Universitat Autònoma de Barcelona

2023/2024

Artificial Intelligence in Communication

Code: 106672
ECTS Credits: 6

Degree	Type	Year	Semester
2503873 Interactive Communication	OT	4	1

Contact

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Teaching groups languages

You can check it through this link. To consult the language you will need to enter the CODE of the subject.
Please note that this information is provisional until 30 November 2023.

Prerequisites

To be able to take this subject it is necessary to have basic knowledge of the English language to face the readin

Objectives and Contextualisation

To have a general but complete overview of what artificial intelligence is, its possibilities and the application of these technologies in the field of communication and interactive communication.

1. What is AI? Definition, analysis and history of artificial intelligence systems.

2. What is Machine Learning and Deep Learning? Study of neural networks.

3. Generative Artificial Intelligence.

4. Transcendence: Ethical principles and social implications of AI.

5. Startups and new AI-based business models.

Competences

- Act with ethical responsibility and respect for fundamental rights and duties, diversity and democratic values.

- Act within one's own area of knowledge, evaluating sex/gender-based inequalities.
- Determine and plan the technological infrastructure necessary for the creation, storage, analysis and distribution of interactive multimedia and social-networking products.
- Introduce changes in the methods and processes of the field of knowledge to provide innovative responses to the needs and demands of society.
- Manage time efficiently and plan for short-, medium- and long-term tasks.
- Promote and launch new products and services based on massive-scale mining and analysis of data from the Media.
- Search for, select and rank any type of source and document that is useful for creating messages, academic papers, presentations, etc.
- Students must be capable of applying their knowledge to their work or vocation in a professional way and they should have building arguments and problem resolution skills within their area of study.
- Students must be capable of communicating information, ideas, problems and solutions to both specialised and non-specialised audiences.
- Students must develop the necessary learning skills to undertake further training with a high degree of autonomy.
- Take account of social, economic and environmental impacts when operating within one's own area of knowledge.

Learning Outcomes

1. Analyse a situation and identify its points for improvement.
2. Communicate using language that is not sexist or discriminatory.
3. Critically analyse the principles, values and procedures that govern the exercise of the profession.
4. Cross-check information to establish its veracity, using evaluation criteria.
5. Describe the infrastructure needed to store big data.
6. Differentiate between the various types of existing architectures for working with big data.
7. Distinguish the salient features in all types of documents within the subject.
8. Evaluate the impact of problems, prejudices and discrimination that could be included in actions and projects in the short or medium term in relation to certain people or groups.
9. Explain the characteristics of the infrastructure needed to recover big data.
10. Explain the explicit or implicit deontological code in your area of knowledge.
11. Explain the infrastructure needed to process big data.
12. Extract large volumes of data from social networks and the new digital media in particular.
13. Identify situations in which a change or improvement is needed.
14. Identify the social, economic and environmental implications of academic and professional activities within one's own area of knowledge.
15. Plan and execute academic projects in the field of big data.
16. Propose new methods or well-founded alternative solutions.
17. Propose projects and actions that are in accordance with the principles of ethical responsibility and respect for fundamental rights and obligations, diversity and democratic values.
18. Propose projects and actions that incorporate the gender perspective.
19. Propose viable projects and actions to boost social, economic and environmental benefits.
20. Share experiences with the group as a path to learning, in order to work subsequently in multidisciplinary groups.
21. Solve basic problems in big data.
22. Submit course assignments on time, showing the individual and/or group planning involved.
23. Weigh up the risks and opportunities of both one's own and other people's proposals for improvement.

Content

1. What is Artificial Intelligence (AI) and its characteristics.

    1.1 What is AI?

1.2 History of AI

1.3 Trends in communication (hyper-targetisation) and in interactive communication.

2. Data collection processes:

2.1 Big data: generation and sources of data through social networks

2.2 Structured data

2.3 Unstructured data

3. Machine Learning (ML) and Deep Learning (DL):

3.1 ML: Supervised Learning (Classification and Regression)

3.2 ML: Unsupervised Learning (Reduction and Clustering)

3.3 DL and Reinforcement Learning

3.4 XAI and Black Boxes

3.5 Neural Networks, Deep Learning, Dimensionality Reduction and other important concepts

4. Production of an audiovisual work through Generative AI:

4.1 Creating a story

4.2 Creation of images

4.3 Creating video

4.4 Creating music

4.5 Creating voice-overs

4.6 AI in post-production

5. Transcendence: Ethical principles and social implications of AI:

5.1 Ethics

5.2 Legislation

5.3 Social Implications

6. Startups and new business models based on AI

6.1 The big tech companies (Google, Meta, Apple, Amazon)

6.2 Networks and nodes

6.3 Startups in the communications sector based on AI

6.4 AI-based startups in the Catalan communication sector

6.5 Future AI-based business models

7. Data-driven Marketing

7.1 Netflix Data-Driven Content Machine

Methodology

The acquisition of knowledge will be carried out through various methodological procedures that include different types of activities, grouped into: lectures, practicals and seminars.

In the theoretical sessions, the contents of the programme will be presented, thus providing the necessary elements to carry out the practical exercises in the laboratories.

The practical sessions will be used to apply the knowledge acquired in the theoretical sessions to real cases. In the seminars, critical reflection and debate on the analysis of real cases and models are encouraged.

The detailed calendar and content of the different sessions will be displayed on the day the course is presented and will also be posted on the virtual campus where students can find a detailed description of the exercises and practices, as well as the various teaching materials and any information necessary for the proper monitoring of the course. In the event of a change of teaching modality for health reasons, the teaching staff will inform of the changes that will take place in the course programme and teaching methodologies.

Note: attendance is compulsory. In the event of not being able to attend any of the classes, the student must justify this with an official certificate.

Note: 15 minutes of a class will be reserved, within the timetable established by the centre/degree, for students to fill in the evaluation surveys of the teaching staff's performance and the evaluation of the subject/module.

Annotation: Within the schedule set by the centre or degree programme, 15 minutes of one class will be reserved for students to evaluate their lecturers and their courses or modules through questionnaires.

Activities

Title	Hours	ECTS	Learning Outcomes
Type: Directed			
Laboratory practices	12	0.48	1, 20, 12, 14, 13, 15, 23, 16, 19, 21
Master classes with ICT support	15	0.6	3, 1, 5, 6, 10, 11, 9, 14, 13, 8
Seminars	21	0.84	3, 1, 2, 4, 7, 14, 13, 23, 22, 16, 17, 18, 19, 8
Type: Supervised			
Theoric exam	3	0.12	3, 5, 6, 10, 14, 21, 8
Tutorials (individual or group face-to-face activity aimed at solving learning problems)	10	0.4	1, 2, 7, 13, 22
Type: Autonomous			
Study: Reading and synthesis of scientific documents	56	2.24	3, 1, 6, 14, 13, 17, 8

Assessment

The competences of this subject are assessed with different activities:

- Theoretical test (40% of the final grade)

- Practical group presentations (40% of the final grade).

- Submission of individual work (10% of the final grade)

- Attendance (10% of the final mark)

The final mark will be the sum of the marks obtained in each of these parts.

It is essential to take all three assessment tests in order to pass the course.

The weighting of the three evaluable parts will be carried out, even if one of them is failed. However, the weighting will not be carried out if two of them are failed.

The evaluation system of this subject corresponds to continuous evaluation.

OPTIONAL RECOVERY SYSTEM:

Students will have the right to recover the subject only if all the activities have been evaluated. Only failed laboratory practicals and the written test can be made up. Therefore, all the activities that have not been presented are excluded from the recovery. Seminars are not recoverable and therefore cannot be re-evaluated.

If the exam is failed with less than 3.5, the student will not be entitled to re-evaluation.

The maximum mark for the laboratory practicals will be 5 out of 10.

The mark obtained in the written test will be the final mark for this section, regardless of whether it is better or worse than the first test taken.

Attendance: Attendance at seminar classes and laboratory practicals is compulsory. The unexcused absence of the student in these sessions implies a "no-show" in the grade of the seminar or specific practical, and therefore will not be recoverable.

In the event of any irregularity by the student that may lead to a significant variation in the grade of an evaluation act, this evaluation act will be graded with 0, regardless of the disciplinary process that may take place. In the event of several irregularities occurring in the assessment acts of the same subject, the final grade forthis subject will be 0.

The proposed teaching methodology and assessment may undergo some modification depending on the restrictions imposed by the health authorities.

This subject does not include a single assessment system.

Assessment Activities

Title	Weighting	Hours	ECTS	Learning Outcomes
Class attendance	10%	15	0.6	1, 20, 13, 15, 22, 21
Delivery of individual works	10%	0	0	20, 4, 5, 7, 6, 11, 9, 12, 13, 23, 22, 16, 17, 18, 19, 21

Group practice presentations	40%	15	0.6	1, 20, 2, 5, 6, 11, 9, 12, 13, 15, 16, 19
Theoric exam	40%	3	0.12	3, 4, 5, 6, 10, 14, 21, 8

Bibliography

Cappello M. (ed.), New actors and risks in online advertising, IRIS Special, European Audiovisual Observatory, Strasbourg, 2022. © European Audiovisual Observatory (Council of Europe), Strasbourg, July 2022

Hageback, Niklas. AI for Creativity, Taylor & Francis Group, 2021. ProQuest Ebook Central, http://ebookcentral.proquest.com/lib/uab/detail.action?docID=6688906.

Latorre, José Ignacio. Ética para máquinas, Ariel, 2019.

Ryszard S. Michalski, Jaime G. Carbonell y Tom M. Mitchell. Machine Learning: An Artificial Intelligence Approach, Morgan Kaufmann. 2014.

Venkatesan, Raj, and Jim Lecinski. The AI Marketing Canvas : A Five-Stage Road Map to Implementing Artificial Intelligence in Marketing, Stanford University Press, 2021.

Specific bibliography will be provided in the theoretical sessions if appropriate.

Software

Code-oriented text editor