Recommenders

Summer

Learning Methods and Evaluation Methods for Recommenders

(in German: Recommenders - Master level)

Module-ID: FIN-INF-120525

Abbreviation	Credit Points	Semester	Term	Duration	Language	Level
RECSYS-M	9	Summer	starting at 1.	1 Semester	english	Master

Link:	LSF
Limited accessability:	
Responsibility:	Myra Spiliopoulou
Lecturer:	Myra Spiliopoulou
Classes:	• Lecture *Recommenders* • Exercise class *Recommenders*
Applicability in curriculum:	- M.Sc. INF: Informatik - M.Sc. INGINF: Informatik - M.Sc. WIF: Wirtschaftsinformatik - M.Sc. DKE: Learning Methods and Models for Data Science - M.Sc. DE: Methoden des Digital Engineering - M.Sc. DE: Methoden der Informatik - M.Sc. VC: Computer Science

Intended learning outcomes:
When successfully completing this module, the students have acquired soft skills and technical expertise, as follows: **SOFT SKILLS:** They

- have learned how to critically discuss and valuate a scientific paper

TECHNICAL EXPERTISE: They

- comprehend the business context of recommenders
- comprehend the different types of recommenders, their advantages and disadvantages from the business perspective and from the mining perspective and are familiar with advanced recommendation methods
- have acquired advanced insights on how to critically evaluate a recommender from the mining perspective and the business perspective
- understand why adaption is necessary in recommenders and comprehend the behaviour of temporal methods for recommenders

and have thus acquired skills they need in order to critically appreciate off-the-shelf or state-of-the-art methods and to design workflows that encompass recommender learning, tuning and evaluation

Content:
The course consists of two blocks:

- Block 1 is on Fundamentals of Recommenders and has mutiple parts: (1.1) recommender goals and workflows, (1.2) simple recommendation methods, (1.3) evaluation mechanisms, (1.4) recommender adaption on a stream
- Block 2 covers advanced topics of recommenders: students read and critically discuss papers in class

Workload:

- 28 Std/hours: Vorlesung/Lecture - in presence (lecture class: 2 hours per week, 28 hours)
- 28 Std/hours: Übung/Exercises - in presence (exercise class: 2 hours per week, 28 hours)
- 214 Stunden: Individual working time on
  - Preparation for lectures and exercise classes
  - Reading and understanding the articles provided
  - Discussion of the articles in class

Pre-examination requirements:	Type of examination:	Teaching method / lecture hours per week (SWS):
A minimum number of points must be achieved during the classes	Schriftliche Prüfung (Klausur)	• Vorlesung (2 SWS) - Lecture class (2 hours-per-week) • Übung (2 SWS) - Exercise class (2 hours-per-week)

Prerequisites according to examination regulations:	Recommended prerequisites:

keine	• Data Mining I • Machine Learning • Data Mining II • Introduction to Deep Learning • Advanced English skills • Reading of scientific papers, as acquired eg in a bachelor seminar

Media:	**Literature:**

	• Literature for Block 1: selected chapters from the 'Recommender Systems Handbook' in the editions:
	  ◦ Recommender Systems Handbook by Francesco Ricci, Lior Rokach and Bracha Shapira (editors), SPRINGER (2015), 2nd edition, https://doi.org/10.1007/978-1-4899-7637-6
	  ◦ Recommender Systems Handbook by Francesco Ricci, Lior Rokach and Bracha Shapira (editors), SPRINGER (2022), 3rd edition, https://doi.org/10.1007/978-1-0716-2197-4
	  ◦ Further cited literature, including scientific articles and use cases are cited at the beginning of each unit.
	• Literature for Block 2: the papers for the discussions in class will be announced during the course

Comments:

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