



The Hebrew University of Jerusalem

Syllabus

Data Science Practicum - 55724

Last update 18-04-2024

HU Credits: 3

Degree/Cycle: 2nd degree (Master)

Responsible Department: Business Administration

Academic year: 2024

Semester: 2nd Semester

Teaching Languages: Hebrew

Campus: Mt. Scopus

Course/Module Coordinator: Dr. Ariel Goldstein

Coordinator Email: ariel.goldstien@mail.huji.ac.il

Coordinator Office Hours:

Teaching Staff:

Dr. Ariel Goldstien

Course/Module description:

The course will focus on data science practices. it will involve heavy programming and the development of real world projects.

Course/Module aims:

To teach the students actual data science practices, software engineering methods with strong focus on machine learning frameworks.

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

1. Learn more advanced data science techniques
2. Learn from a few large scale data science projects
3. Design and implement a meaningful data science product/project

Attendance requirements(%):

70%

Teaching arrangement and method of instruction: frontal lectures and guided project development

Course/Module Content:

1. Multiprocessing (1 class)
2. Advanced pandas (3 classes)
3. Advanced Classification (1 class)
4. Advanced Time Series Analysis (2 classes)
5. Unsupervised learning (2 classes)
 - a. Advanced Clustering
 - b. Unsupervised Feature Extraction from Text
6. TensorFlow, the most popular open-source Deep Learning library. (2 classes)
7. Keras (2 classes with 8 & 9)
8. Convolutional Nets for machine vision;
9. Long Short-Term Memory Recurrent Nets for natural language processing and time series analysis;

Required Reading:

Python for Data Analysis: Data Wrangling with Pandas, NumPy, and IPython 2nd Edition
Python Data Science Handbook: Essential Tools for Working with Data
Hands-On Machine Learning with Scikit-Learn and Tensor Flow: Concepts, Tools, and Techniques to Build Intelligent Systems
Machine Learning, Tom Mitchell

Additional Reading Material:

Grading Scheme:

Essay / Project / Final Assignment / Home Exam / Referat 100 %

Additional information: