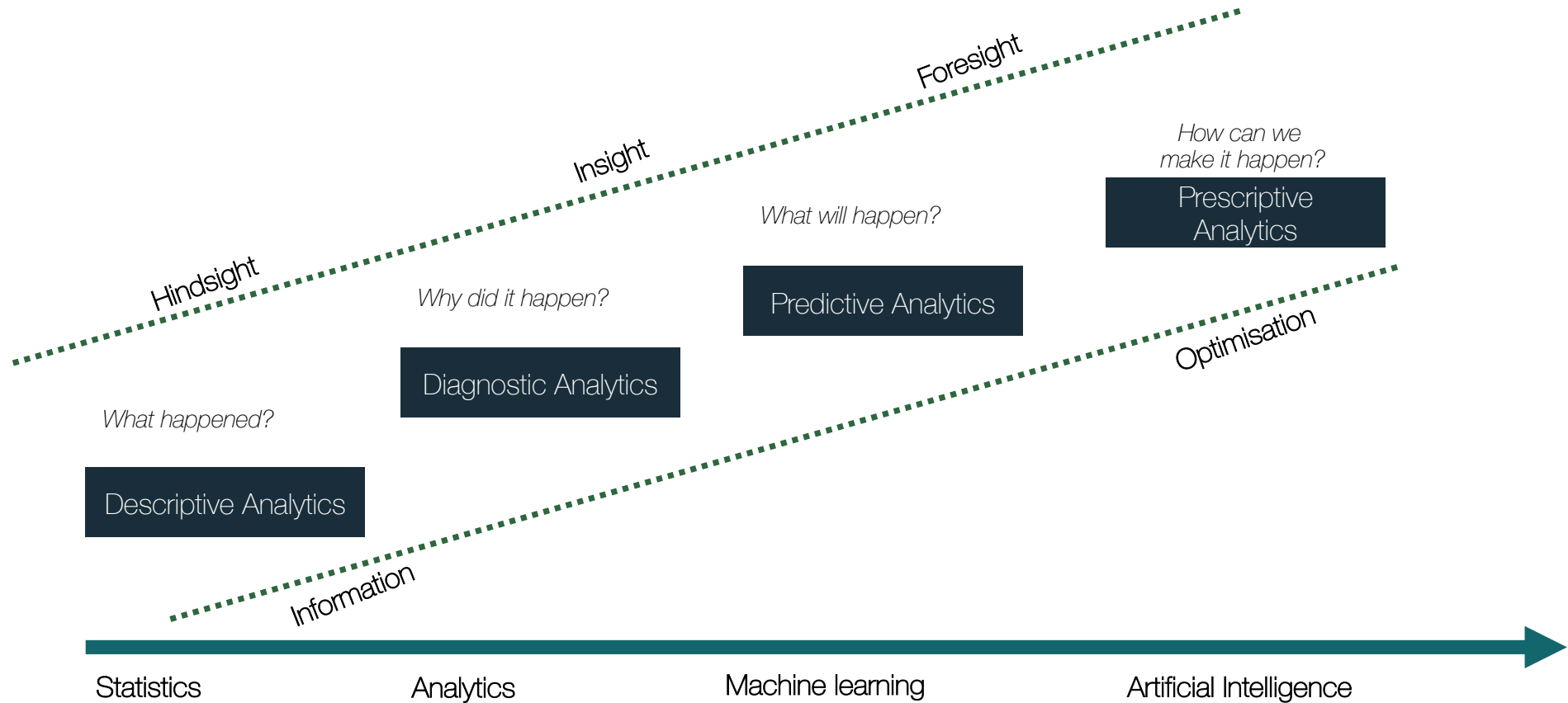
Computational Science



Develop methodologies weaving data management, greedy algorithms, and programming models that must be tuned to be deployed in different target computer architectures

Data collections as backbone for conducting experiments, drive hypothesis and lead to “valid” conclusions, models, simulations, understanding

# EXPERIMENTS OBJECTIVE



# APPLICATIONS

- **Business networks, the lists of books we are reading, the films we enjoy, the food we eat, our physical activity, our purchases, our driving behaviour, and so on**
- **Even our thoughts are datified when we publish them on our favourite social network**
- **In a not so distant future, your gaze could be datified by wearable vision registering devices**
- **At the business level, companies are datifying semi-structured data that were previously discarded: web activity logs, computer network activity, machinery signals, etc.**
- **Reports, e-mails, or voice recordings, are now being stored not only for archive purposes but also to be analysed**

## Social Data Science



## Network Science



## Digital humanities



## Computational Science



Computation

(Algorithm: mathematical model)

Experiment setting

(Architecture: computing environment)

Volume

Velocity

# DATA

Variety

Value

Veracity

1000 Yottabytes	1 Brontobyte
1000 Brontobytes	1 Geopbyte



Social Data Science



Network Science



Digital humanities



Computational Science



# Experimental Sciences

Velocity

Volume

**DATA**

Variety

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Veracity

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