Lisbon School of Economics & Management
Universidade de Lisboa

U LISBOA
UNIVERSIDADE DE LISBOA

Academic Year: 2025/2026

PROGRAMMING FOR DATA SCIENCE

Apresentação

- Learning Objectives
- Program
- Evaluation rules
- Bibliography
- Professor

Course Objectives

The student should obtain the following skills:

Objectives

LO1. Consolidate main programming concepts.
LO2. Understand main concepts related to Machine Learning.
LO3. Solve problems using programming and algorithms.
LO4. Create Data Science Projects.

Course Syllabus

1. **Overview of main programming concepts**
2. **Machine Learning algorithms**
    a. Supervising Learning
    b. Unsupervised learning
3. **Data Science Process**
    a. Planning Data Science Project
    b. Business Understanding, Data Understanding, Data Collection
    c. Data Preparation and Modeling
    d. Validation and Deployment
4. **Projects Presentation**

Learning Process

- All the classes are **theoretical** and **practical**.
- Lectures typically have a small presentation of theory, context of usage and techniques used.
- Lecturer also illustrate some practical cases.
- In this demonstration, the lecturer needs to use computer and adequate compilers/interpreters and IDE.
- Students may or may not follow this presentation in his own desktop.
- There are several exercises where students are supported by the lecturer. Individual work is complemented with groupworks.

Evaluation

- Laboratory work may be individual or group work.
- Students also must perform a project in group.

Students performance evaluation will derive from

- laboratory work, submitted during classes (30%)
- the assigned teamwork project presented during the semester (40%)
- final individual exam (30%).

Bibliography

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Madhavan, S.(2015) *Mastering Python for Data Science*. Packt Publishing Ltd,

Downey, A. B. (2016). Think Python. 2nd Edition. O'Reilly Media, Inc

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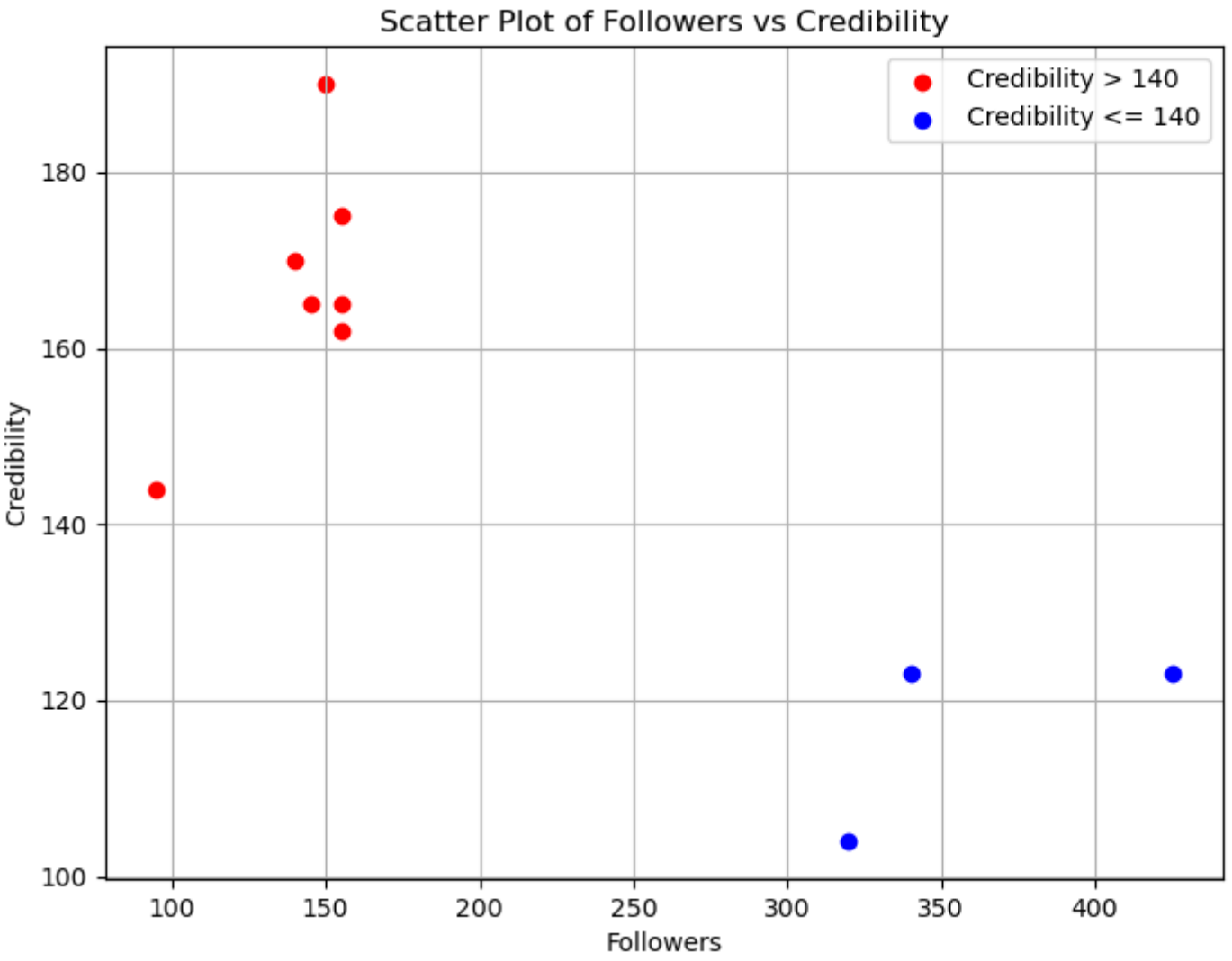
Scatter Plot of Followers vs Credibility
Credibility > 140
Credibility <= 140
Credibility
Followers
180
160
140
120
100
100
150
200
250
300
350
400