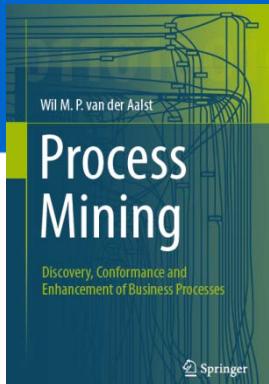


Process Mining: Data Science in Action

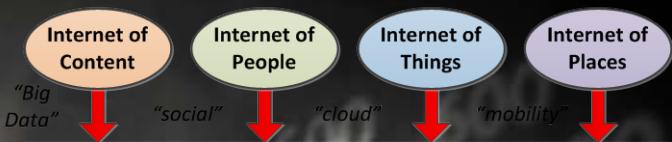
Conclusion: Data Science in Action

prof.dr.ir. Wil van der Aalst
www.processmining.org



Technische Universiteit
Eindhoven
University of Technology

Where innovation starts



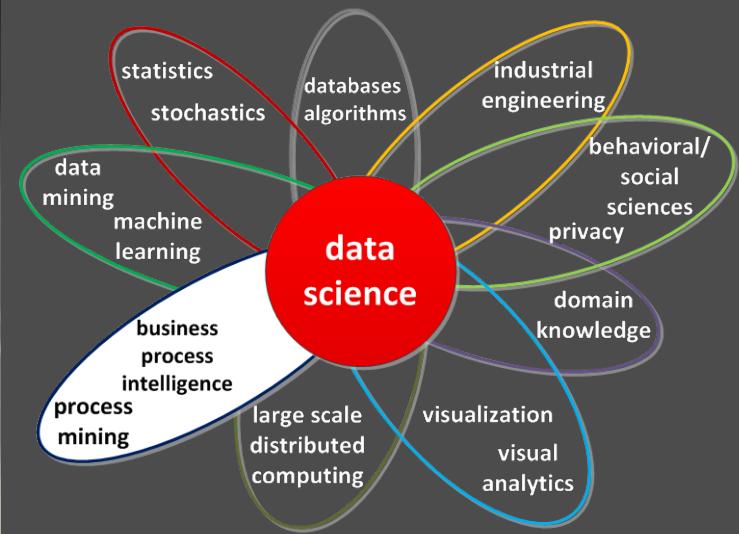
Internet of Events



our world is driven by data ...



need for data scientists



Process mining bridges the gap



BPM

process
modeling

model-based
analysis

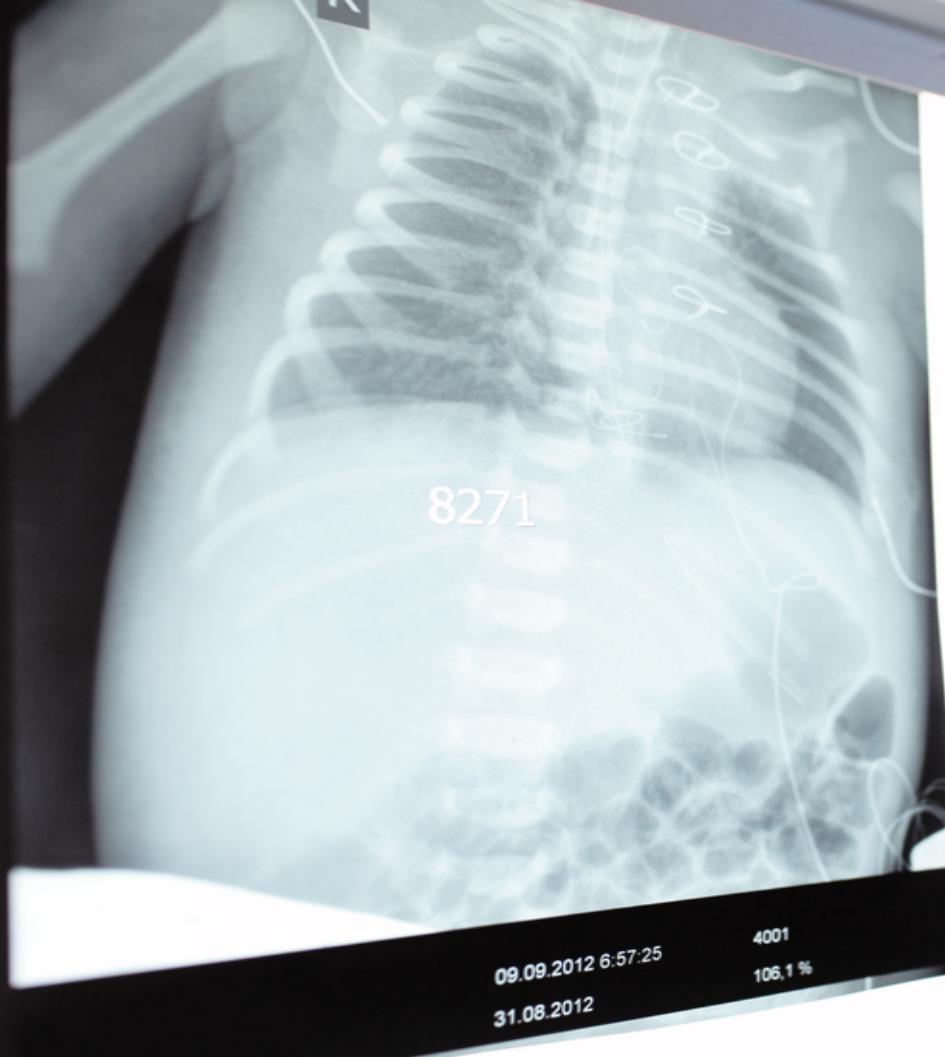
data
mining

business
intelligence

statistics

Business Intelligence (BI)

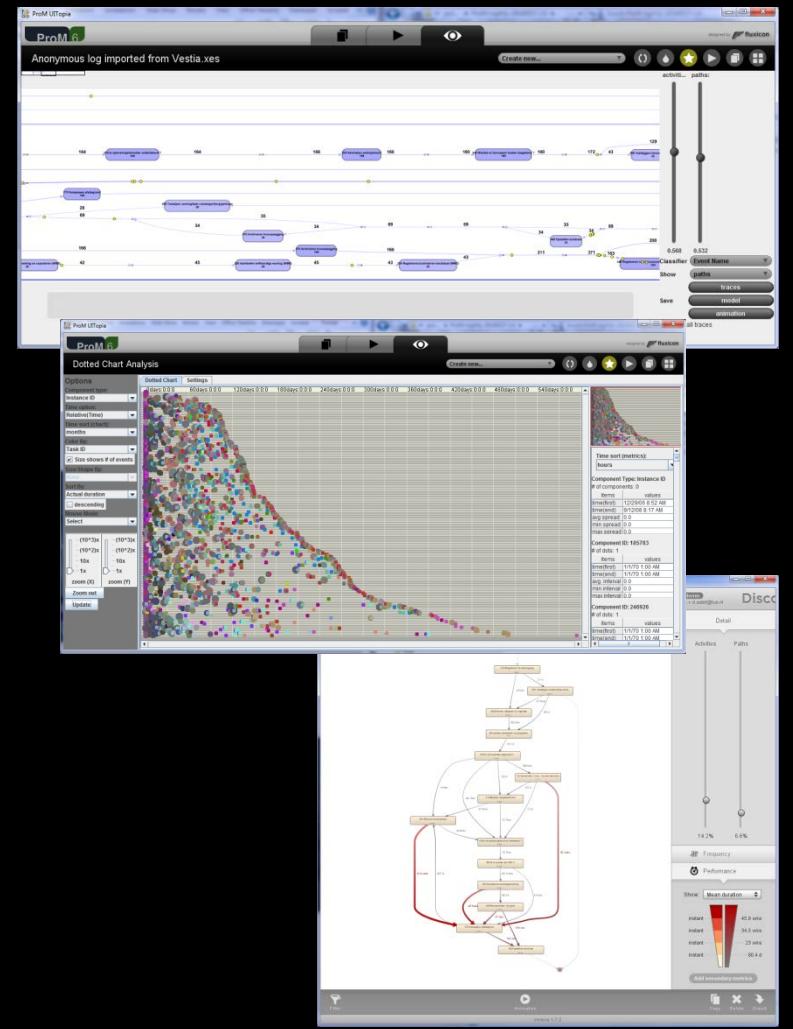




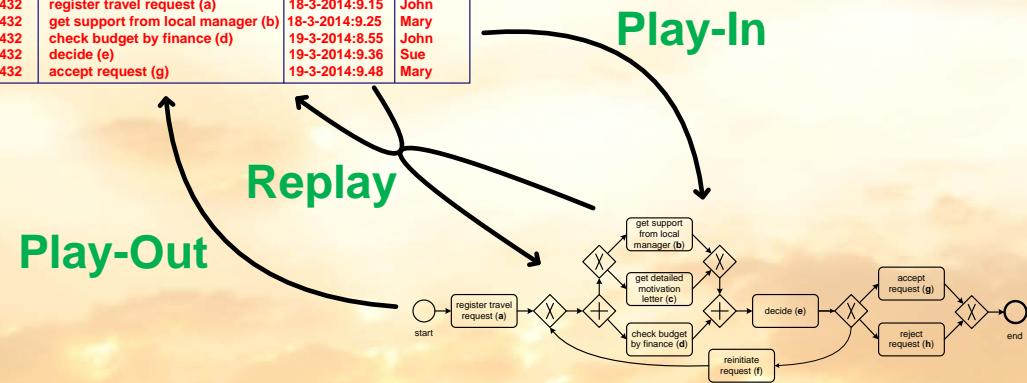
≠ Process Mining



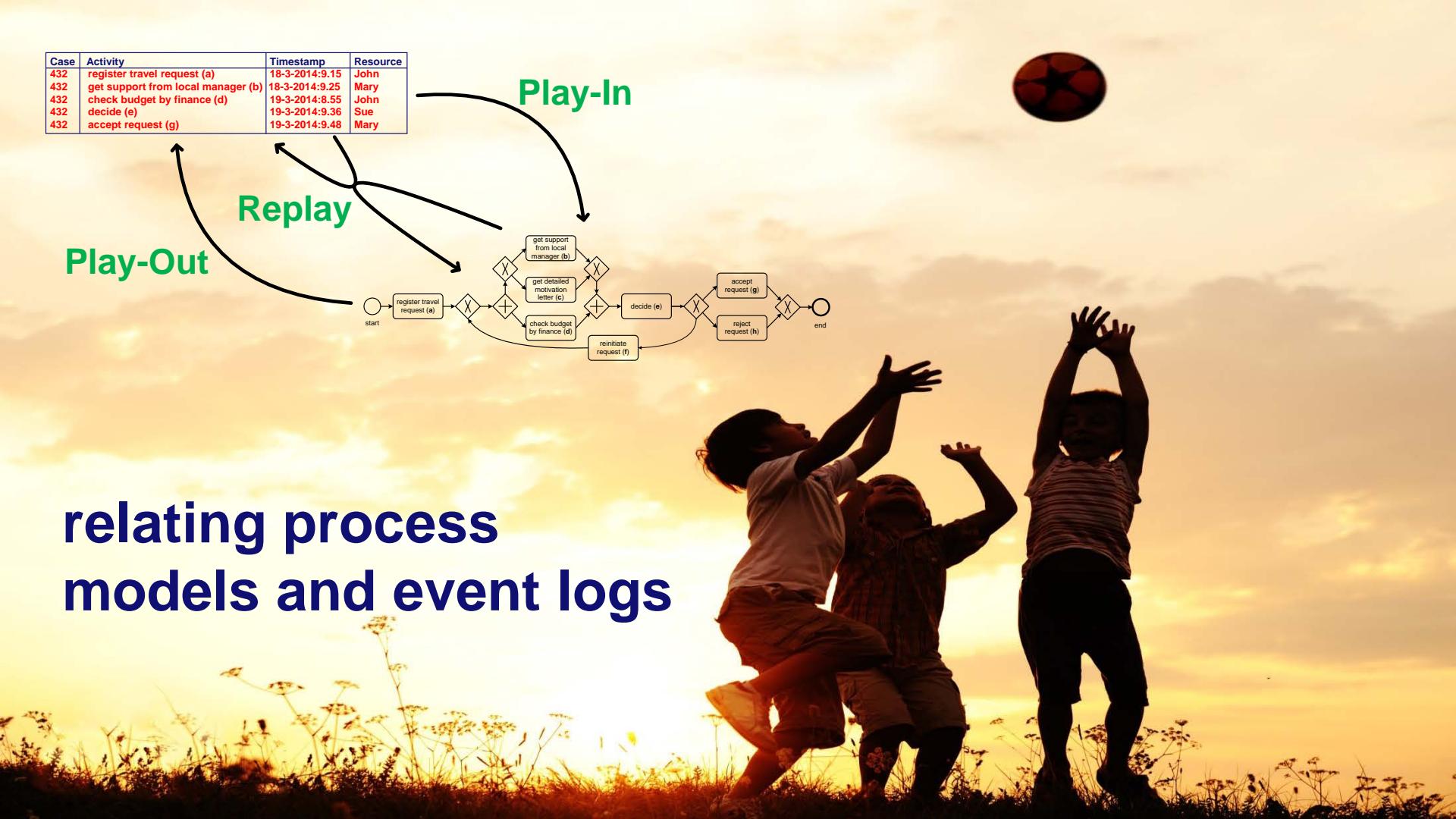
Look inside the process!



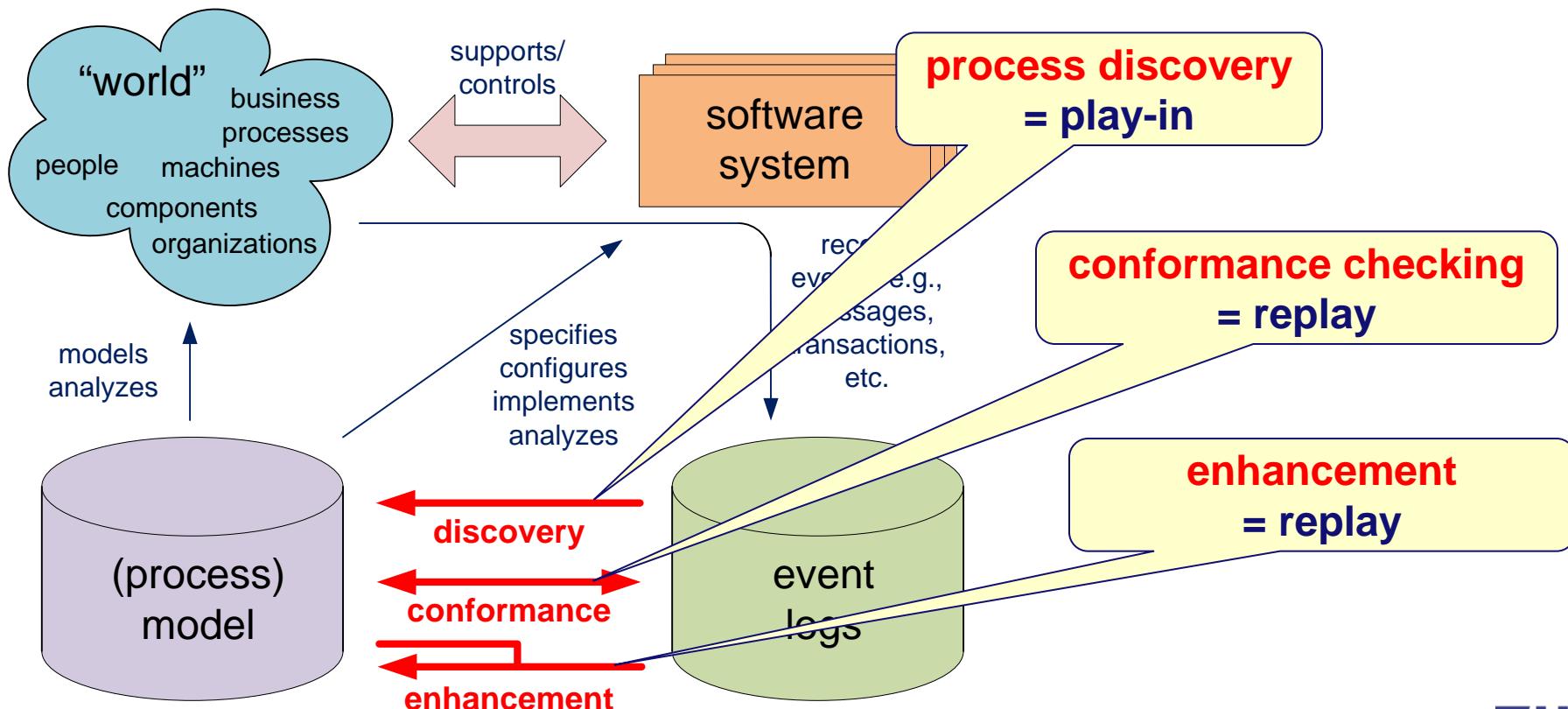
Case	Activity	Timestamp	Resource
432	register travel request (a)	18-3-2014:9.15	John
432	get support from local manager (b)	18-3-2014:9.25	Mary
432	check budget by finance (d)	19-3-2014:8.55	John
432	decide (e)	19-3-2014:9.36	Sue
432	accept request (g)	19-3-2014:9.48	Mary



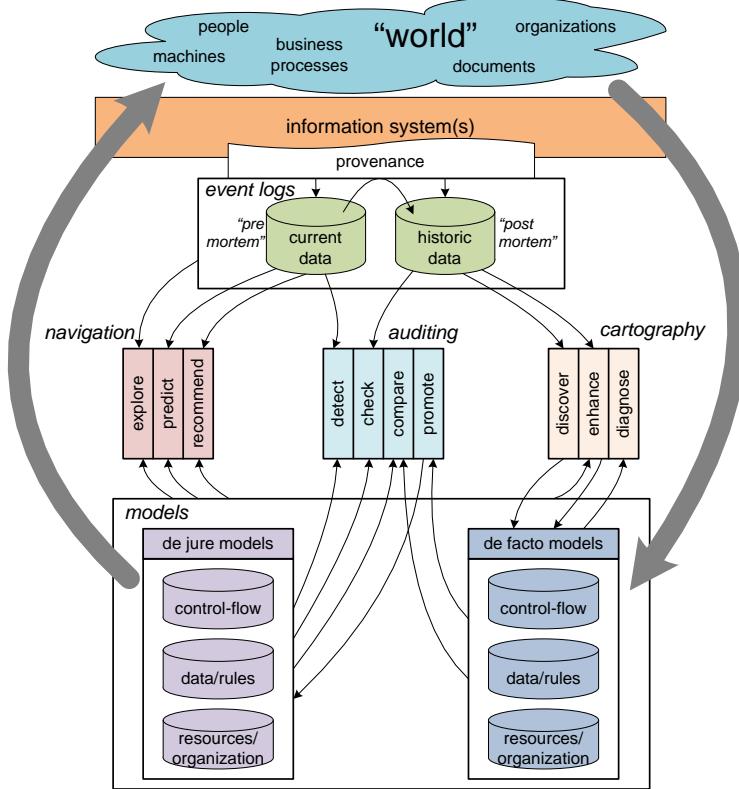
relating process models and event logs



The three main types of process mining: discovery, conformance, and enhancement



Refined process mining framework



- **Ten process mining activities.**
- **Also online process mining (operational support).**
- **Multiple perspectives (time, resources, data ...).**
- **De jure (normative) and de facto (descriptive) models.**

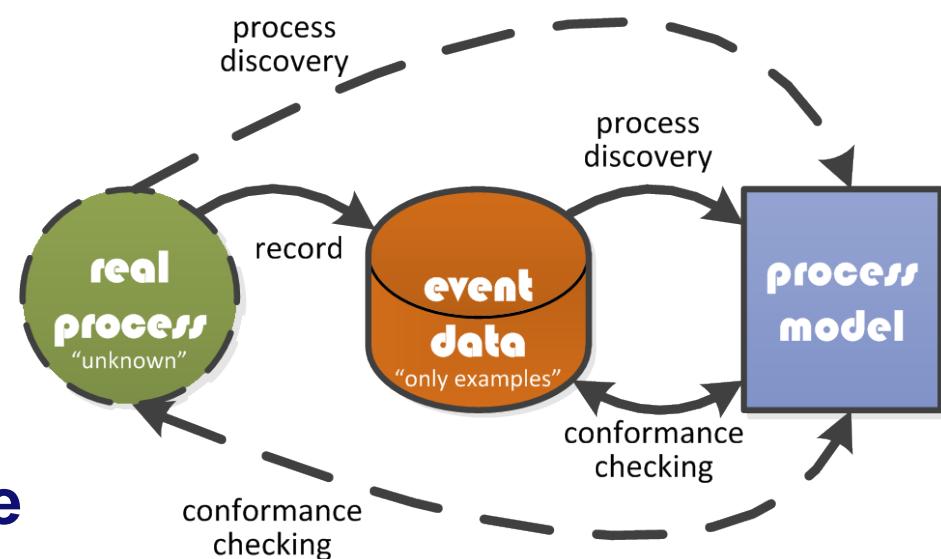
Much more than process discovery ...

- Conformance checking
- Performance analysis
- Decision point mining
- Organizational mining
- Comparative process mining
- Operational support
- ...

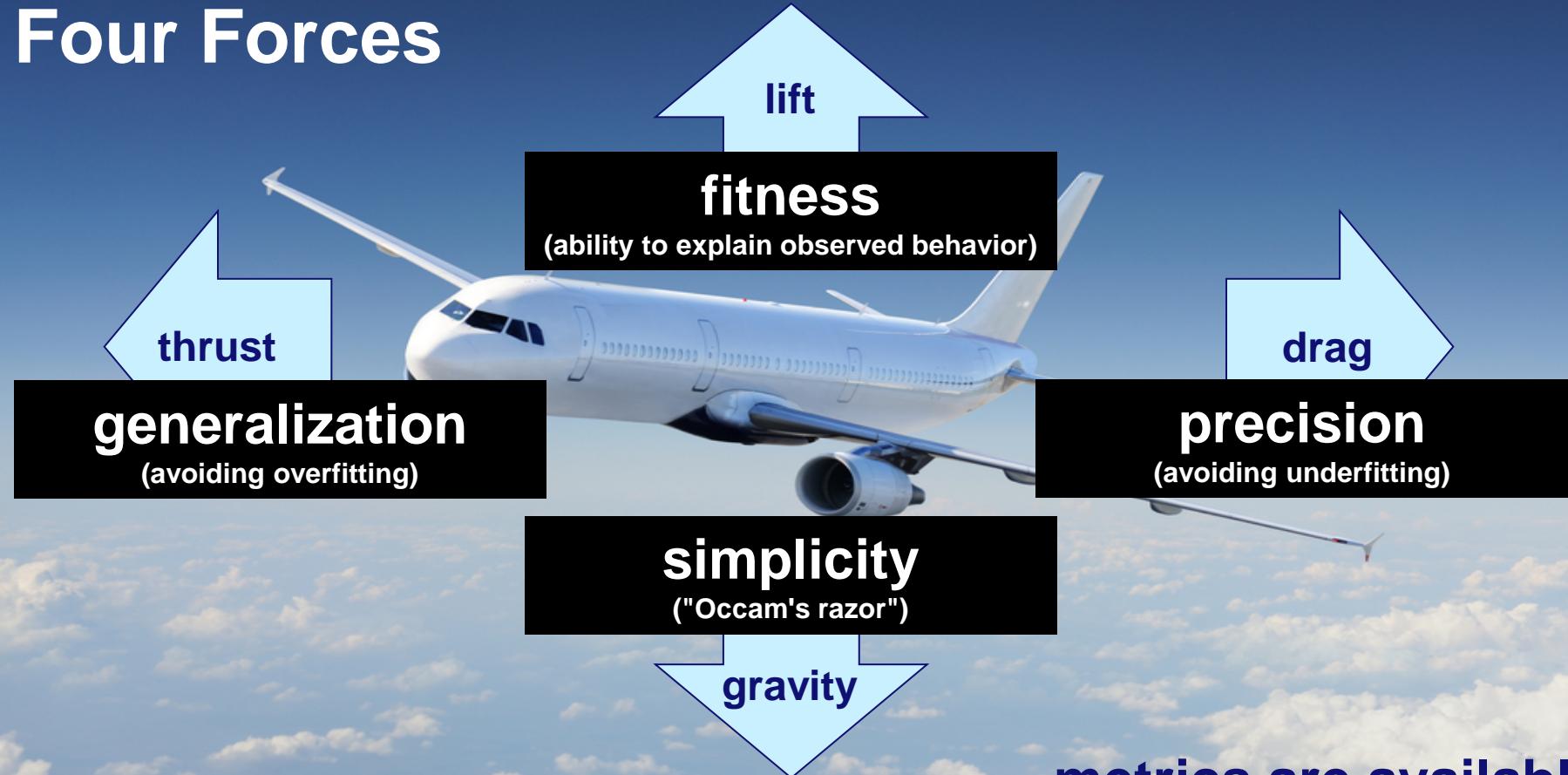


... but process discovery is fascinating!

- **Extremely useful!**
- **Challenging, but always possible.**
- **Requires expertise**
 - Which algorithm?
 - What is the effect of the representational bias?
 - ...

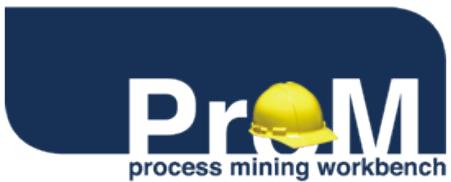


Four Forces



metrics are available
for all dimensions

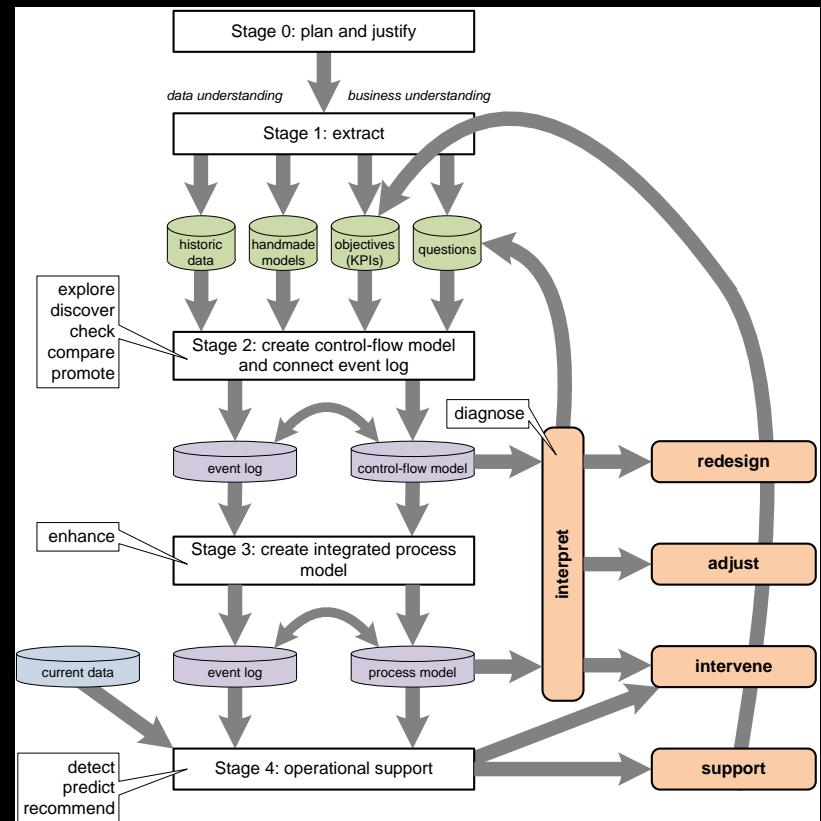
Tooling





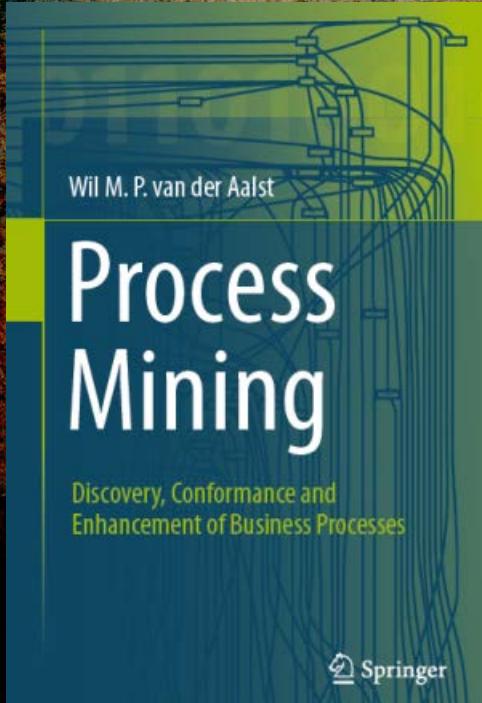
process mining projects

L* lifecycle model



A chef in a white uniform and tall chef's hat is holding two plates of food. One plate contains a large portion of spaghetti with red sauce and garnished with herbs and small red bell peppers. The other plate contains a single slice of lasagna, topped with melted cheese and garnished with fresh basil leaves and cherry tomatoes. The chef is looking down at the plates with a focused expression.

spectrum of
processes



**Process Mining: Discovery,
Conformance and Enhancement of
Business Processes,
Wil van der Aalst, Springer Verlag,
2011 (ISBN 978-3-642-19344-6).**

Part I: Preliminaries

Chapter 1

Introduction

Chapter 2

Process Modeling and Analysis

Chapter 3

Data Mining

Part III: Beyond Process Discovery

Chapter 7

Conformance Checking

Chapter 8

Mining Additional Perspectives

Chapter 9

Operational Support

Part II: From Event Logs to Process Models

Chapter 4

Getting the Data

Chapter 5

Process Discovery: An Introduction

Chapter 6

Advanced Process Discovery Techniques

Part IV: Putting Process Mining to Work

Chapter 10

Tool Support

Chapter 11

Analyzing “Lasagna Processes”

Chapter 12

Analyzing “Spaghetti Processes”

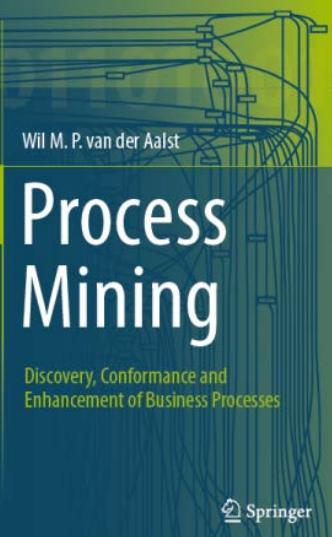
Part V: Reflection

Chapter 13

Cartography and Navigation

Chapter 14

Epilogue



This course closely followed the book, but also included some excursions to neighboring fields and recent developments.



www.processmining.org

**Opportunities
everywhere!**



Process Mining: Data Science in Action

**Experience the “magic” of process mining:
discovering and improving processes
based on facts rather than fiction!**

