

CS-720

Advances in Data Intelligence

Agrawal Rakesh

Cursus	Sem.	Type
Computer and Communication Sciences		Obl.

Language of teaching	English
Credits	2
Session	
Exam	Multiple
Workload	60h
Hours	32
Courses	16
Exercises	16
Number of positions	

Frequency

Only this year

Remark

Only this year

Summary

The course is aimed helping students develop knowledge and skills in techniques for gaining insights from big data as well as their use in select application domains.

Content

The course will use technical research papers from recent years in venues corresponding to the topic. The course will be run as a seminar series with student presentations followed by an in-class discussion. The students will be graded based on presentations and short reviews written for each reading assignment.

The topics will include:

1. Data Sharing (Sovereign Sharing, Honest Sharing)
2. Data Security & Privacy (Querying encrypted data, Privacy-preserving data mining)
3. Intelligence from Web Data (Diversifying Search Results, Generating Training data from clicks)
4. Intelligence from Social Data (Sociology at scale: Homophily, Group Dynamics)
5. Intelligence from Commerce Data (Timing when to buy, Automatic catalog creation)
6. Intelligence from Educational Data (Curriculum Design, Classroom design)
7. Intelligence from Brain Data (Brain activation, Brain Maturity)
8. Trust in Data (Blockchain)

Target Audience:

1. Ph.D. students looking for thesis topic
2. Ph.D. students/Postdocs interested in broadening their knowledge

Format:

1. We will cover one topic per week in a 2-hr session (inc. breaks). Each session will begin with an introduction to the topic by the instructor, followed by the presentations on two subtopics by the students. Each presentation will be based on a recommended core paper, though the presenters may add discussions from any other papers they find relevant and interesting. Each presentation will be followed by an open discussion.
2. Every student is expected to pre-read the core papers recommended for the session. Within a week of the conclusion of a session, every student is expected to provide a short, written report covering the key ideas they learned on the topic and what they see as new opportunities for research related to the topic.

Grading:

 Participation in class discussions: 50%

 Written Reports: 30%

 Presentations: 20%

 Extra Credit: A publishable original/survey paper

Peer grading will be used as a component in assigning the overall grade.

Reading list:

https://docs.google.com/document/d/1Pt6Kq5hZ_lb2m0TtMQh2pM3jIDtnMY-PDU1_BrZjI/edit?usp=sharing

Note

The course is appropriate for students admitted to the Ph.D. program in Computer Science.

Keywords

Data Analytics, Big Data