



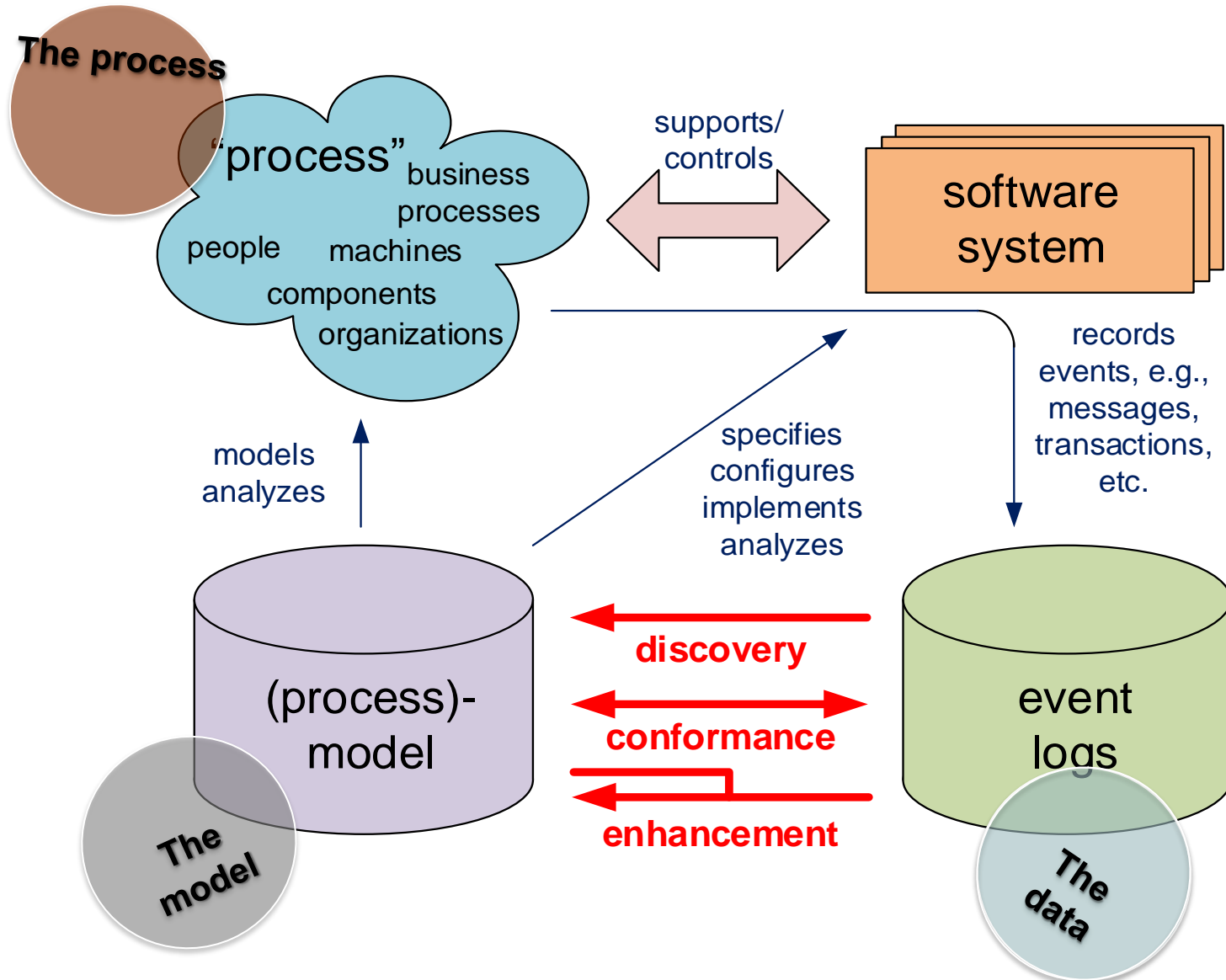
Process Oriented Data Science Lab (Tuesdays)



UNIVERSITAT POLITÈCNICA
DE CATALUNYA
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Campus d'Excel·lència Internacional

Data Science in Action...in Action!



Process (mining) vocabulary



Process model
Event type

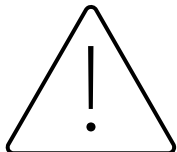


Process instance
Trace
Event

Process mining LAB Tools

Lightweight	Academic Open-source	Open-source	Enterprise Level
<ul style="list-style-type: none"> Disco from Fluxicon <p><i>Fluxicon BV T.U.Eindhoven</i></p>	<ul style="list-style-type: none"> ProM Lite <p><i>T.U.Eindhoven</i></p>	<ul style="list-style-type: none"> Apromore <p><i>University of Melbourne and University of Tartu</i></p>	<ul style="list-style-type: none"> SAP Signavio (*) Celonis

(*) Academic license only for modelling



Use your @upc.edu account to get the academic licenses



■ Structure

- First half of the semester: Hands-on, Modeling, Tooling (Bring your computer!)
- Second half of the semester: course project

■ Course project:

- Groups of 3-5 students
- Submission of a report & presentation day
- Types: comparison projects, repeatability, use-case, implementation
- All projects require experimental work, ie., running different algorithms on certain data and measure results



- 60% final exam: similar to the exercises in class
- 40% lab, of which:
 - 20 % 2 Graded exercise in-lab (10% each).
 - 80% course Project.



Weekly Schedule

Week	Date	Lab (Tuesdays)	Date	Reading	Theory & Exercises (Thursdays)
1	10/9	Disco Hands-on (I) & Process Maps	12/9	V1	•PM Introduction & contextualization •Process models & event data: intro
2	17/9	Disco Hands-on (II)	19/9	R1	Process models & event data: basics
3	24/9		26/9	R2	Process models & event data: properties, algorithms & challenges
4	1/10	Disco Hands-on (III)	3/10	R3	•Quality dimensions for relating observed & modeled processes •Process Discovery: Alpha family
5	8/10	Process Modeling	10/10		Process Discovery: Advanced techniques
6	15/10	Graded Exercise 1 ProM/Apromore (event data & discovery)	17/10	R4	Conformance checking: rule checking & token replay
7	22/10	Apromore (compliance & performance)	24/10		Methodology for PODS
8	29/10	Apromore (performance & variant)	31/10	R5	Midterm exams
10	5/11	Midterm exams	7/11		Midterm exams
11	12/11	Apromore (simulation)	14/11		Process enhancement techniques: basics techniques •Predictive process monitoring •Social network analysis
12	19/11	Graded Exercise 2 Project work	21/11		Assorted advanced techniques I
13	26/11	Project work	28/11		Assorted advanced techniques II
14	3/12	Project work	5/12		<i>TBD: Celonis, DCR</i>
15	10/12	Project work	12/12		<i>Projects Presentations I,</i>
16	17/12	Project work & Project Submission	19/12		Project Presentations II



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Always bring your own laptop to class

To get access to Apromore and SAP Signavio Workspace

- You will receive an email at your "@upc.edu" mails with the invitation links.

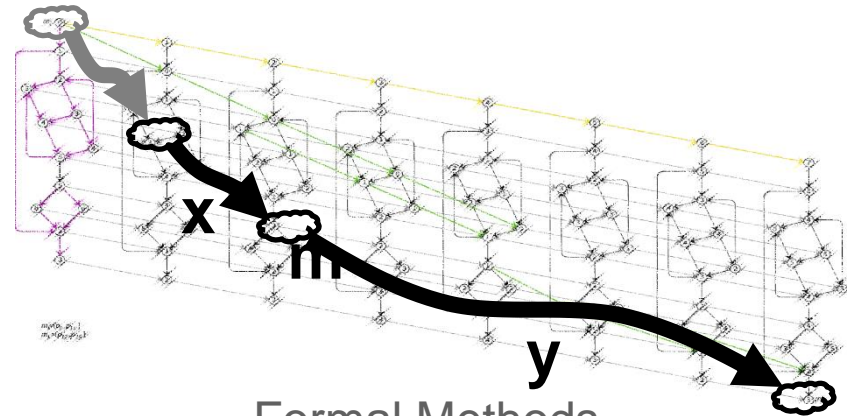
Starting September 17th:

- Group 11: From 15h to 17h
- Group 12: From 17h to 19h

Josep Carmona



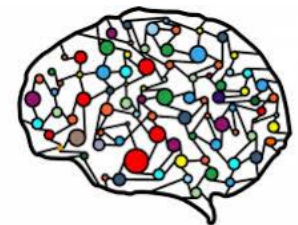
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Formal Methods

Business Process Management
Process Mining

AI (ML, NLP, ...)



- Most of the material of this course is taken from my colleagues:
 - RWTH Aachen (Prof. Wil van der Aalst)
 - **Humboldt University zu Berlin (Prof. Matthias Weidlich)**
 - Technische Universiteit Eindhoven (Prof. Boudewijn van Dongen)
 - University of Tartu (Prof. Marlon Dumas)
 - University of Melbourne (Prof. Marcello La Rosa)
 - Technical University of Denmark (Prof. Andrea Burattin)
- Hence, this material is only provided for your learning, please do not share nor publish



Questions ?

