Modello D (inglese) General Information	
Academic subject	Sentiment Analysis
Degree course	Data Science
ECTS credits	6
Denominazione inglese	Sentiment Analysis
Obbligo di frequenza	NO
Lingua di erogazione	ITALIANO

Docente responsabile	Name Surname	Mail address	SSD
	Nicole Novielli	nicole.novielli@uniba.it	INF/01

ETCS credit details	
Basic teaching activities, including lectures, tutorials and workshops	

Class schedule	
Period	I semester
Year	2nd
Type of class	Lecture-workshops

Organizzazione della didattica	
Hours	48 (6 credits)

Academic calendar	
Class begins	October 2020
Fine attività didattiche	January 2021

Syllabus	
Prerequisites/requirements	
Expected learning outcomes (according to Dublin Descriptors) (it is recommended that they are congruent with the learning outcomes contained in A4a, A4b, A4c tables of the SUA-CdS)	*Knowledge and understanding* The students will know the foundations of Sentiment Analysis, that is the systems that address the task of automatic classifying the positive/negative/neutral semantic orientation of a text as well as other subjective content of a text, such as emotions and opinions. *Applying knowledge and understanding* The students will be able to apply analytics methods and tools to recognize sentiment in online communication traces in natural language, such as microblogging, comments in collaborative software development platforms, or Q&A sites. *Making informed judgements and choices* The students will learn what are the main theoretical models behind sentiment analysis and affect modeling, will learn how to operationalize them in order build and evaluate sentiment analysis systems.

	• *Communicating knowledge and understanding* The student will learn how to present advanced problems and formulate adequate solutions. They will learn how to communicate and collaborate through collaborative assignments on specific case. • *Capacities to continue learning* The students will be able to autonomously learn theoretical concepts and empirical evidence by reading research papers.

Contents	• Sentiment Analysis Fundamentals
	  - The problem of sentiment analysis
	  - Theoretical Background on Affect Modeling
	
	• Mining Opinions and Emotions from Text: Tasks, Classifiers, and Key Applications
	  - Sentence subjectivity and polarity classification
	  - Aspect-based sentiment classification
	  - Lexical Resources for sentiment analysis and their generation
	  - Classifier models for sentiment: Lexicon-based vs. corpus-based approaches based on machine learning
	  - Vector space models
	  - Evaluation of sentiment analysis classifiers
	  - Cross-Domain Sentiment Classification
	
	• Sentiment analysis and computer-supported cooperative work
	  - Sentiment Analysis in the social programmer ecosystems: mining opinions and emotion from microblogs (e.g., Twitter), collaborative-development platforms (e.g., GitHub), and Q&A sites (e.g,. Stack Overflow)
	  - Toxicity and hate-speech detection in online communities
	  - Sentiment and emotions in collaborative software development

Programma	

Bibliography	*Books*
	  - Bing Liu. Sentiment Analysis: Mining Opinions, Sentiments, and Emotions. Cambridge University Press, 2015, 381 pp.; hardcover, ISBN 9781107017894
	
	Research papers
	  - M. Thelwall, K. Buckley, and G. Paltoglou, "Sentiment strength detection for the social web," J. Am. Soc. Inf. Sci. Technol., vol. 63, no. 1, pp. 163–173, 2012. Available: http://sentistrength.wlv.ac.uk
	  - M. Mäntylä, B. Adams, G. Destefanis, D. Graziotin, and M. Ortu, "Mining valence, arousal, and dominance: Possibilities for detecting burnout and productivity?" in Proceedings of the 13th International Conference on Mining Software Repositories, ser. MSR '16. New York, NY, USA: ACM, 2016, pp. 247–258. https://doi.org/10.1145/2901739.2901752
	  - F. Calefato, F. Lanubile, F. Maiorano, N. Novielli, "Sentiment Polarity Detection for Software Development". Empirical Software Engineering (2018) https://doi.org/10.1007/s10664-017-9546-9
	  - R. Jongeling, S. Datta, A. Serebrenik, "On negative results when using sentiment analysis tools for software engineering research," in Empirical Software Engineering (2017) https://doi:10.1007/s10664-016-9493-x

	- N. Novielli, F. Calefato, D. Dongiovanni, D. Girardi, F. Lanubile. "Can We Use SE-specific Sentiment Analysis Tools in a Cross-Platform Setting?". In Proceedings of the 17th International Conference on Mining Software Repositories (MSR '20), October 5-6, 2020 – DOI: https://doi.org/10.1145/3379597.3387446 *Tutorials* - C. Potts, Sentiment Symposium Tutorial Available: http://sentiment.christopherpotts.net/lingstruc.html)
Notes	Bibliography will be integrated with the slides available on the ADA platform.
Teaching methods	Lectures and tutorials supported by slides and demos.
Assessment methods	*Oral assessment*: - presentations of recent research papers selected by the lecturer (for students regularly attending the course) - oral test, including questions about the course program (for students not regularly attending the course)
Evaluation criteria (Explain for each expected learning outcome what a student has to know, or is able to do, and how many levels of achievement there are.	The students should know the concepts presented and discussed during classes and be familiar with the tools introduced in the tutorials and lab sessions.
Further information	---