Course guide
270967 - DEDS - Debates on Ethics of Data Science

Unit in charge: Barcelona School of Informatics
Teaching unit: 747 - ESSI - Department of Service and Information System Engineering.
Degree: MASTER'S DEGREE IN DATA SCIENCE (Syllabus 2021). (Optional subject).
Academic year: 2022  ECTS Credits: 3.0  Languages: English

LECTURER
Coordinating lecturer: ALBERTO ABELLO GAMAZO - OSCAR ROMERO MORAL

Prior skills
Basic knowledge in Data Management and Analytics

Degree competences to which the subject contributes

Specific:
CE12. Apply data science in multidisciplinary projects to solve problems in new or poorly explored domains from a data science perspective that are economically viable, socially acceptable, and in accordance with current legislation
CE13. Identify the main threats related to ethics and data privacy in a data science project (both in terms of data management and analysis) and develop and implement appropriate measures to mitigate these threats

Transversal:
CT2. Sustainability and Social Commitment. To know and understand the complexity of economic and social phenomena typical of the welfare society; Be able to relate well-being to globalization and sustainability; Achieve skills to use in a balanced and compatible way the technique, the technology, the economy and the sustainability.
CT5. FOREIGN LANGUAGE: Achieving a level of spoken and written proficiency in a foreign language, preferably English, that meets the needs of the profession and the labour market.
CT6. GENDER PERSPECTIVE: An awareness and understanding of sexual and gender inequalities in society in relation to the field of the degree, and the incorporation of different needs and preferences due to sex and gender when designing solutions and solving problems.

Basic:
CB7. Ability to integrate knowledges and handle the complexity of making judgments based on information which, being incomplete or limited, includes considerations on social and ethical responsibilities linked to the application of their knowledge and judgments.
TEACHING METHODOLOGY

The first course session introduces the course: the idea of debates and how they work. The other sessions will be debates. Before each debate, some material (typically papers) will be proposed for a debate during the lecture.

The students are meant to read the materials (and look for their own) before the lecture. During the lecture, there will be an organized debate (pro and against groups will be configured as well as a moderator). After the debate, each group (pro, against and moderator) will be asked to write down their debate conclusions.

The course methodology puts the focus on three main aspects:
- Critical reasoning (with special focus on ethics and social impact),
- Develop soft skills to defend - criticize a position in public,
- Improve the writing skills summarizing an event.

The course methodology wraps up with the read and reflection of a seminal book on ethics for data science.

LEARNING OBJECTIVES OF THE SUBJECT

1. Acknowledge the current and future impact of next generation analytical systems on society
2. Ability to study and analyze problems in a critical mood
3. Ability to critically read texts
4. Develop critical reasoning with special focus on ethics and social impact
5. Develop soft skills to defend - criticize a predetermined position in public
6. Improve the writing skills

STUDY LOAD

<table>
<thead>
<tr>
<th>Type</th>
<th>Hours</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hours large group</td>
<td>27,0</td>
<td>36.00</td>
</tr>
<tr>
<td>Self study</td>
<td>48,0</td>
<td>64.00</td>
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</tbody>
</table>

Total learning time: 75 h

CONTENTS

Introduction: Debate Rules and Course Structure

Description:
In this first module we will present the course, its structure and methodology.

Ethics and social impact of next generation analytical systems: Debates

Description:
After presenting what will be next in the area of data science and big data, in this module we discuss the impact these new ideas will have on society. More specifically, we will discuss about ethics, personal data protection, hacking, licensing / patenting, IP rights, etc. The discussion will be on the form of debates.

Read a book to develop your ethical reasoning

Description:
A mandatory book read that will develop the ethical reasoning of the students
**ACTIVITIES**

**Introduction**

**Description:**
The course is introduced. We will discuss the course structure, the methodology and the evaluation.

**Specific objectives:**
1

**Related competencies:**
CE12. Apply data science in multidisciplinary projects to solve problems in new or poorly explored domains from a data science perspective that are economically viable, socially acceptable, and in accordance with current legislation
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CT5. FOREIGN LANGUAGE: Achieving a level of spoken and written proficiency in a foreign language, preferably English, that meets the needs of the profession and the labour market.
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CB7. Ability to integrate knowledges and handle the complexity of making judgments based on information which, being incomplete or limited, includes considerations on social and ethical responsibilities linked to the application of their knowledge and judgments.

**Full-or-part-time:** 18h
Theory classes: 1h
Guided activities: 9h
Self study: 8h
Debates on Ethics and social impact of next generation analytical systems and Big Data

Description:
During these sessions the debates discussing ethics and social impact of next generation analytical systems and Big Data will take place. You must read the available material before the debate. Then, during the debate you will assign to a group: either to defend an idea, or go against it. You may also be asked to moderate the debate. Then, the debate takes place and afterwards, each group needs to write down a report with their conclusions

Specific objectives:
1, 2, 3, 4, 5, 6

Related competencies:
CE12. Apply data science in multidisciplinary projects to solve problems in new or poorly explored domains from a data science perspective that are economically viable, socially acceptable, and in accordance with current legislation
CE13. Identify the main threats related to ethics and data privacy in a data science project (both in terms of data management and analysis) and develop and implement appropriate measures to mitigate these threats
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Full-or-part-time: 41h
Laboratory classes: 15h
Guided activities: 2h
Self study: 24h
Read a seminal book on ethics for data science and Big Data

Description:
Reads the book and conducts the assessment provided

Specific objectives:
1, 2, 3, 4, 5, 6

Related competencies:
CE12. Apply data science in multidisciplinary projects to solve problems in new or poorly explored domains from a data science perspective that are economically viable, socially acceptable, and in accordance with current legislation
CE13. Identify the main threats related to ethics and data privacy in a data science project (both in terms of data management and analysis) and develop and implement appropriate measures to mitigate these threats
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Full-or-part-time: 25h
Guided activities: 5h
Self study: 20h

GRADING SYSTEM

Each debate entails two main parts:
- (60%) The face-to-face debate Db (this mark is computed from the report written by the moderator group and supervised by the lecturers).
- (40%) The written conclusions Wr.

Thus, each debate mark (Di) is computed as Di = Db*0,6 + Wr*0,4. The final mark will be computed as the average of the debates. Those students not debating will have to write a report and their session mark will be 100% on Wr (i.e., Di = Wr).
The final evaluation of the debates (DM) is the average mark of the debates.

The book reading (BM) is evaluated by means of a deliverable related to it.

The course final mark is calculated as follows: 0,8*DM + 0,2*BM.

The evaluation is done on an individual basis.
BIBLIOGRAPHY

Basic: