Future opportunities for a young profession

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A young profession…

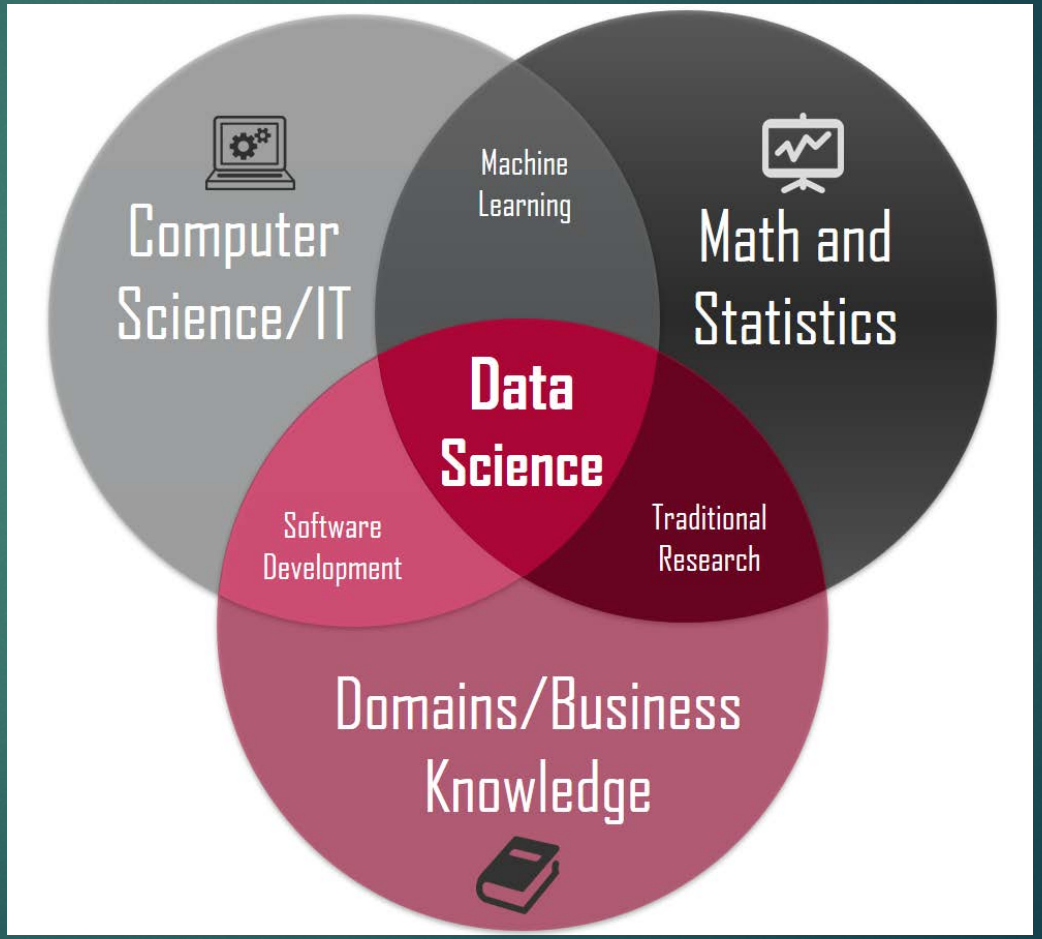
- Operations Research
- Management Science
- Operationeel onderzoek
- Operationele analyse
- Bedrijfseconometrie
- Mathematische besliskunde
- Business Analytics

...still settling down.

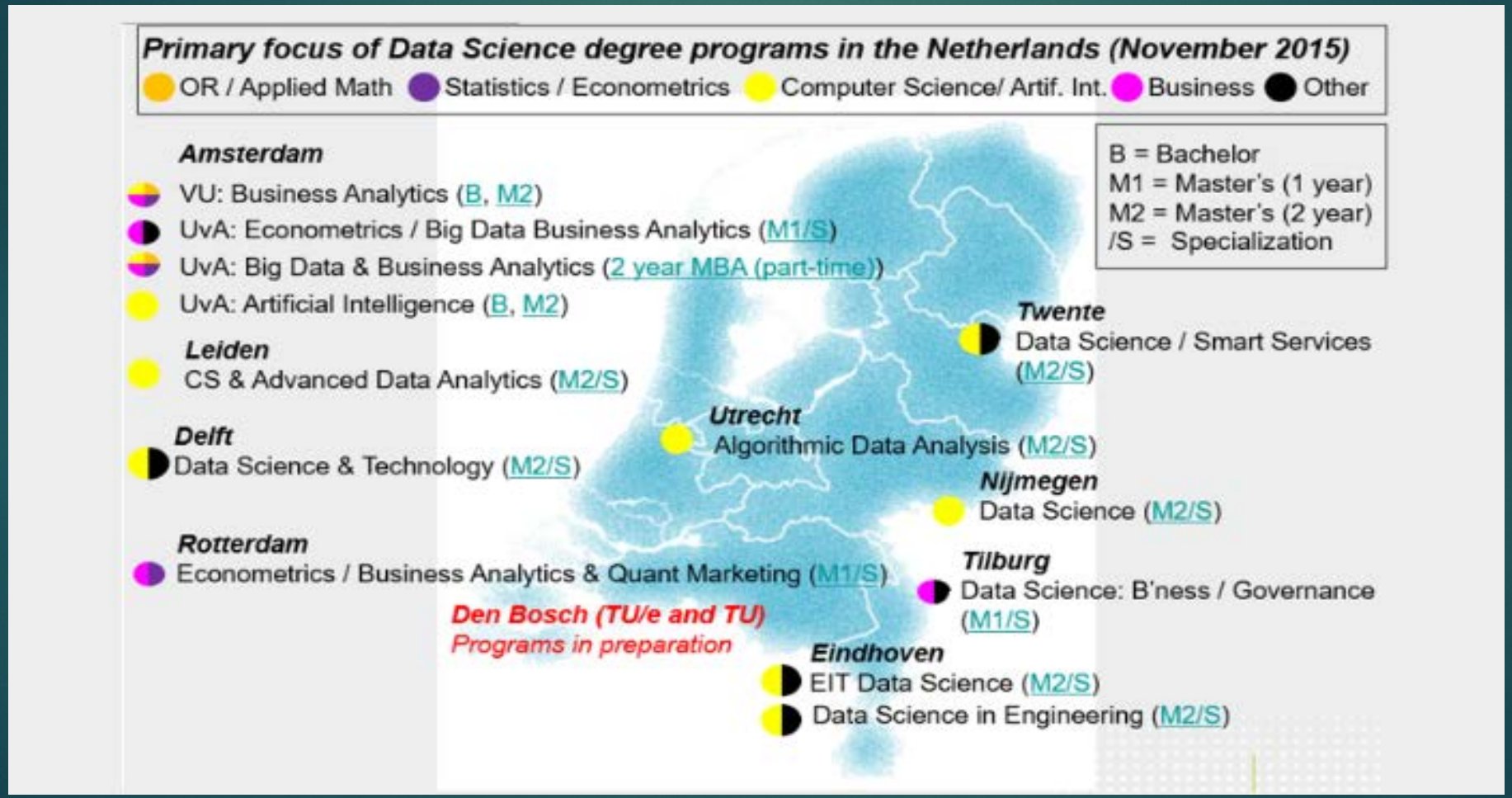
- Mathematics
- Statistics
- Economics
- Econometrics
- Business Studies
- Technical Sciences

An even younger profession...

- Data Science

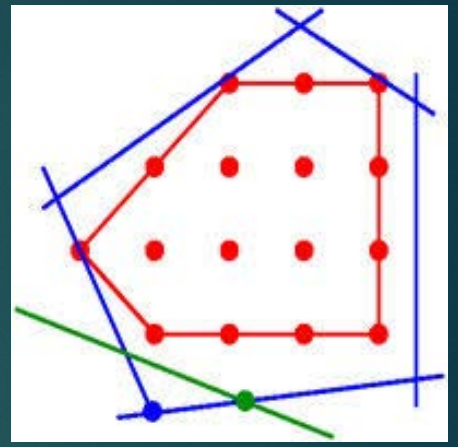


...settling down nicely.



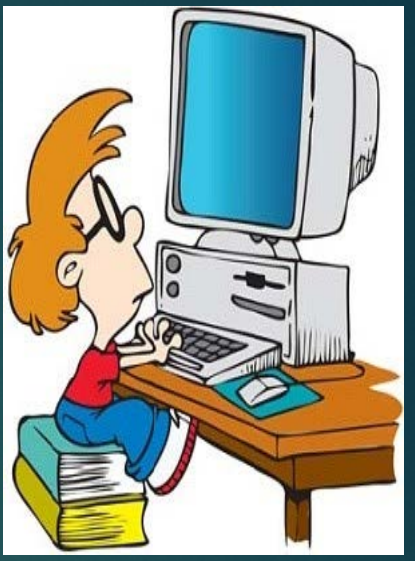
What's in a name?

- OR focuses on complex planning problems…
- …analyzes them through mathematical model building…
- …and solves them through the computer



The role of the computer

1. Faithful supporter: OR and numerical mathematics
2. Theoretical construct: OR and computer science
3. Surprising challenger: OR and very big data
4. Potential competitor: OR and artificial intelligence

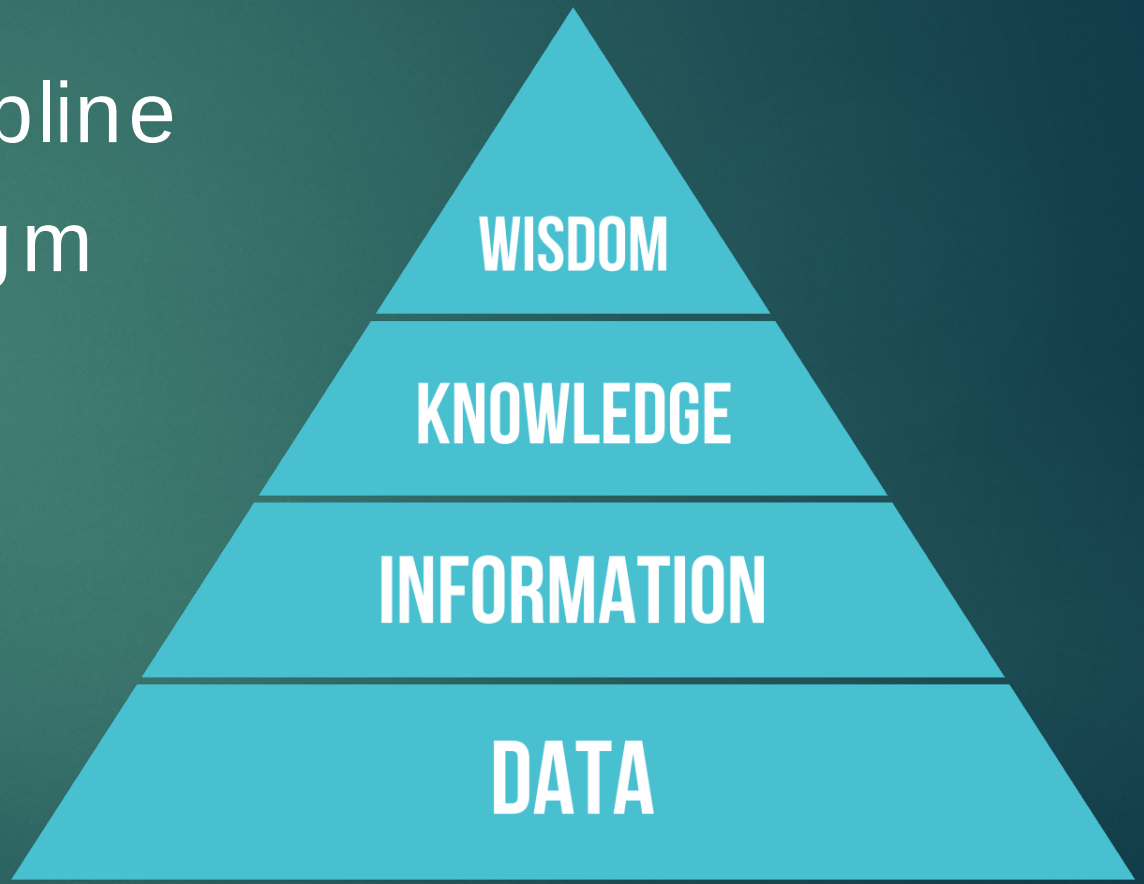


“The future of OR is past.” (Russell Ackoff, 1979)

- Poor links between theory and practice
- Excessive emphasis on optimization
- Lack of cooperation with neighbouring disciplines

What about the future of OR?

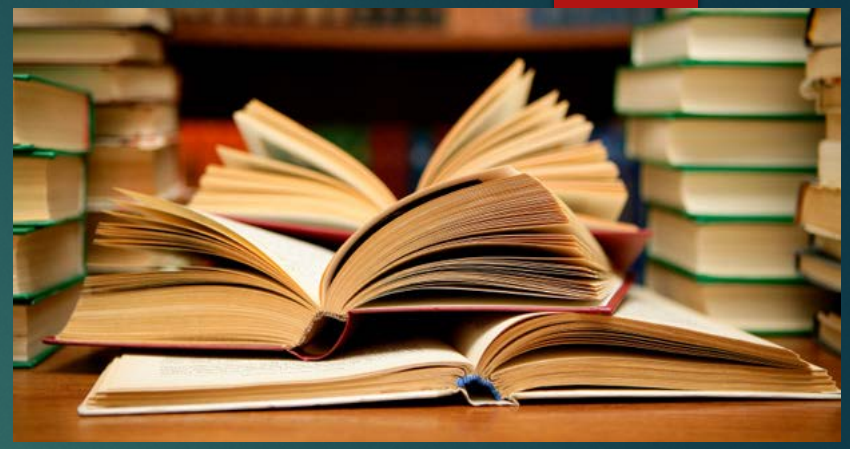
- As an academic discipline
- As a practical paradigm



OR as an educational program

- Increasing demand
- Program in Amsterdam under threat
- Limited post-academic offering

OR as a research area



- New answers to old questions
- New challenges on the interface with computer science
- New questions: basing OR models on Big Data
- New questions: understanding the success of AI

OR as a problem solving paradigm

- Turning data into useful information
- Turning knowledge into progress
- Turning data science into a management tool

“The future of OR is bright.”

- In a combination of deep research and broad education
- As part of a larger whole
- As a training ground for the ideal data scientists


OPERATIONS
RESEARCH
JOURNAL
OPTIMIZATION
METHODS
MODELS
PAINT
INITIATIVE
MANAGEMENT
PROCESS
ROUTES
ASSIGNMENT
MODELING
ARMOUR
SIGHTINGS
SUNK
RETURNED
ADOPTED
MANAGING
DEFENSIBLE
WARSHIPS
ARTILLERY
COMPLEX
PETROCHEMICALS
AIRLINES
INDUSTRIAL
SUBMARINES
CONVOY
OPERATIONAL
SIMULATION
LOSS
SMALL
MINES
CLOSE
TECHNIQUES
APPLIED
QUEUEING
TARGET
NETWORK
ANALYSE
REVEALED
LOGISTICS
IDENTIFYING
FREIGHT
BOMBER
DYNAMICAL
FIELD
OPTIMAL
TELECOMMUNICATIONS
OVERLAP
DEFENCE
PLANNING
CHAIN
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