האוניברסיטה העברית בירושלים
THE HEBREW UNIVERSITY OF JERUSALEM

The Hebrew University of Jerusalem

Syllabus

Seminar in Data Science - 55890

Last update 13-10-2018

HU Credits: 4

Degree/Cycle: 2nd degree (Master)

Responsible Department: Business Administration

Academic year: 0

Semester: Yearly

Teaching Languages: Hebrew

Campus: Mt. Scopus

Course/Module Coordinator: Lev Muchnik

Coordinator Email: lev.muchnik@huji.ac.il

Coordinator Office Hours:

Teaching Staff:

Prof Lev Muchnik

Course/Module description:

The information system seminar is a yearly course designated for students in Information Systems and Computer Science. This year's seminar will be dedicated to exploration of large, society-scale systems representing behavior and interaction of large number of people. As datasets containing such information are becoming increasingly accessible, affecting contemporary research, the approaches to their analysis are still far from being considered a part of a standard toolbox. The data of such scale poses a range of questions that require unique expertise rarely found in academia.

During this seminar we will follow the route originating from data aggregation and management and leading to its efficient and fruitful analysis. The students will be taught how to design a proper research question and engage it with an adequate set of computational tools.

We will start by reviewing social science research literature based on Big Data, including but not limited to e-commerce, marketing, economics, agent-based and statistical modeling, online user behavior, content consumption and social media. We will further discuss the technical challenges imposed by the Big Data and the approaches to deal with it. Finally, we will briefly review the relevant methodologies employed in this line of research.

Class discussions involving students, guests (researchers in the field) and moderated by the instructor will help students to define research projects. The students will periodically report their progress to receive feedback and advice as they proceed.

The goals of the seminar are:

- Introduce Ph.D. students to the modern Big Data research
- Review methodologies typically employed in such research
- Get acquainted with the tools used in high-performance computing
- Conduct guided research on the project of student's choice
- Wrap the project results into a research paper format

We expect that the experience gained during this year-long seminar will assist the students with their research. We also hope that the most successful ideas developed during the seminar will evolve into scientific publications and boost student's carriers.

Prerequisites: The course is intended for students engaged in empirical research in social sciences and having background in computational methods, programming and relational databases.

Course/Module aims:

Learning outcomes - On successful completion of this module, students should be able to:

To Perform independent Research in Data Mining and Text Mining

Attendance requirements(%):

80%

Teaching arrangement and method of instruction: Independent Guided Research, Read and present papers in data science.

Course/Module Content:

Big Data
Data Science
Analysis of Culture
Spread of fake news
Building a data science team
Why Enterprise Data Warehouse Projects Fail, and What to do About it
Data Science & the Scientific methodology
Experimentation
Data Science in Medicine

Required Reading:

A set of papers will be provided during the first meeting

Additional Reading Material:

Course/Module evaluation:

End of year written/oral examination 0 %
Presentation 30 %
Participation in Tutorials 10 %
Project work 0 %
Assignments 0 %
Reports 0 %
Research project 40 %
Quizzes 0 %
Other 20 %
Attendance

Additional information:

Room 5102B
School of Business Administration
The Hebrew University of Jerusalem
Mt. Scopus