AI and journalism, robot journalism and algorithms

A syllabus for Journalism and Media Studies programmes

Erasmus+

1. Data on the programme

1.1 Field of study	**Journalism and media studies**
1.2 Recommended level *[Bachelor/ Masters]*	**Bachelor/Masters**
1.3 Recommended study programme/ qualification	**Mass Communication**

2. Data on the discipline

2.1 Name	**AI and journalism, robot journalism and algorithms**
2.2 Recommended qualifications for the teacher *[practitioner, theoretician, PhD holder in a certain field of study, etc.]*	**Theoretician** **Theoretician/practitioner for the seminars**
2.3 Year of study *[entry level/ advanced]*	**...**
2.4. Evaluation type *[examination/ project/ portfolio/essay]*	**...**
2.5. Type of discipline [facultative, compulsory]	**...**

3. Total time - estimated [hours per semester of student activity]

3.1 Number of hours per week	**2**	From which: 3.2 course *[theory]*	**2 (7 weeks)**	3.3 seminar *[theory & practice]*/laboratory *[practice & laboratory]*	**2 (3 weeks)**
3.4 Total number of hours *[3.1 X number of weeks; 12-14 weeks per semester]*	**20**	From which: 3.5 course *[theory]*	**14**	3.6 seminar *[theory & practice]*/ laboratory *[practice & laboratory]*	**6**
Time distribution					**Hours**
Individual study using a manual, course support, bibliography, notes from the course					**80**
Documentation online and/ or on the field					**0**

Preparing homework: individual or teamwork, portfolios, essays, etc.	**40**
Tutoring	**0**
Examinations	**0**
Other activities	**10**
3.7 Total hour of individual study	**130**
3.8 Total hours per semester (3.4. + 3.7)	**150**
3.9 Number of ECTS	**6**

4. Preconditions (if applicable)

[Who are the intended students]

4.1 curriculum preconditions (recommended previous courses)	**No preconditions, but it is recommended for students that already completed some degree in journalism or communication fields**
4.2 competences preconditions	**N/A**

5. Infrastructure needed (if applicable)

5.1 for the course	**Laptop, Projector, Screen, Audio System, Internet access**
5.2 for the seminar/laboratory	**Laptop or other computer, Internet access**

6. Specific abilities

[What do we want students to be able to do]

6.1. Professional competencies *[job skills to be developed]*	● **Collaboration skills** ● **Innovation skills in the field** ● **Problem solving skills** ● **Translate theoretical insights into journalistic practice and vice versa** ● **Skills to reflect and identify upon when is appropriate to deploy automated content production in a newsroom**

	• **Being able to discuss appropriately benefits and limitations of the use of artificial intelligence in media, in general, and journalism in particular.**
6.2. Transversal competencies *[team work, critical thinking, global citizenship, etc.]*	• **Critical and innovative thinking** • **Media and Information literacy** • **Interpersonal skills** • **Intrapersonal skills**

7. Discipline's objectives

[related to developing abilities & competencies]

7.1 General objective	**This course is aimed to give tools for students to understand the role, potential and limitations of artificial intelligence in journalism, so that they know the basics about robot journalism and algorithms. It's an entry point course.**
7.2 Specific objectives *[Learning outcomes – observable, measurable]*	• **Identify and understand the algorithmic approaches being used in journalism, in several areas that range from content production to computational story discovery and news curation and dissemination.** • **Understand how automated content production works, how it's used by news organizations** • **Discuss the benefits and limitations of automated content production** • **Be able to know when it's appropriate to deploy automated content production** • **Understand the basics of algorithms in news curation and dissemination** • **Know how to think about metrics and how editorial criteria can be introduced into news organization's curation algorithms that might be being developed** • **Being able to use some methods to investigate algorithm's accountability,** • **Identify how algorithms are creating a new object for journalistic investigation, which is giving rise to a specialized practice called algorithmic accountability reporting** • **Understand the importance of ethics and accountability in the making of algorithms.**

8. Content

[for 12 weeks]

8.1. Course	Teaching methods [connected to professional & transversal competencies]	Observations [link among proposed teaching methods and intended competences]
Course - week 1 Algorithms and news media. Course introduction. Syllabus. Class presentation.	E-learning, lecture	Translate theoretical insights into journalistic practice and vice versa Skills to reflect and identify upon when is appropriate to deploy automated content production in a newsroom
Course – week 2 What algorithms are and how they're used in the media industry, in general and news production, in particular	E-learning, lecture, discussion, questions/answer	Innovation skills in the field Problem solving skills Translate theoretical insights into journalistic practice and vice versa
Course – week 4 What are the benefits and limitations of automated content for news production	E-learning, lecture, discussion, questions/answer	Innovation skills in the field Problem solving skills Translate theoretical insights into journalistic practice and vice versa Skills to reflect and identify upon when is appropriate to deploy automated content production in a newsroom
Course - week 5 Dissemination and news curation: the importance of algorithms The role and power of platform curation algorithms in news distribution	E-learning, lecture, discussion, questions/answer	Innovation skills in the field Problem solving skills Translate theoretical insights into journalistic practice and vice versa
Course - week 8 Algorithm's accountability and transparency	Lecture, discussion, questions/answer	Innovation skills in the field Translate theoretical insights into journalistic practice and vice versa

		Being able to discuss appropriately the benefits and limitations of the use of artificial intelligence in media, in general, and journalism in particular.
Course - week 9 Why investigating algorithms in society is important for journalism	Lecture, discussion, questions/answer	Collaboration skills Innovation skills in the field Problem solving skills Translate theoretical insights into journalistic practice and vice versa Skills to reflect and identify upon when is appropriate to deploy automated content production in a newsroom Being able to discuss appropriately the benefits and limitations of the use of artificial intelligence in media, in general, and journalism in particular.
Course – week 12 Ethical implications of algorithms to produce news Being transparent with your own use of algorithms in news work	Lecture, discussion, questions/answer	Collaboration skills Innovation skills in the field Problem solving skills Translate theoretical insights into journalistic practice and vice versa Skills to reflect and identify upon when is appropriate to deploy automated content production in a newsroom Being able to discuss appropriately the benefits and limitations of the use of artificial intelligence in media, in general, and journalism in particular.
8.2 Seminar/laboratory	Teaching methods *[connected to professional & transversal competencies]*	Observations *[link among proposed teaching methods and intended competences]*
Seminar – week 3 How does an algorithm work How to write a template to drive automated text production	Discussion, questions/answer, practice - hands-on	Collaboration skills Innovation skills in the field Problem solving skills Translate theoretical insights into journalistic practice and vice versa

Seminar – week 6		Collaboration skills
Content optimization and how to think about metrics for content optimization: several approaches		Innovation skills in the field
		Problem solving skills
		Translate theoretical insights into journalistic practice and vice versa
Seminar - Week 7 Writing a simple template for automated text production, having in mind content optimization	Discussion, questions/answer, practice - hands-on, group work	Collaboration skills Innovation skills in the field Problem solving skills Translate theoretical insights into journalistic practice and vice versa
Seminar - week 10 Presentation of the template for for automated text production	Discussion, questions/answer, practice - hands-on, group work	Collaboration skills Innovation skills in the field Problem solving skills Translate theoretical insights into journalistic practice and vice versa
Seminar - Week 11 Different methods to approach investigation algorithms	Discussion, questions/answer, practice - hands-on, group work	Collaboration skills Innovation skills in the field Problem solving skills Translate theoretical insights into journalistic practice and vice versa

9.1. Compulsory (core) bibliography

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9.2. Additional bibliography

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Gillespie, T. (2014) *The Relevance of Algorithms*, DOI:10.7551/mitpress/9780262525374.003.000

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Graefe, A. & Bohlken, N. (2020) *Automated Journalism: A Meta-Analysis of Readers' Perceptions of Human-Written in Comparison to Automated News*. Media and Communication, Vol 8, No 3 (2020). DOI: http://dx.doi.org/10.17645/mac.v8i3.3019

IBM (s.d), *IBM Shoebox*. Available at https://www.ibm.com/ibm/history/exhibits/specialprod1/specialprod1_7.html

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10. How is the discipline connected to the expectations of the professional /epistemic community

Our previous research made clear that most of the journalists that are working in the Artificial Intelligence field were self-taught, they have been learning by doing and trying to get knowledge from several sources, in some cases not linked specifically with communication or journalism teaching. So, bearing in mind the growing importance of this field it is extremally necessary that we start to have an offer that is specifically thought for journalists.

11. How is the discipline connected to the rest of the journalistic / communication studies curriculum

Being able to offer our students state of the art disciplines that mirror the evolution of journalism and media is one of the goals of every educator, and since this as very important field it is crucial to offer our students the possibility to have contact with this field, in manner that it will help them be the most well prepared possible to do their job.

12. Evaluation

[How to measure students' acquired abilities, through different instruments, such as: tests; analyses of existing journalistic examples; essays; suggested portfolio]

Type of activity	12.1 Evaluation criteria	12.2 Evaluation methods
Course	Class participation (10 %)	Knowledge of the compulsory reading, ability to answer questions during the lecture or/and discuss topics.
	Individual assignment – Essay (50 %)	Written academic essay (max. 10 pages) focused on one of the topics of the course.
Seminar/laboratory	Group assignments – 3 case studies (15 %, max. 5 % each)	Practical work in each seminar.
12.3 Minimum performance standard *[linked to specific objectives/ learning outcomes]* 60 % of the overall score; all tasks must be finished and submitted/performed		

13. Rationale

This is a entry point course for students to understand the importance of this field and manage to identify when and were artificial intelligence can be used. Without letting off a critical use, bearing in mind the pros and cons of its use.

Benchmarking courses (links)

News Algorithms: The Impact of Automation and AI on Journalism

https://journalismcourses.org/course/newsalgorithms/

Journalism AI

https://www.lse.ac.uk/media-and-communications/polis/JournalismAI

Intro AI for journalists

https://online.journalism.cuny.edu/courses/intro-to-ai-for-journalists

Introduction to machine learning

https://storage.googleapis.com/gweb-news-initiative-training.appspot.com/upload/GNI_Training_JournalismAI_IntroductiontoMachineLearning.pdf
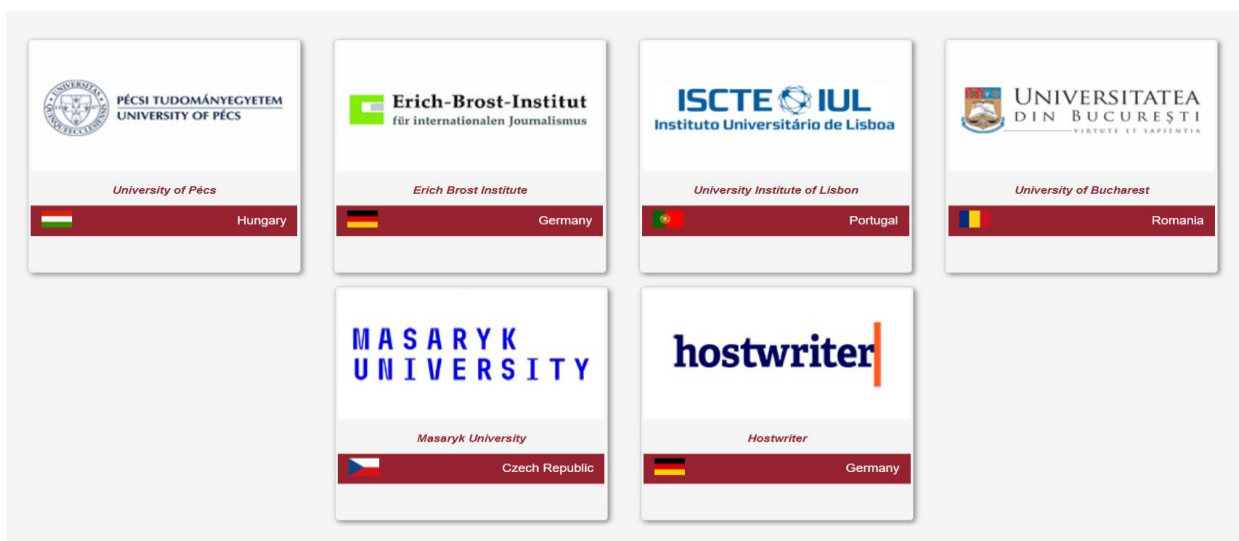
MSc Artificial Intelligence for Media

https://www.bournemouth.ac.uk/study/courses/msc-artificial-intelligence-media

Google launches training on AI, machine learning for journalists

https://ijnet.org/en/opportunity/google-launches-training-ai-machine-learning-journalists-worldwide

University of Pécs Hungary	Erich Brost Institute Germany	University Institute of Lisbon Portugal	University of Bucharest Romania
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