Welcome to

Knowledge Engineering

Prof. Dr. Knut Hinkelmann
Prof. Dr. Holger Wache

Organization

Lecturers

Prof. Dr. Knut Hinkelmann

Prof. Dr. Holger Wache

Module Objective: Supporting Knowledge-Intensive Processes

- After completion of this module, the participants

  - will be able to assess which kind of knowledge representation and reasoning is adequate

  - are able to develop appropriate knowledge-based systems

  - can value the advantages of knowledge-based systems with respect to their costs

  - can create conceptual models of a domain

  - know approaches to turn data into knowledge that helps to make the right decisions.

Module Content

- Introduction: Knowledge in processes

- Decision Tables

- Rules
  - Textual represented rule (i.e. Horn clauses)
  - Forward and backward chaining
  - Data-driven and Goal-oriented
  - Negation-as-failure

- Fuzzy Logic

- Knowledge Graphs
  - RDFS
  - Ontology Engineering

- Graphical Models
  - Modelling and Meta-modeling
  - Ontology-based meta-modeling

- Case-Based Reasoning
  - Similarity

- Machine Learning
  - Learning Decision Trees

Module Organization

- Lectures: presentations, discussions, exercises

- Assignments/homework
  - Readings to prepare lectures
  - Exercises during weeks

- Credits: 6 ECTS

- Graduation
  - Tbd (a project)

Module Schedule

Timetable 2nd semester - A.Y. 2021/22				
Master of Science:		LM18 - Computer Science		
Year:	**1st**			
Course:	Knowledge Engineering - KE			
	Timeslots	Lectu	Room	Lecturer
March				
Monday 7th	2pm - 6pm	4	AB1	Prof. Wache/Hinkelmann
Tuesday 8th	9am - 1pm	4	AB1	Prof. Knut Hinkelmann
Monday 21st	2pm - 6pm	4	AB1	Prof. Holger Wache
Tuesday 22nd	9am - 1pm	4	AB1	Prof. Holger Wache
April				
Monday 4th	2pm - 6pm	4	AB1	Prof. Holger Wache
Tuesday 5th	9am - 1pm	4	AB1	Prof. Holger Wache
Monday 25th	2pm - 6pm	4	AB1	Prof. Holger Wache
Tuesday 26th	9am - 1pm	4	AB1	Prof. Knut Hinkelmann
May				
Monday 23th	2pm - 6pm	4	AB1	Prof. Knut Hinkelmann
Tuesday 24th	9am - 1pm	4	AB1	Prof. Knut Hinkelmann
Monday 30th	2pm - 6pm	4	AB1	Prof. Knut Hinkelmann
Tuesday 31st	9am - 1pm	4	AB1	Prof. Knut Hinkelmann

Module Information

Website

http://didattica.cs.unicam.it/doku.php?id=didattica:ay2122:ke:main

Literatur

- ◆ No Books
- ◆ Reading material will be provided for download