

Federico RUGGERI

PERSONAL DATA

CITIZENSHIP: Italian
AFFILIATION: DISI, University of Bologna, Italy
ADDRESS: Viale del Risorgimento, 2, 40136, Bologna (BO), Italy
INSTITUTIONAL EMAIL: federico.ruggeri6@unibo.it
ORCID: [0000-0002-1697-8586](https://orcid.org/0000-0002-1697-8586)
INSTITUTIONAL WEBSITE: <https://www.unibo.it/sitoweb/federico.ruggeri6/en>
RESEARCH GROUP WEBSITE: <https://site.unibo.it/nlp/en>
RESEARCH GROUP GITHUB: <https://github.com/lt-nlp-lab-unibo>

SHORT BIO

My main research area is integrating unstructured knowledge into deep learning models. I'm currently focusing on Natural Language Processing (NLP) and Argument Mining, a branch of NLP that aims at extracting arguments from unstructured texts.

I obtained my PhD from the University of Bologna in 2022 with the thesis "*Towards Integrating Unstructured Knowledge in Natural Language Processing*". During my PhD I've defined the notion of Unstructured Knowledge Integration (UKI) and investigated its applications in the fields of Legal Analytics and Argument Mining.

I currently hold the position of Post-doc Research Fellow at the Computer Science and Engineering Department (DISI) of the University of Bologna. I'm part of the AI4Europe project on the development of horizontal matchmaking services that allow users to automatically retrieve AI assets like scientific papers, experts' profiles, and educational resources. I'm currently focusing on knowledge extraction and Neuro-symbolic research areas for UKI.

HIGHLIGHTS

Education	PhD in Computer Science & Engineering; 2-year Post-doc Research fellow
Reference	Section Academic Experience Section(s) Education
Teaching	180 cumulative hours as Teaching Assistant (TA) in two master degree courses; Lecturer to PhD students (10 hours).
Reference(s)	Section Teaching
Projects	Involved in four international projects and three national projects.
Reference(s)	Section International Projects Section National Projects
International Experience	Visiting researcher at Open University (England) and UKP Lab (Darmstadt)
Reference(s)	Section International Experience
Scientific production	Author or co-author of 26 publications
WoS and Scopus	84 citations; h-index 5
Google Scholar	156 citations; h-index 6
Journals	3 Scimago Q1 International Journals

Conferences Workshops Reference(s)	2 GGS A++; 1 GGS A+; 2 GGS A; 1 GGS A-; 2 GGS B-; 2 GGS C 9 publications Section Bibliometric Indexes Section Selected Publications for Analytical Research Evaluation Section Other Publications
SOFTWARE PRODUCTS Reference(s)	cinnamon Python library Section Software Products

ACADEMIC EXPERIENCE

Current Project Supervisor(s) Description	Post-doc Research Fellow at University of Bologna AI4EU Project <i>Prof. Paolo Torrioni, Prof. Michela Milano</i> I'm developing horizontal matchmaking solutions for ranking textual sources. These solutions should be compliant with AI-on-demand online services. Critical requirements concern textual sources maintenance.
2021-2022 Project Supervisor(s) Description	Post-doc Research Fellow at University of Bologna StairwAI ICT-49 Project <i>Prof. Paolo Torrioni, Prof. Michela Milano</i> My research fellowship is centered on developing NLP solutions for large-scale heterogeneous document matching. In particular, I've researched strategies for combining unstructured knowledge (e.g., textual documents, researcher profiles, user requests) and ontology knowledge graphs.
2021 Project Supervisor(s) Description	External Research Collaborator with University of Modena and Reggio Emilia FISR-COVID 2020 AMICA Project <i>Prof. Marco Lippi</i> I've developed a ranking system for scientific literature based on Argument Mining features.
2018-2021 Curriculum Supervisor(s) Description	PhD student at University of Bologna <i>Computer science and Engineering</i> <i>Prof. Paolo Torrioni, Prof. Marco Lippi</i> I've defined the concept of unstructured Knowledge Integration (UKI) in NLP: the task of integrating textual knowledge into deep learning models. I developed solutions for application fields like Legal Analytics and Argument Mining. UKI requires advanced language understanding techniques and is subject to tight requirements like model transparency and interpretability. To address these issues, I've researched scalable and efficient data-driven neuro-symbolic solutions. I took inspiration from several research fields, including Reinforcement Learning, Active Learning, and Informed Machine Learning.
APR-OCT 2018 Project Supervisor(s) Description	Research Scholarship in collaboration with Magneti Marelli <i>Anomaly detection in the automotive research field</i> <i>Prof. Paolo Torrioni, Prof. Marco Lippi</i> I developed anomaly detection solutions based on forecasting neural networks and encoder-decoder architectures.

TEACHING

Spring 2023 |

Role	PhD Course Lecturer
Course	<i>Robust and Reproducible Experimental Deep Learning Setting</i>
Info	2 CFUs, 10 hours
Student Rating	87.60%
2022-2023	
Role	Teaching Assistant
Course	91258 - <i>Natural Language Processing</i>
Supervisor	Prof. Paolo Torrioni
Info	6 CFUs, 40 hours
Curriculum	Master degree in Artificial Intelligence, University of Bologna, Italy
Role	Teaching Assistant
Course	91251 - <i>Languages and Algorithms for Artificial Intelligence Module 1</i>
Supervisor	Prof. Simone Martini
Info	12 CFUs, 20 hours
Curriculum	Master degree in Artificial Intelligence, University of Bologna, Italy
2021-2022	
Role	Teaching Assistant
Course	91258 - <i>Natural Language Processing</i>
Supervisor	Prof. Paolo Torrioni
Info	6 CFUs, 40 hours
Curriculum	Master degree in Artificial Intelligence, University of Bologna, Italy
Role	Teaching Assistant
Course	91251 - <i>Languages and Algorithms for Artificial Intelligence Module 1</i>
Supervisor	Prof. Simone Martini
Info	12 CFUs, 20 hours
Curriculum	Master degree in Artificial Intelligence, University of Bologna, Italy
2020-2021	
Role	Teaching Assistant
Course	91258 - <i>Natural Language Processing</i>
Supervisor	Prof. Paolo Torrioni
Info	6 CFUs, 40 hours
Curriculum	Master degree in Artificial Intelligence, University of Bologna, Italy

EDUCATION

2022	
Type	PhD Defense
Title	<i>Towards Unstructured Knowledge Integration in Natural Language Processing</i>
Curriculum	<i>Computer Science and Engineering</i>
Supervisor(s)	<i>Prof. Paolo Torrioni, Prof. Marco Lippi</i>
Evaluation	<i>5/5, Excellence</i>

Description	In this thesis, I analyze the methodology of integrating knowledge into deep learning models in the field of Natural Language Processing (NLP). I introduce Unstructured Knowledge Integration (UKI) as the process of integrating unstructured knowledge into machine learning models. I discuss UKI in the field of NLP, where knowledge is represented in a natural language format. UKI is a complex process comprised of multiple sub-processes, different knowledge types, and knowledge integration properties to guarantee. I propose a unified vision of structured knowledge extraction (KE) and UKI by identifying KE as a sub-process of UKI. KE is viewed as a form of symbolic representation. From this perspective, I remark on the need to define sophisticated UKI processes to verify the validity of knowledge integration. To this end, I advocate for frameworks capable of combining symbolic and sub-symbolic representations for learning as a solution.
2019	
Type	Summer School , Certosa di Pontignano, Siena
Theme	<i>2nd Advanced Course on Data Science & Machine Learning</i>
Description	The course is a full-immersion five-day residential Course at the Certosa di Pontignano (Siena - Tuscany, Italy) on cutting-edge advances in Data Science and Machine Learning with lectures delivered by world-renowned experts.
Info	8 CFUs, 7 days.
Type	Summer School , University of Lille, Lille
Theme	<i>Reinforcement Learning Summer SCHOOL (RLSS)</i>
Description	Two full weeks to discover the theory and practice of sequential decision making: reinforcement learning introduction, multi-armed bandits and deep RL.
Info	8 CFUs, 15 days.
Type	Summer School , University of Genova, Genova
Theme	<i>Machine Learning Crash Course (MLCC)</i>
Description	The course provides an introduction to the fundamental methods at the core of modern Machine Learning. It covers theoretical foundations as well as essential algorithms. Classes on theoretical and algorithmic aspects are complemented by practical lab sessions.
Info	2 CFUs, 5 days.
2018	
Type	Summer School , University of Ferrara, Ferrara
Theme	<i>School is Statistical Relational Artificial Intelligence (StarAI)</i>
Description	Relational AI deals very effectively with complex domains involving many and even a varying number of entities connected by complex relationships, while statistical AI manages well the uncertainty that derives from incomplete and noisy descriptions of the domains.
Type	Master Degree in Computer Engineering
Title	110/110 <i>summa cum laude</i> , University of Bologna, Bologna
Supervisor(s)	<i>Argument structure prediction with stance classification features</i> Prof. Paolo Torroni, Prof. Marco Lippi
2015	
Type	Bachelor Degree in Computer Engineering
Title	University of Bologna, Bologna <i>Monitoring, alerting and resource management of cloud applications based on Docker</i>
Supervisor(s)	Prof. Paolo Bellavista

INTERNATIONAL PROJECTS

CURRENT	H2020-ICT-2018-825619-AI4EU <i>A European AI On Demand Platform and Ecosystem</i>
---------	--

Reference	https://cordis.europa.eu/project/id/825619
Description	The EU-funded AI4EU is working to change Europe's place in this race, by building the first European AI On-Demand Platform and Ecosystem that will share resources, tools, knowledge, algorithms and more between Member States. It will help to increase innovation and technology transfer; accelerate the growth of start-ups and SMEs, and fulfill the needs of the European AI community. The project will implement eight pilots led by industrial partners to demonstrate the platform's capabilities.
Role	Developing horizontal matchmaking solutions for AI resources. These solutions should be compliant with AI-on-demand online services.
2022 - 2023	H2020-ICT-2020-101017142-StairwAI <i>Stairway to AI: Ease the Engagement of Low-Tech users to the AI-on-Demand platform through AI</i>
Reference	https://cordis.europa.eu/project/id/101017142
Description	The StairwAI project targets low-tech users with the goal of facilitating their engagement on the AI4EU on-demand Platform. This will be achieved through a new service layer enriching the functionalities of the on-demand platform and containing: (1) a multi-lingual interaction layer enabling conversations with the Platform in the user's own language, (2) a horizontal matchmaking service for the automatic discovery of AI assets (tools, data sets, AI experts, consultants, papers, courses etc.) meeting the user business needs and, (3) a vertical matchmaking service that will dimension and provision hardware resources through a proper hardware provider (HPC, Cloud and Edge infrastructures).
Role	Developed several NLP solutions for AI assets, such as scientific papers and experts' profile, horizontal matchmaking (work package 5). The developed solutions are compliant with the project's ontology regarding AI terminology. The ontology was used to map input textual queries to AI assets to eventually perform the matchmaking. Moreover, I also participated in the work package 7 "Open Call Management" as a technical mentor. In particular, I collaborated with several companies in supervising their prototype AI projects (6-8 months development time).
2021-2023	JUST-JACC-EJU-AG-2020-1010074206-Adele <i>Analytics for DEcision of LEgal cases</i>
Reference	https://site.unibo.it/adele/en
Description	Project ADELE is premised on the ongoing paradigm shift towards cognitive computing and human-centered AI which is transforming many socio-economic activities, including justice. The project applies legal analytics (LA) – a blend of data science, machine learning, and natural language processing techniques – to judicial decisions. It aims to develop methods to extract knowledge and engage in outcome predictions and there build a pilot tool to support legal research and decision-making processes in the judiciary.
Role	I worked on two main problems: legal outcome prediction and argument mining. In particular, I collaborated in building new corpora and AI solutions, and I actively supervised interns and research fellows on the project.
2019-2022	CLAUDETTE <i>automated CLAUse DETectEr</i>
Reference	http://claudette.eui.eu/
Description	CLAUDETTE is an interdisciplinary research project hosted at the Law Department of the European University Institute. The research objective is to test to what extent is it possible to automate reading and legal assessment of online consumer contracts and privacy policies, to evaluate their compliance with EU's unfair contractual terms law and personal data protection law (GDPR), using machine learning and grammar-based approaches.
Role	I'm involved in the development of NLP solutions for legal text classification. I focused on integrating legal expertise as unstructured textual knowledge into deep learning model to develop interpretable AI solutions.

NATIONAL PROJECTS

2024 | BI-REX
| *AI-based Smart Collaborative Manufacturing System (SmartCasm)*

Reference Description	https://bi-rex.it/quarto-bando-bi-rex/ The project involves using LLMs for integrating unstructured knowledge into industrial pipelines to speed up production and foster technical advancement.
Role	I will be the principal technical investigator to develop LLMs-based solution for unstructured knowledge integration.
2022 - CURRENT	PRIN2017NCPZ22 LAILA <i>Legal Analytics for Italian Law</i>
Reference	https://dsg.unibo.it/it/ricerca/progetti-di-ricerca/progetti-nazionali-e-di-ateneo/prin2017-laila-legal-analytics-for-italian-law
Description	The project regards the application of Legal Analytics methods to a vast and heterogeneous set of legal information: legislations, contracts, and judgments. The purpose is the application of Artificial Intelligence, Machine Learning, and Natural Language Processing to extract legal knowledge, infer relationships, and produce data-driven forecasts.
Role	I actively collaborated in developing NLP solutions for legal analytics, supervised research interns and coordinated with the team of legal experts.
2021	FISR2020IP_01362 AMICA <i>Argument Mining In Covid-19 Articles</i>
Reference Description	http://amica.unimore.it/ The objective of the AMICA project was to exploit the argumentative content present in the scientific literature regarding Covid-19 to improve the retrieval of relevant and reliable articles. The project involved both medical and artificial intelligence experts and aimed to develop an argument mining-based search engine, specifically designed for the analysis of scientific literature related to Covid-19.
Role	I contributed in developing NLP solutions and supervising a post-graduate student.

INTERNATIONAL EXPERIENCE

FEB-JULY 2021 Location Supervisor(s) Description	Research internship at Ubiquitous Knowledge Processing (UKP) Lab Darmstadt, Germany <i>Prof. Mohsen Mesgar, Prof. Iryna Gurevych</i> My internship project concerned the development of AI dialogue argumentative chatbots on scientific literature. I developed a custom online platform for human dialogue collection. The collected data was used to investigate the impact of arguments in scientific papers to boost the capabilities of a dialogue agent.
APRIL 2019 Location Supervisor(s) Description	Research Short-Term Scientific Mission (STSM) Open University, Milton Keynes, England <i>Prof. Anna de Liddo</i> The aim of the scientific mission is to explore the possibility of integration of three technologies under development in the domain of computer-supported reflection and deliberation systems from three APPLY COST network institutions: the Open University (host institution), the University of Bologna (applicant's institution), and the Universidade Nova in Lisbon (Institution coordinating the APPLY COST action). The desired outcome of this Short-Term Scientific Missions (STSM) is a draft workplan leading to a focused pilot initiative in the context of the APPLY network, aiming to demonstrate the potential of innovative technologies in facilitating the policy debate through computer-aided reflection and deliberation systems.

PROGRAM CHAIR & ORGANIZATION COMMITTEES

SEPT 2023 | CheckThat! Lab 2023, International Workshop on Fact-Checking

Venue	Co-located with CLEF 2023, Conference and Labs of the Evaluation Forum
Role	<i>Co-chair</i>
Location	Thessaloniki, Greece
SEP 2022	CheckThat! Lab 2022, International Workshop on Fact-Checking
Venue	Co-located with CLEF 2022, Conference and Labs of the Evaluation Forum
Role	<i>Local Organizer</i>
Location	Bologna, Italy

INVITED SPEAKER

2023	
Venue	Alan Turing Institute, London
Title	Combining Transformers with Natural Language Explanations
Venue	Neurosymbolic Workshop (NeSY), Certosa di Pontignano, Siena
Title	Challenges for Neuro-Symbolic Approaches: Case Study on Legal Analytics and Argument Mining

PRESENTATIONS

2023	
Title	A dataset of argumentative dialogues on scientific papers.
Reference	[5]
Location	Toronto, Canada.
Title	On the definition of prescriptive annotation guidelines for language-agnostic subjectivity detection.
Reference	[4]
Location	Dublin, Ireland (Online).
2019	
Title	Deep learning for detecting and explaining unfairness in consumer contracts.
Reference	[14]
Location	Madrid, Spain (Online).

PEER REVIEWING

PC MEMBER	ACL (2019, 2021, 2023), ArgMining (2022)
REVIEWER	Computer Science, IEEE Access, IEEE ICTAI, Artificial Intelligence and Law, ACM Computing Surveys, NLLP, AAAI, ACL, EAACL, IJCAI, PAIS ECAI, COLING, ArgMining, COMMA

BIBLIOMETRIC INDEXES

SOURCE	IRIS-CINECA catalog (WoS and Scopus)
Citations	84
h-index	5
SOURCE	Google Scholar
Citations	156
h-index	6

SELECTED PUBLICATIONS FOR ANALYTICAL RESEARCH EVALUATION

Principal investigator or equal contribution entries are highlighted in **bold**.

- [S1] Francesco Antici, Andrea Galassi, Federico Ruggeri, Katerina Korre, Arianna Muti, Alessandra Bardi, Alice Fedotova, and Alberto Barrón-Cedeño. A corpus for sentence-level subjectivity detection on english news articles. In *The 2024 Joint International Conference on Computational Linguistics, Language Resources and Evaluation 2024 (COLING-LREC), Online and in Turin, Italy, May 20-25, 2024*, 2024. **In press. GGS Rating: A.**
- [S2] Eleonora Mancini, Andrea Galassi, Federico Ruggeri, and Paolo Torroni. Disruptive situation detection on public transport through speech emotion recognition. *Intelligent Systems with Applications*, 21:200305, 2024. **Scimago Quartile: Q1.**
- [S3] Eleonora Mancini, Federico Ruggeri, and Paolo Torroni. Multimodal fallacy classification in political debates. In Gabriella Lapesa, Jodi Schneider, Yohan Jo, and Sougata Saha, editors, *Proceedings of the 18th Conference of the European Chapter of the Association for Computational Linguistics (EACL) 2024, Online and in Malta, March 17-22, 2024*. Association for Computational Linguistics, 2024. **In press. GGS Rating: A+.**
- [S4] Arianna Muti, Federico Ruggeri, Cagri Toraman, Alberto Barrón-Cedeño, Samuel Algherini, Lorenzo Musetti, Silvia Ronchi, Gianmarco Saretto, and Caterina Zapparoli. Pejorativity: Disambiguating pejorative epithets to improve misogyny detection in italian tweets. In *The 2024 Joint International Conference on Computational Linguistics, Language Resources and Evaluation 2024 (COLING-LREC), Online and in Turin, Italy, May 20-25, 2024*, 2024. **In press. GGS Rating: A.**
- [S5] **Federico Ruggeri**, Mohsen Mesgar, and Iryna Gurevych. A dataset of argumentative dialogues on scientific papers. In Anna Rogers, Jordan Boyd-Graber, and Naoaki Okazaki, editors, *Proceedings of the 61st Annual Meeting of the Association for Computational Linguistics (Volume 1: Long Papers)*, pages 7684–7699, Toronto, Canada, July 2023. Association for Computational Linguistics. **Principal Investigator. GGS Rating: A++.**
- [S6] Alberto Barrón-Cedeño, Firoj Alam, Tommaso Caselli, Giovanni Da San Martino, Tamer Elsayed, Andrea Galassi, Fatima Haouari, Federico Ruggeri, Julia Maria Struß, Rabintra Nath Nandi, Gullal S. Cheema, Dilshod Azizov, and Preslav Nakov. The clef-2023 checkthat! lab: Checkworthiness, subjectivity, political bias, factuality, and authority. In Jaap Kamps, Lorraine Goeuriot, Fabio Crestani, Maria Maistro, Hideo Joho, Brian Davis, Cathal Gurrin, Udo Kruschwitz, and Annalina Caputo, editors, *Advances in Information Retrieval*, pages 506–517, Cham, 2023. Springer Nature Switzerland. **GGs Rating: A-.**
- [S7] Piera Santin, Giulia Grundler, Andrea Galassi, Federico Galli, Francesca Lagioia, Elena Palmieri, Federico Ruggeri, Giovanni Sartor, and Paolo Torroni. Argumentation structure prediction in cjeu decisions on fiscal state aid. In *Proceedings of the Nineteenth International Conference on Artificial Intelligence and Law, ICAIL '23*, page 247–256, New York, NY, USA, 2023. Association for Computing Machinery. **GGs Rating: B-.**

- [S8] Gianfranco Brambilla, Antonella Rosi, Francesco Antici, Andrea Galassi, Daniele Giansanti, Fabio Magurano, Federico Ruggeri, Paolo Torroni, Evaristo Cisbani, and Marco Lippi. Argument mining as rapid screening tool of covid-19 literature quality: Preliminary evidence. *Frontiers in Public Health*, 10, 2022. **Scimago Quartile: Q1**.
- [S9] Marco Lippi, Francesco Antici, Gianfranco Brambilla, Evaristo Cisbani, Andrea Galassi, Daniele Giansanti, Fabio Magurano, Antonella Rosi, Federico Ruggeri, and Paolo Torroni. AMICA: an argumentative search engine for COVID-19 literature. In Luc De Raedt, editor, *Proceedings of the Thirty-First International Joint Conference on Artificial Intelligence, IJCAI 2022, Vienna, Austria, 23-29 July 2022*, pages 5932–5935. ijcai.org, 2022. **CCS Rating: A++**.
- [S10] Mattia Silvestri, Allegra De Filippo, Federico Ruggeri, and Michele Lombardi. Hybrid offline/online optimization for energy management via reinforcement learning. In Pierre Schaus, editor, *Integration of Constraint Programming, Artificial Intelligence, and Operations Research - 19th International Conference, CPAIOR 2022, Los Angeles, CA, USA, June 20-23, 2022, Proceedings*, volume 13292 of *Lecture Notes in Computer Science*, pages 358–373. Springer, 2022. **CCS Rating: B-**.
- [S11] **Federico Ruggeri**. *Towards Unstructured Knowledge Integration in Natural Language Processing*. PhD thesis, alma, Giugno 2022.
- [S12] **Federico Ruggeri**, Francesca Lagioia, Marco Lippi, and Paolo Torroni. Detecting and explaining unfairness in consumer contracts through memory networks. *Artif. Intell. Law*, 30(1):59–92, 2022. **Principal Investigator. Scimago Quartile: Q1**.

OTHER PUBLICATIONS

First author or equivalent contribution entries are highlighted in **bold**.

- [1] Alberto Barrón-Cedeño, Firoj Alam, Andrea Galassi, Giovanni Da San Martino, Preslav Nakov, Tamer Elsayed, Dilshod Azizov, Tommaso Caselli, Gullal S. Cheema, Fatima Haouari, Maram Hasanain, Mücahid Kutlu, Chengkai Li, Federico Ruggeri, Julia Maria Struß, and Wajdi Zaghouni. Overview of the CLEF-2023 checkthat! lab on checkworthiness, subjectivity, political bias, factuality, and authority of news articles and their source. In Avi Arampatzis, Evangelos Kanoulas, Theodora Tsikrika, Stefanos Vrochidis, Anastasia Giachanou, Dan Li, Mohammad Aliannejadi, Michalis Vlachos, Guglielmo Faggioli, and Nicola Ferro, editors, *Experimental IR Meets Multilinguality, Multimodality, and Interaction - 14th International Conference of the CLEF Association, CLEF 2023, Thessaloniki, Greece, September 18-21, 2023, Proceedings*, volume 14163 of *Lecture Notes in Computer Science*, pages 251–275. Springer, 2023.
- [2] Andrea Galassi, Federico Ruggeri, Alberto Barrón-Cedeño, Firoj Alam, Tommaso Caselli, Mücahid Kutlu, Julia Maria Struß, Francesco Antici, Maram Hasanain, Juliane Köhler, Katerina Korre, Folkert Leistra, Arianna Muti, Melanie Siegel, Mehmet Deniz Türkmen, Michael Wiegand, and Wajdi Zaghouni. Overview of the CLEF-2023 checkthat! lab: Task 2 on subjectivity detection. In Mohammad Aliannejadi, Guglielmo Faggioli, Nicola Ferro, and Michalis Vlachos, editors, *Working Notes of the Conference and Labs of the Evaluation Forum (CLEF 2023), Thessaloniki, Greece, September 18th to 21st, 2023*, volume 3497 of *CEUR Workshop Proceedings*, pages 236–249. CEUR-WS.org, 2023.
- [3] Mirko Del Moro, Serban Cristian Tudosie, Francesco Vannoni, Andrea Galassi, and Federico Ruggeri. Inception models for fashion image captioning: An extensive study on multiple datasets. In Avi Arampatzis, Evangelos Kanoulas, Theodora Tsikrika, Stefanos Vrochidis, Anastasia Giachanou, Dan Li, Mohammad Aliannejadi, Michalis Vlachos, Guglielmo Faggioli, and Nicola Ferro, editors, *Experimental IR Meets Multilinguality, Multimodality, and Interaction - 14th International Conference of the CLEF Association, CLEF 2023, Thessaloniki, Greece, September 18-21, 2023, Proceedings*, volume 14163 of *Lecture Notes in Computer Science*, pages 3–14. Springer, 2023.

- [4] **Federico Ruggeri**, Francesco Antici, Andrea Galassi, Katerina Korre, Arianna Muti, and Alberto Barrón-Cedeño. On the definition of prescriptive annotation guidelines for language-agnostic subjectivity detection. In Ricardo Campos, Alípio Mário Jorge, Adam Jatowt, Sumit Bhatia, and Marina Litvak, editors, *Proceedings of Text2Story - Sixth Workshop on Narrative Extraction From Texts held in conjunction with the 45th European Conference on Information Retrieval (ECIR 2023)*, Dublin, Ireland, April 2, 2023, volume 3370 of *CEUR Workshop Proceedings*, pages 103–111. CEUR-WS.org, 2023.
- [5] Sezen Perçin, Andrea Galassi, Francesca Lagioia, Federico Ruggeri, Piera Santin, Giovanni Sartor, and Paolo Torrioni. Combining WordNet and word embeddings in data augmentation for legal texts. In *Proceedings of the Natural Legal Language Processing Workshop 2022*, pages 47–52, Abu Dhabi, United Arab Emirates (Hybrid), December 2022. Association for Computational Linguistics.
- [6] Pavlo Seroyzhko, Zhanel Zhexenova, Muhammad Zohaib Shafiq, Fabio Merizzi, Andrea Galassi, and Federico Ruggeri. A sentiment and emotion annotated dataset for bitcoin price forecasting based on Reddit posts. In *Proceedings of the Fourth Workshop on Financial Technology and Natural Language Processing (FinNLP)*, pages 203–210, Abu Dhabi, United Arab Emirates (Hybrid), December 2022. Association for Computational Linguistics.
- [7] Federico Galli, Giulia Grundler, Alessia Fidelangeli, Andrea Galassi, Francesca Lagioia, Elena Palmieri, Federico Ruggeri, Giovanni Sartor, and Paolo Torrioni. Predicting outcomes of Italian VAT decisions. In Enrico Francesconi, Georg Borges, and Christoph Sorge, editors, *Legal Knowledge and Information Systems - JURIX 2022: The Thirty-fifth Annual Conference, Saarbrücken, Germany, 14-16 December 2022*, volume 362 of *Frontiers in Artificial Intelligence and Applications*, pages 188–193. IOS Press, 2022. **GGG Rating: C**.
- [8] Giulia Grundler, Piera Santin, Andrea Galassi, Federico Galli, Francesco Godano, Francesca Lagioia, Elena Palmieri, Federico Ruggeri, Giovanni Sartor, and Paolo Torrioni. Detecting arguments in CJEU decisions on fiscal state aid. In Gabriella Lapesa, Jodi Schneider, Yohan Jo, and Sougata Saha, editors, *Proceedings of the 9th Workshop on Argument Mining, ArgMining@COLING 2022, Online and in Gyeongju, Republic of Korea, October 12 - 17, 2022*, pages 143–157. International Conference on Computational Linguistics, 2022.
- [9] Eleonora Mancini, **Federico Ruggeri**, Andrea Galassi, and Paolo Torrioni. Multimodal argument mining: A case study in political debates. In Gabriella Lapesa, Jodi Schneider, Yohan Jo, and Sougata Saha, editors, *Proceedings of the 9th Workshop on Argument Mining, ArgMining@COLING 2022, Online and in Gyeongju, Republic of Korea, October 12 - 17, 2022*, pages 158–170. International Conference on Computational Linguistics, 2022.
- [10] Francesco Antici, Luca Bolognini, Matteo Antonio Inajetovic, Bogdan Ivasiuk, Andrea Galassi, and Federico Ruggeri. Subjectivita: An Italian corpus for subjectivity detection in newspapers. In K. Selçuk Candan, Bogdan Ionescu, Lorraine Goeriot, Birger Larsen, Henning Müller, Alexis Joly, Maria Maistro, Florina Piroi, Guglielmo Faggioli, and Nicola Ferro, editors, *Experimental IR Meets Multilinguality, Multimodality, and Interaction - 12th International Conference of the CLEF Association, CLEF 2021, Virtual Event, September 21-24, 2021, Proceedings*, volume 12880 of *Lecture Notes in Computer Science*, pages 40–52. Springer, 2021.
- [11] **Federico Ruggeri**, Marco Lippi, and Paolo Torrioni. Membert: Injecting unstructured knowledge into BERT. *CoRR*, abs/2110.00125, 2021.
- [12] **Federico Ruggeri**, Marco Lippi, and Paolo Torrioni. Tree-constrained graph neural networks for argument mining. *CoRR*, abs/2110.00124, 2021.
- [13] Ruta Liepina, **Federico Ruggeri**, Francesca Lagioia, Marco Lippi, Kasper Drazewski, and Paolo Torrioni. Explaining potentially unfair clauses to the consumer with the CLAUDETTE tool. In Nikolaos Aletras, Ion Androutsopoulos, Leslie Barrett, Adam Meyers, and Daniel Preotiuc-Pietro, editors, *Proceedings of the Natural Legal Language Processing Workshop*

2020 co-located with the 26th ACM SIGKDD International Conference on Knowledge Discovery & Data Mining (KDD 2020), Virtual Workshop, August 24, 2020, volume 2645 of CEUR Workshop Proceedings, pages 61–64. CEUR-WS.org, 2020. **GGG Rating: C.**

- [14] Francesca Lagioia, **Federico Ruggeri**, Kasper Drazewski, Marco Lippi, Hans-Wolfgang Micklitz, Paolo Torroni, and Giovanni Sartor. Deep learning for detecting and explaining unfairness in consumer contracts. In Michal Araszkiwicz and Víctor Rodríguez-Doncel, editors, *Legal Knowledge and Information Systems - JURIX 2019: The Thirty-second Annual Conference, Madrid, Spain, December 11-13, 2019*, volume 322 of *Frontiers in Artificial Intelligence and Applications*, pages 43–52. IOS Press, 2019.

SOFTWARE PRODUCTS

Python Library Suite	<i>cinnamon</i>
Description	Cinnamon is a simple framework for general-purpose configuration and code logic decoupling. It was developed to offer two main functionalities: De-coupling a code logic from its regulating parameters; Re-use of code logic without effort
Role	Creator, Principal Maintainer.
Github	https://github.com/lt-nlp-lab-unibo/cinnamon
Python Library	<i>cinnamon-core</i>
Description	Core package of cinnamon. This package defines all main functionalities regarding component and configuration registration.
Role	Creator, Principal Maintainer.
Github	https://github.com/lt-nlp-lab-unibo/cinnamon_core
Python Library	<i>cinnamon-generic</i>
Description	The generic package offers several Component and related Configuration for machine-learning. Additionally, it provides the first set of commands: high-level APIs for speeding up cinnamon registration.
Role	Creator, Principal Maintainer.
Github	https://github.com/lt-nlp-lab-unibo/cinnamon_generic
Python Library	<i>cinnamon-th</i>
Description	The torch package offers Component and related Configuration that rely on the PyTorch library.
Role	Creator, Principal Maintainer.
Github	https://github.com/lt-nlp-lab-unibo/cinnamon_th
Python Library	<i>cinnamon-tf</i>
Description	The tensorflow package offers Component and related Configuration that rely on the Tensorflow library.
Role	Creator, Principal Maintainer.
Github	https://github.com/lt-nlp-lab-unibo/cinnamon_tf
Python Library	<i>cinnamon-tf</i>
Description	The tensorflow package offers Component and related Configuration that rely on the Tensorflow library.
Role	Creator, Principal Maintainer.
Github	https://github.com/lt-nlp-lab-unibo/cinnamon_tf
Research Repository	
Description	This repository contains the code and resources for the project "Combining Transformers with Natural Language Explanations".
Role	Creator, Principal Maintainer.
Github	https://github.com/lt-nlp-lab-unibo/bert-natural-explanations

Reference [11]

Research Repository

Description This repository contains the code and resources for the project "A Corpus for Sentence-Level Subjectivity Detection on English News Articles".

Role Creator, Co-Maintainer.

Github <https://github.com/lt-nlp-lab-unibo/newssd-eng>

Reference [S1]

Research Repository

Description This repository contains the code and resources for the project "Multimodal Argument Mining: A Case Study in Political Debates".

Role Co-Maintainer.

Github <https://github.com/lt-nlp-lab-unibo/multimodal-am>

Reference [9]

Research Repository

Description This repository contains the code and resources for the project "Multimodal Fallacy Classification in Political Debates".

Role Co-Maintainer.

Github <https://github.com/lt-nlp-lab-unibo/multimodal-am-fallacy>

Reference [S3]

Research Repository

Description This repository contains the code and resources for the project "A Dataset of Argumentative Conversational Discussions on Scientific Papers".

Role Co-Maintainer.

Github <https://github.com/UKPLab/acl2023-argscichat>

Reference [S5]

Course Repository

Description This is the official repository of the PhD course "Robust and Reproducible Experimental Deep Learning Setting".

Role Co-Maintainer.

Github <https://github.com/federicoruggeri/phdlectures-rredls>

LANGUAGES

ITALIAN: Mothertongue

ENGLISH: Advanced, C1

IELTS, British Council, 30 June 2018

Score: 7.5/9