Alejandro Moreo

Curriculum Vitae

June 9, 2025

PhD, Senior Researcher ("Primo Ricercatore")
Institute of Information Science and Technology,
Italian National Research Council (ISTI-CNR),
Pisa, Italy.

Born in 1985, in Granada, Spain. Spanish citizenship.

Previous Contracts

- Senior Researcher (*"Primo Ricercatore"*) at ISTI-CNR, Pisa, since Jan 2023.
- Tenured Researcher (*"Tempo Indeterminato"*) at ISTI-CNR, Pisa, Dec 2018–Jan 2023.
- Research Contract (*"Tempo Determinato"* Art.23) at ISTI-CNR, Pisa, Nov 2017–Nov 2018.
- Research Scholarship (*"Assegno di Ricerca"*) at ISTI-CNR, Pisa, Jan 2014–Oct 2017.

Education

- PhD in Computer Sciences and Information Technologies (10/10 cum laude), University of Granada, 2013.
- Master Degree in Soft Computing and Intelligent Systems (with honours), University of Granada, 2010.
- Bachelor's degree in Computer Engineering (3.037/4 and 21 honours), University of Granada, 2008.

Publications

Source	journal papers	conference papers	books	book chapters	h-index	i10-index	citations
Google Scholar[1]	32	25	1	1	19	30	1283

Journals (32 items)

- Lorenzo Volpi, Alejandro Moreo, Fabrizio Sebastiani. *QuAcc: Using Quantification to Predict Classifier Accuracy Under Prior Probability Shift.* **Intelligenza Artificiale**, 2025. `doi: 10.1177/17248035251338347`
- Alejandro Moreo, Pablo González, Juan José del Coz. *Kernel Density Estimation for Multiclass Quantification.* **Machine Learning journal**, vol 114, no 92, 2025. DOI `https://doi.org/10.1007/s10994-024-06726-5`

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[1] `https://scholar.google.es/citations?user=4RIy5E4AAAAJ&hl=en`

- Washington Cunha, Alejandro Moreo, Andrea Esuli, Fabrizio Sebastiani, Leonardo Rocha, Marcos André Gonçalves. *A Noise-Oriented and Redundancy-Aware Instance Selection Framework* **ACM Transactions on Information Systems**, vol 43, issue 2, no 45, pp 1-33, 2025. DOI https://doi.org/10.1145/3705000

- Olaya Pérez-Mon, Alejandro Moreo, Juan José del Coz, Pablo González. *Quantification using Permutation-Invariant Networks based on Histograms.* **Neural Computing and Applications**, vol 37, pp. 3505–3520, 2025. DOI 10.1007/s00521-024-10721-1

- Mattia Setzu, Silvia Corbara, Anna Monreale, Alejandro Moreo, Fabrizio Sebastiani. *Explainable Authorship Identification in Cultural Heritage Applications.* **ACM Journal of Computing and Cultural Heritage**, vol 17, issue 3, no 44, pp 1-23, DOI 10.1145/3654675, 2024

- Pablo González, Alejandro Moreo, Fabrizio Sebastiani. *Binary Quantification and Dataset Shift: An Experimental Investigation* **Data Mining and Knowledge Discovery**, "Just Accepted", DOI 10.1007/s10618-024-01014-1, 2024 (preprint available: arXiv:2310.04565)

- Mirko Bunse, Alejandro Moreo, Fabrizio Sebastiani, Martin Senz. *Regularization-based methods for ordinal quantification* **Data Mining and Knowledge Discovery**, vol 38, issue 6, pp 4076-4121, 2024

- Silvia Corbara, Alejandro Moreo, Fabrizio Sebastiani. *Same or Different? Diff-Vectors for Authorship Analysis.* **ACM Transactions on Knowledge Discovery from Data**, vol 18, issue 1, no 12, pp 1-36, DOI 10.1145/3609226, 2023

- Alejandro Moreo, Manuel Francisco, Fabrizio Sebastiani. *Multi-Label Quantification.* **ACM Transactions on Knowledge Discovery from Data**, vol 18, issue 1, no 4, pp 1-36, DOI 10.1145/3606264, 2023

- Andrea Esuli, Alessandro Fabris, Alejandro Moreo, Fabrizio Sebastiani. *Measuring Fairness under Unawareness of Sensitive Attributes: A Quantification-Based Approach.* **Journal of Artificial Intelligence Research**, vol 76, pp. 1117-1180, DOI 10.1613/jair.1.14033, 2023

- Francesco Banterle, Alessandro Artusi, Alejandro Moreo, Fabio Carrara, Paolo Cignoni *NoR-VDPNet++: Real-Time No-Reference Image Quality Metrics*, **IEEE Access**, vol 11, pp. 34544-34553, DOI 10.1109/ACCESS.2023.3263496, 2023

- Alejandro Moreo, Andrea Pedrotti, and Fabrizio Sebastiani. *Generalized Funnelling: Ensemble Learning and Heterogeneous Document Embeddings for Cross-Lingual Text Classification.* **ACM Transactions on Information Systems**, 41 (2), 1-37, 2023.

- Silvia Corbara, Alejandro Moreo, and Fabrizio Sebastiani, *Syllabic Quantity Patterns as Rhythmic Features for Latin Authorship Attribution* **Journal of the Association for Information Science and Technology.**, 74 (1), 128-141, 2023

- Alejandro Moreo and Fabrizio Sebastiani. *Tweet sentiment quantification: An experimental re-evaluation.* **PLOS ONE 17**, 17 (9), 1-23, 2022

- Silvia Corbara, Alejandro Moreo, Fabrizio Sebastiani, and Mirko Tavoni, *MedLatinEpi and MedLatinLit: Two Datasets for the Computational Authorship Analysis of Medieval Latin Texts* **ACM Journal of Computing and Cultural Heritage**, 16 (3), 1-15 (no. 57), 2022

- Alejandro Moreo, Andrea Esuli, and Fabrizio Sebastiani, *Word-Class Embeddings for Multiclass Text Classification*, **Data Mining and Knowledge Discovery**, 35 (3), 911-963, 2021

- Alejandro Moreo, Andrea Esuli, and Fabrizio Sebastiani, *Lost in Transduction: Transductive Transfer Learning in Text Classification*, **ACM Transactions on Knowledge Discovery from Data**, 16 (1), 1-21, 2021

- Andrea Esuli, Alejandro Moreo, and Fabrizio Sebastiani. *Cross-Lingual Sentiment Quantification.* **IEEE Intelligent Systems.** 35 (3), 106-114, 2020

- Alejandro Moreo, Andrea Esuli, and Fabrizio Sebastiani. *Learning to weight for text classification.* **IEEE Transactions on Knowledge and Data Engineering** 32 (2), pp. 302-316, 2020

- Alessandro Artusi, Francesco Banterle, Fabio Carrara, and Alejandro Moreo, *Efficient Evaluation of Image Quality via Deep-Learning Approximation of Perceptual Metrics* **IEEE Transactions on Image Processing** 29 (1), pp. 1843-1855, 2019

- Andrea Esuli, Alejandro Moreo, and Fabrizio Sebastiani. *Funnelling: A New Ensemble Method for Heterogeneous Transfer Learning and Its Application to Cross-Lingual Text Classification.* **ACM Transactions on Information Systems (TOIS)**, 37 (3), 2019.

- Andrea Esuli, Alejandro Moreo, Fabrizio Sebastiani. *Building automated survey coders via interactive machine learning.* **International Journal of Market Research**, pp. 1-22, 2019.

- Fabio Carrara, Andrea Esuli, Tiziano Fagni, Fabrizio Falchi, Alejandro Moreo. *Picture it in your mind: generating high level visual representations from textual descriptions.* **Information Retrieval Journal**, 21(2–3), pp. 208-229, 2018.

- Alejandro Moreo, Juan Luis Castro, and Jose Manuel Zurita. *Towards portable natural language interfaces based on case-based reasoning.* **Journal of Intelligent Information Systems**, pp. 1-34, 2017.

- Alejandro Moreo, Andrea Esuli and Fabrizio Sebastiani. *Lightweight Random Indexing for Polylingual Text Classification.* **Journal of Artificial Intelligence Research**, volume 57, pp. 151-185, 2016.

- Alejandro Moreo, Andrea Esuli, Fabrizio Sebastiani. *Distributional Correspondence Indexing for Cross-Lingual and Cross-Domain Sentiment Classification.* **Journal of Artificial Intelligence Research**, volume 55, pp. 131-163, 2016.

- Alejandro Moreo, Eduardo Eisman, Juan Luis Castro, and Jose Manuel Zurita. *Learning regular expressions to template-based FAQ retrieval systems.* **Knowledge-Based Systems** 53, pp. 108-128, 2013.

- Manuel Romero, Alejandro Moreo, and Juan Luis Castro. *A cloud of FAQ: A highly-precise FAQ retrieval system for the Web 2.0.* **Knowledge-Based Systems** 49, pp. 81-96, 2013.

- Alejandro Moreo, María Navarro, Juan Luis Castro, and Jose Manuel Zurita. *A high-performance FAQ retrieval method using minimal differentiator expressions.* **Knowledge-Based Systems** 36, pp. 9-20, 2012.

- Alejandro Moreo, Manuel Romero, Juan Luis Castro, and Jose Manuel Zurita. *FAQtory: A framework to provide high-quality FAQ retrieval systems.* **Expert Systems with Applications** 39.14, pp. 11525-11534, 2012.

- Alejandro Moreo, Manuel Romero, Juan Luis Castro, and Jose Manuel Zurita. *Lexicon-based comments-oriented news sentiment analyzer system.* **Expert Systems with Applications** 39.10, pp. 9166-9180, 2012.

- Manuel Romero, Alejandro Moreo, Juan Luis Castro, and Jose Manuel Zurita. *Using Wikipedia concepts and frequency in language to extract key terms from support documents.* **Expert Systems with Applications** 39.18, pp. 13480-13491, 2012.

Books (1 items)

- Andrea Esuli, Alessandro Fabris, Alejandro Moreo, Fabrizio Sebastiani. *Learning to Quantify.* **The Information Retrieval Series**, vol. 47, p. 1-110, ChengXiang Zhai, Maarten de Rijke, ISBN: 978-3-031-20466-1, ISSN: 2949-8066.

Book chapters (1 items)

- Alejandro Moreo, Juan Luis Castro, and Jose Manuel Zurita. *Minimal differentiator expressions: A classification algorithm for linguistic cases in natural language case based systems.* **New Trends on Intelligent Systems and Soft Computing**, ISBN 978-84- 338-5189-5 (v.3), volume 3, 2011, pp. 19-42. Editorial Universidad de Granada.

International conferences (25 items)

- Lorenzo Volpi, Alejandro Moreo, Fabrizio Sebastiani, *A Simple Method for Classifier Accuracy Prediction under Prior Probability Shift.* **The 27th International Conference on Discovery Science**, Pisa, Italy, October 14th to October 16th, 2024. Best SoBigData Paper Runner-up. Lecture Notes in Computer Science, vol 15244. Springer, Cham. pp. 267-283 `https://doi.org/10.1007/978-3-031-78980-9_17`

- Mirko Bunse, Pablo Gonzalez, Alejandro Moreo, Fabrizio Sebastiani, *Report on the 3rd International Workshop on Learning to Quantify (LQ 2023)*, **ACM SIGKDD Explorations**, Vol 25, 2, 2023, pp. 25-28

- Juan José del Coz, Pablo González, Alejandro Moreo, Fabrizio Sebastiani, *Report on the 1st International Workshop on Learning to Quantify (LQ 2021)*, **ACM SIGKDD Explorations**, Vol 24, 1, 2022, pp. 49-51

- Mirko Bunse, Alejandro Moreo, Fabrizio Sebastiani, Martin Senz, *Ordinal Quantification through Regularization.* **ECML / PKDD 2022, 33rd European Conference on Machine Learning and Principles and Practice of Knowledge Discovery in Databases**, Grenoble, France, September 19-23, 2022, pp. 36-52

- Andrea Esuli, Alejandro Moreo, Fabrizio Sebastiani, Gianluca Sperduti, *A Concise Overview of LeQua@ CLEF 2022: Learning to Quantify*, **CLEF 2022, Proceedings of the 13th Conference and Labs of the Evaluation Forum**, Springer, Cham, 2022, pp. 362-381

- Andrea Esuli, Alejandro Moreo, Fabrizio Sebastiani, Gianluca Sperduti, *A Detailed Overview of LeQua@ CLEF 2022: Learning to Quantify*, **CLEF 2022, Proceedings of the 13th Conference and Labs of the Evaluation Forum**, CEUR Workshop Proceedings, 2022, 3180, pp. 1849-1868

- Silvia Corbara, Berta Chulvi, Paolo Rosso, Alejandro Moreo, *Rythmic and Psycolinguistic Features for Authorship Tasks in the Spanish Parliament: Evaluation and Analysis*, **CLEF 2022 Conference and Labs of the Evaluation Forum**, 2022, pp. 79–92

- Andrea Esuli, Alejandro Moreo, Fabrizio Sebastiani, *LeQua@ CLEF2022: Learning to Quantify*, **ECIR 2022, 44th European Conference on Information Retrieval, Stavanger, NO**, 2022, pp. 374-381

- Silvia Corbara, Berta Chulvi Ferriols, Paolo Rosso, Alejandro Moreo, *Investigating topic-agnostic features for authorship tasks in Spanish political speeches*, **International Conference on Applications of Natural Language to Information Systems**, Springer, Cham, 2022, pp. 394-402

- Juan José del Coz, Pablo González, Alejandro Moreo, Fabrizio Sebastiani, *Learning to quantify: Methods and applications (LQ 2021)*, **Proceedings of the 30th ACM International Conference on Information & Knowledge Management**, 2021, pp. 4874-4875

- Alejandro Moreo, Andrea Esuli, Fabrizio Sebastiani, *QuaPy: a Python-based framework for quantification*, **Proceedings of the 30th ACM International Conference on Information & Knowledge Management**, 2021, pp. 4534-4543

- Francesco Banterle, Alessandro Artusi, Alejandro Moreo, Fabio Carrara, *NoR-VDPNet++: Efficient Training and Architecture for Deep No-Reference Image Quality Metrics*, **ACM SIGGRAPH 2021 Talks**, 2021

- Alejandro Moreo, Fabrizio Sebastiani, *Re-Assessing the "Classify and Count" Quantification Method*, **ECIR 2021, 43rd European Conference on Information Retrieval, Lucca, IT, Volume II**, 2021, pp. 75-91

- Alejandro Moreo, Andrea Pedrotti, Fabrizio Sebastiani, *Heterogeneous Document Embeddings for Cross-Lingual Text Classification*, **SAC 2021, 36th ACM Symposium On Applied Computing, Gwangju, KR**, 2021, pp. 685-688

- Juan José del Coz Velasco, Pablo González González, Alejandro Moreo, Fabrizio Sebastiani, *Learning to quantify: methods and applications (LQ 2021)*, **CIKM '21: Proceedings of the**

30th ACM International Conference on Information & Knowledge Management, October 2021, pp. 4874–4875

- Francesco Banterle, Alessandro Artusi, Alejandro Moreo, Fabio Carrara, *NoR-VDPnet: A No-Reference High Dynamic Range Quality Metric Trained On Hdr-Vdp 2*, **2020 IEEE International Conference on Image Processing (ICIP)**, 2020, pp. 126-130.

- Silvia Corbara, Alejandro Moreo, Fabrizio Sebastiani, and Mirko Tavoni, *The Epistle to Cangrande Through the Lens of Computational Authorship Verification*, **PATRECH 2019, International Conference on Image Analysis and Processing**, 2019, pp. 148-158.

- Andrea Esuli, Alejandro Moreo, Fabrizio Sebastiani *A Recurrent Neural Network for Sentiment Quantification* **Proceedings of the 27th ACM International Conference on Information and Knowledge Management, CIKM 2018**, Torino, Italy, October 22-26, 2018, pp. 1775-1778.

- Alejandro Moreo, Andrea Esuli, Fabrizio Sebastiani *Lightweight random indexing for polylingual text classification (Extended Abstract)* **Proceedings of the 27th International Joint Conference on Artificial Intelligence, IJCAI 2018**, Stockholm, Sweden, 13-19 July 2018, pp. 5642-5646.

- Alejandro Moreo, Andrea Esuli, Fabrizio Sebastiani *Distributional correspondence indexing for cross-lingual and cross-domain sentiment classification (Extended Abstract)* **Proceedings of the 27th IJCAI International Joint Conference on Artificial Intelligence, IJCAI 2018**, Stockholm, Sweden, 13-19 July 2018, pp. 5642-5646.

- Alejandro Moreo, Andrea Esuli, Fabrizio Sebastiani *Distributional Random Oversampling for Imbalanced Text Classification* **Proceedings of the 39th International ACM SIGIR conference on Research and and Development in Information Retrieval, SIGIR 2016**, Pisa, Italy, July 17-21, 2016, pp. 805-808.

- Salud M Jiménez Zafra, Giacomo Berardi, Andrea Esuli, Diego Marcheggiani, María Teresa Martín-Valdivia, Alejandro Moreo *A Multi-lingual Annotated Dataset for Aspect-Oriented Opinion Mining* **Proceedings of the 2015 Conference on Empirical Methods in Natural Language Processing, EMNLP 2015**, Lisbon, Portugal, 2015, pp. 2533-2538.

- Andrea Esuli, Alejandro Moreo *Distributional Correspondence Indexing for Cross-Language Text Categorization*, **Proceedings of the European Conference on Information Retrieval, ECIR 2015**, Vienna, Austria, 2015, pp. 104-109.

- Manuel Romero, Alejandro Moreo, and Juan Luis Castro. *Collaborative system for learning based on questionnaires and tasks.* **International Joint Conference SOCO'13-CISIS'13-ICEUTE'13**. Springer, 2013, pp. 631-640.

- Alejandro Moreo, Juan Luis Castro, and Jose Manuel Zurita. *Handling context in lexicon-based sentiment analysis.* **International Conference on Information Processing and Management of Uncertainty in Knowledge-Based Systems**. Springer, 2012, pp. 245-254.

National conferences / worhshops (6 items)

- Silvia Corbara, Alejandro Moreo, *Enhancing adversarial authorship verification with data augmentation (Extended Abstract)*, **IIR 2023, Italian Information Retrieval Workshop, Pisa, IT** , 2023.

- Alejandro Moreo, Andrea Pedrotti, Fabrizio Sebastiani, *Generalized funnelling: Ensemble learning and heterogeneous document embeddings for cross-lingual text classification (Extended Abstract)*, **IIR 2021, Italian Information Retrieval Workshop, Bari, IT** , 2021.

- Gianluca Sperduti, Alejandro Moreo, Fabrizio Sebastiani, *Garbled-Word Embeddings for Jumbled Text*, **IIR 2021, Italian Information Retrieval Workshop, Bari, IT**, 2021.

- Silvia Corbara, Alejandro Moreo, Fabrizio Sebastiani, Mirko Tavoni, *L'Epistola a Cangrande al vaglio della authorship verification.* **Presented at workshop *"Nuove Inchieste sull'Epistola a Cangrande"***, Dipartimento di Filologia, Letteratura e Linguistica, Università di Pisa, dicembre 2018.

- Andrea Esuli, Alejandro Moreo, and Fabrizio Sebastiani, *Polylingual Text Classification via Funnelling*, Presented at the *9th Italian Information Retrieval Workshop (IIR 2018)*, Roma, IT, May 28 – 30, 2018.
- Alejandro Moreo, Andrea Esuli, Fabrizio Sebastiani *Transductive Distributional Correspondence Indexing for Cross-Domain Topic Classification.* **IIR 2016, 7th Italian Information Retrieval Workshop**, 2016, Venice, Italy.

Preprints (7 items)

- Alejandro Moreo, *On the Interconnections of Calibration, Quantification, and Classifier Accuracy Prediction under Dataset Shift*, **arXiv preprint** arXiv:2505.11380 (2025).
- Alessio Micheli, Alejandro Moreo, Marco Podda, Fabrizio Sebastiani, William Simoni, and Domenico Tortorella, *Learning to quantify graph nodes*, **arXiv preprint**, arXiv:2503.15267 (2025).
- Gianluca Sperduti and Alejandro Moreo, *Misspellings in Natural Language Processing: A survey*, **arXiv preprint**, arXiv:2501.16836 (2025).
- Martina Leocata, Alejandro Moreo, and Fabrizio Sebastiani, *The Questio de aqua et terra: A Computational Authorship Verification Study*, **arXiv preprint**, arXiv:2501.05480 (2025).
- Alejandro Moreo, Andrea Esuli, and Fabrizio Sebastiani, *Revisiting Distributional Correspondence Indexing: A Python Reimplementation and New Experiments*, **arXiv preprint**, arXiv:1810.09311 (2018).
- Andrea Esuli, Tiziano Fagni, and Alejandro Moreo, *JaTeCS an open-source JAva TExt Categorization System*, **arXiv preprint**, arXiv:1706.06802 (2017).
- Fabio Carrara, Andrea Esuli, Tiziano Fagni, and Alejandro Moreo, *Exploring epoch-dependent stochastic residual networks*, **arXiv preprint**, arXiv:1704.06178 (2017).

Reports

- Mirko Bunse, Pablo González, Alejandro Moreo, and Fabrizio Sebastiani, *Proceedings of the 4th International Workshop on Learning to Quantify (LQ 2024)*, Workshop co-located in the **European Conference on Machine Learning and Principles and Practice of Knowledge Discovery in Databases (ECML-PKDD)**, September 9-13, Vilnius (Lithuania), 2024.
- Andrea Esuli, Alejandro Moreo, Fabrizio Sebastiani, and Gianluca Sperduti, *An Overview of LeQua 2024, the 2nd International Data Challenge on Learning to Quantify*, **Proceedings of the 4th International Workshop on Learning to Quantify (LQ 2024)**.
- Juan José del Coz, Pablo González, Alejandro Moreo, Fabrizio Sebastiani, *Report on the 2nd International Workshop on Learning to Quantify (LQ 2022)*, `https://lq-2022.github.io/proceedings/CompleteVolume.pdf`, 2022
- Nicola Aloia, et al.*AIMH Research Activities 2021*, **Istituto di Scienza e Tecnologie dell'Informazione" A. Faedo" (internal report)**, `https://hal-lara.archives-ouvertes.fr/hal-03573814/` 2021.

Magazines

- Silvia Corbara, Alejandro Moreo, Fabrizio Sebastiani, *Syllabic Quantity: Rhythmic Clues for Latin Authorship*, **Information Matters**, Vol. 2, No. 6, 2022, Available at SSRN: `https://ssrn.com/abstract=4214742` or `http://dx.doi.org/10.2139/ssrn.4214742`

Editorial Board Membership (3 items)

- Journal of Machine Learning Research (JMLR) Editorial board of reviewers (since Jun 2020) `https://www.jmlr.org/editorial-board.html`
- Journal of Computing and Cultural Hieritage (JOCCH), Associate Editor (Jan 2023-March 2025), `https://dl.acm.org/journal/jocch/editorial-board`
- PeerJ Computer Science, Editorial Board member (since Dec 2023), `https://peerj.com/moreo/`

Keynotes (1 items)

- "Quantification: Estimating Class Prevalence via Supervised Learning" *ml.astro 2022*: Workshop on Machine Learning for Astroparticle Physics and Astronomy, co-located with INFORMATIK (2022), Hamburg (Germany), 26 September 2022.

Teaching Activities

PhD Thesis supervised (2 items)

- Silvia Corbara, "Computational Authorship Analysis: Applications and Issues in the Cultural Heritage Field", October 25, 2024. Supervisors: Prof.ssa Anna Monreale, Alejandro Moreo, and Fabrizio Sebastiani. Corso "INF/01 - INFORMATICA", Ph.D in Data Science, 35 cycle.
- Andrea Pedrotti, "Heterogeneous Transfer Learning in Natural Language Processing", October 10, 2024. Supervisors: Alejandro Moreo and Fabrizio Sebastiani. Corso "INF/01 - INFORMATICA" (URN etd-09132024-151709) `http://etd.adm.unipi.it/theses/available/etd-09132024-151709/`

Courses

- "Learning to Quantify: Inferring Unbiased Estimators of Class Prevalence via Machine Learning",[2] Alejandro Moreo and Fabrizio Sebastiani, *AIDA doctoral consortium.* 4 slots of two hours each, March 14,16,21,23, 2023.
- "Machine Learning for Text Classification", Fabrizio Sebastiani and Alejandro Moreo, *"Doctoral Program in Brain, Mind and Computer Science", Università degli Studi di Padova*, (3 hours online) May 6-7, 2021.
- "Blocco V - Falsificazione e Fake News - Modulo 2: Approccio computazionale ai dati testuali per il riconoscimento di opere false: il caso dell'Epistola a Cangrande", Mirko Tavoni, Silvia Corbara, Fabrizio Sebastiani, and Alejandro Moreo, *Ciclo di Seminari per la Didattica Trasversale per Dottorandi, Università di Pisa*, (4 hours online) 11st June, 2020.
- "Text Analytics and Opinin Mining" (Master course), Andrea Esuli and Alejandro Moreo, Master in Big Data Analytics & Social Mining, University of Pisa. A 10 hours-course given during 5 consecutive years from 2017 - 2021.
- "Programming Methodology" (60 hours course), Alejandro Moreo, Escuela Técnica Superior de Ingenierías Informática y de Telecomunicación (ETSIIT-UGR), University of Granada, 2012-2013

Summer Schools (teaching)

- "Quantification: Predicting Class Frequencies via Supervised Learning", Fabrizio Sebastiani and Alejandro Moreo, *2nd European Summer School on Artificial Intelligence (ESSAI)*, (7.5 hours) Athens (Greece), 15-26 July, 2024.

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[2] `https://learning2quantifyaida.github.io/course/`

- "Intersections Between IR, Data Mining, Machine Learning, and Natural Language Processing", Fabrizio Sebastiani and Alejandro Moreo, *The 13th European Summer School in Information Retrieval (ESSIR)*, (3 hours) Lisbon (Portugal), 18-23 July, 2022.
- "Machine Learning for automatic text analysis: tasks, methods, and tools", Fabrizio Sebastiani and Alejandro Moreo, *Summer School "Digital Tools for Humanists – Working on Text", University of Pisa*, (8 hours) Pisa (Italy), June 9 2022.
- "Text Classification and Sentiment Analysis", Fabrizio Sebastiani and Alejandro Moreo, ACM SIGIR/SIGKDD Africa Summer School on Machine Learning for Data Mining and Search (AFIRM), Cape Town, 2019.

Tutorials (4 items)

- "A Tutorial on Quantification Predicting Class Frequencies via Supervised Learning" (half-day tutorial), Mirko Bunse, Alejandro Moreo, Fabrizio Sebastiani, as part of the 4th International Workshop on Learning to Quantify: Methods and Applications (LQ 2024), Co-located with ECML/PKDD, Vilnius (Lithuania), September 13, 2024
- "Learning to Quantify: Supervised Prevalence Estimation for Computational Social Science" (half-day tutorial), Alejandro Moreo and Fabrizio Sebastiani, 12th International Conference on Social Informatics (SocInfo 2020), Pisa, IT, October 2020.
- "Learning to Quantify: Estimating Class Prevalence via Supervised Learning" (tutorial), Alejandro Moreo and Fabrizio Sebastiani, Proceedings of the 42nd International ACM SIGIR Conference on Research and Development in Information Retrieval. 2019.
- "Tutorial: Supervised Learning for Prevalence Estimation" (tutorial), Alejandro Moreo and Fabrizio Sebastiani, International Conference on Flexible Query Answering Systems. Springer, Cham, 2019.

Tutoring

- (2024) Ilaria Salogni: *From Classification to Quantification: New Methods for Estimating Disease Prevalence in Verbal Autopsies Datasets.* Corso di Laurea Magistrale in Informatica Umanistica, University of Pisa. Tutors: Felice dell'Orletta, Andrea Esuli, Alejandro Moreo, Fabrizio Sebastiani. Anno Accademico 2023/2024.
- (2024) Martina Leocata: *Authorship Verification for Cultural Heritage: The Case of the Apocryphal Quixote.* Corso di Laurea Magistrale in Informatica Umanistica, University of Pisa. Tutors: Felice dell'Orletta, Alejandro Moreo, Fabrizio Sebastiani. Anno Accademico 2023/2024.
- (2024) William Simoni: *Graph Learning for Network Quantification.* Corso di Laurea Magistrale in Informatica, University of Pisa. Tutors: Alessio Micheli, Fabrizio Sebastiani, Marco Podda, Alejandro Moreo, Domenico Tortorella. Anno Accademico 2023/2024.
- (2024) Lorenzo Volpi: *Predicting Classifier Accuracy under Prior Probability Shift.* Corso di Laurea Magistrale in Informatica, University of Pisa. Tutors: Andrea Esuli, Alejandro Moreo, Fabrizio Sebastiani. Anno Accademico 2022/2023. Award "Leonardo Lesmo" dell'Associazione Italiana per l'Intelligenza Artificiale, best Italian dissertation of the year.
- (2021) Elisa Mercanti: *Classificazione di contenuti multimediali e interactive learning: un approccio text-based.* Final Project of Master II livello (*Tirocinio*) in Big Data Analytics and & Social Mining, at Department of Informatics, University of Pisa. Tutors: Marco Cerri (Freeda Media) and Alejandro Moreo.
- (2020) Andrea Pedrotti. *Heterogeneous Document Embeddings for Multi-Lingual Text Classification.* MSc Laurea Dissertation in Informatics and Humanities, University of Pisa. Tutors: Alejandro Moreo and Fabrizio Sebastiani.
- (2020) Fabio Gitto. *Predictive Model for Call-center Transcriptions.* Final Project of Master II livello (*Tirocinio*) in Big Data Analytics and & Social Mining, at Department of Informatics, University of Pisa. Tutors: Marco Coggiatti (Freeda Media) and Alejandro Moreo.

- (2020) Gianluca Sperduti. *Combattere l'odio: Due modelli di classificazione testuale con tecnologia Transformer e Transfer Learning per risolvere il problema di spam, odio e violenza nella sezione commenti di Freeda.* Final Project of Master II livello (*Tirocinio*) in Big Data Analytics and & Social Mining, at Department of Informatics, University of Pisa. Tutors: Marco Cerri (Freeda Media) and Alejandro Moreo.
- (2020) Paola Serrati. *Social Media & Dialogue System Design: le opportunità per il turismo digitale.* Final Project of Master II livello (*Tirocinio*) in Big Data Analytics and & Social Mining, at Department of Informatics, University of Pisa. Tutors: Stefano Cresci and Alejandro Moreo.
- (2019) Silvia Corbara. *The Epistle to Cangrande through the Lens of Computational Authorship Verification.* MSc Laurea Dissertation in Informatics and Humanities, University of Pisa. Tutor: Mirko Tavoni, Co-tutors: Alejandro Moreo and Fabrizio Sebastiani.
- (2019) Marco Magnolo. *Influenza l'Influencer: Un Approccio Semi-automatico All'Interazione con un Account per Sfruttarne la Popolarità* Final Project of Master II livello (*Tirocinio*) in Big Data Analytics and & Social Mining, at Department of Informatics, University of Pisa. Tutors: Alejandro Moreo and Paolo Ferragina.

Scientific Review

- Reviewer of the PhD dissertation of the candidate Jose Rubén Sánchez Iruela, University of Granada, titled "Paralelización en GPU de métodos de Machine Learning para el análisis de datos procedentes del consumo energético" for obtaining the PhD in Information and Communication Technologies (program B25.56.1), April 2025.
- Reviewer of the PhD dissertation of the candidate Bastien Dussap, University of Paris-Saclay, titled "Unified framework for label shift quantification" for obtaining the doctorate of Université Paris-Saclay in Applied mathematics, July 2024.
- Reviewer of the PhD dissertation of the candidate Giandomenico Cornacchia, Università di Bari, titled "Fostering Responsible Artificial Intelligence: An Evaluation Approach Grounded on Conterfactual Reasoning", at Corso di Dottorato in Ingegnieria Elettrica e dell'Informazione, cycle XXXVI, Nov 2023.

Talks

- Alejandro Moreo. "Learning to Quantify. Supervised Class Prevalence Estimation". 20 Dec 2023. In Andaluz.IA. Universidad Pablo de Olavide, Seville, Spain.
- Silvia Corbara, Alejandro Moreo, Fabrizio Sebastiani, Mirko Tavoni. "L'Epistola a Cangrande al vaglio della computational authorship verification: Risultati preliminari (con una postilla sulla cosiddetta "XIV Epistola di Dante Alighieri").", 18 Dec 2018. In Atti del Seminario "Nuove Inchieste sull'Epistola a Cangrande" Alberto Casadei (ed.), Pisa University Press, Pisa, 2020, pp 153-192. ISBN 978-88-3339-333-9.

Program committees

- ECIR 2023 (short paper track), 45th European Conference on Information Retrieval.
- LQ 2024: 4th International Workshop on Learning to Quantify: Methods and Applications
- LQ 2023: 3rd International Workshop on Learning to Quantify: Methods and Applications
- LQ 2022: 2nd International Workshop on Learning to Quantify: Methods and Applications
- LQ 2021: 1st International Workshop on Learning to Quantify: Methods and Applications
- LeQua 2024: A lab on Learning to Quantify @ ECML-PKDD2024
- LeQua 2022: A lab on Learning to Quantify @ CLEF2022
- ACM SIGIR 2023 (tutorial track), 46th Conference on Research and Development in Information Retrieval.

- ACM SIGIR 2022 (tutorial track), 45th Conference on Research and Development in Information Retrieval.
- ACM SIGIR 2021, 44th Conference on Research and Development in Information Retrieval.
- ACM SIGIR 2020, 43rd Conference on Research and Development in Information Retrieval.
- ACM SIGIR 2019, 42nd Conference on Research and Development in Information Retrieval.
- IIR 2025, 15th Italian Information Retrieval Workshop.
- IIR 2023, 13th Italian Information Retrieval Workshop.
- IIR 2021, 12nd Italian Information Retrieval Workshop.
- IIR 2019, 10th Italian Information Retrieval Workshop.
- IIR 2018, 9th Italian Information Retrieval Workshop.
- IIR 2017, 8th Italian Information Retrieval Workshop.
- IIR 2016, 7th Italian Information Retrieval Workshop.
- IIR 2015, 6th Italian Information Retrieval Workshop.
- MultiLingMine 2016, 1st International Workshop on Modeling, Learning and Mining for Cross/Multilinguality.
- CLiC-it 2020, PC of Machine Learning for NLP track, 7th Italian Conference on Computational Linguistics.
- CLiC-it 2018, 5a Conferenza Italiana di Linguistica Computazionale.
- CLiC-it 2017, 4a Conferenza Italiana di Linguistica Computazionale.
- CLiC-it 2016, 3a Conferenza Italiana di Linguistica Computazionale.
- SAC 2017, 32nd ACM/SIGAPP Symposium on Applied Computing.

Roles in scientific events

Organization

- Organizer of **LeQua 2024:** A lab on Learning to Quantify[3] (co-organized with Andrea Esuli, Fabrizio Sebastiani, and Gianluca Sperduti), at ECML-PKDD 2024, Vilnius (Lithuania), September 9-13, 2024.
- Organizer of **LeQua 2022:** A lab on Learning to Quantify[4] (co-organized with Andrea Esuli, Fabrizio Sebastiani, and Gianluca Sperduti), at CLEF2022, Bologna (Italy), September 7, 2022.
- Organizer of **LQ 2025**[5] (co-organized with Mirko Bunse, Pablo González, and Fabrizio Sebastiani), 5th International Workshop on Learning to Quantify: Methods and Applications, Co-located with ECML/PKDD, Porto (Portugal), September, 2025.
- Organizer of **LQ 2024**[6] (co-organized with Mirko Bunse, Pablo González, and Fabrizio Sebastiani), 4th International Workshop on Learning to Quantify: Methods and Applications, Co-located with ECML/PKDD, Vilnius (Lithuania), September 13, 2024.
- Organizer of **LQ 2023**[7] (co-organized with Mirko Bunse, Pablo González, and Fabrizio Sebastiani), 3rd International Workshop on Learning to Quantify: Methods and Applications, Co-located with ECML/PKDD, Torino (Italy), September 18, 2023.
- Organizer of **LQ 2022**[8] (co-organized with Juan José del Coz, Pablo González, and Fabrizio Sebastiani), 2nd International Workshop on Learning to Quantify: Methods and Applications, Co-located with ECML/PKDD, Grenoble (France), September 23, 2022.

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[3]`https://lequa2024.github.io/`
[4]`https://lequa2022.github.io/`
[5]`https://lq-2025.github.io/`
[6]`https://lq-2024.github.io/`
[7]`https://lq-2023.github.io/`
[8]`https://lq-2022.github.io/`

- Organizer of **LQ 2021**[9] (co-organized with Juan José del Coz, Pablo González, and Fabrizio Sebastiani), First International Workshop on Learning to Quantify: Methods and Applications, Co-located with CIKM, Gold Coast (Australia), November 1st and November 5th, 2021.
- Tutorial Chair of **ECIR 2021**, 43rd European Conference on Information Retrieval, Lucca (Italy), March 28 - April 1, 2021.
- Event Chair of **ISTI DAY(s)** (co-organized with Massimiliano Assante), The annual meeting of the ISTI-CNR, Pisa (Italy), November 3rd, 10th, and 17th, 2020.
- Volunteer Coordinator of **SIGIR 2016**, 39th International ACM SIGIR Conference on Research and Development in Information Retrieval, Pisa (Italy), July 17-21, 2016.

Responsability

- Member of the committee for 1 contract "Tempo Determinato" Bando 400.21 ISTI-PNRR, held on 19 September as a virtual meeting at ISTI-CNR, Pisa, Italy. Prot. 09/09/2024 number 2024-CNR0A00-0309772.
- Project evaluator in role of "Technical tutoring" for project MADAI submited for evaluation to ARTES 4.0 (Advanced Robotics and enabling digital TEchnologies & Systems 4.0) foundation.
- President of the committee for 1 scholarships "Assegni di ricerca professionalizzanti" Bando ISTI 007/2024-PI, held on 8, 14 May at ISTI-CNR, Pisa, Italy. Prot. 06/05/2024 number 2024-CNR0A00-0149005.
- Member of the committee for 3 scholarships "Assegni di ricerca professionalizzanti" Bando ISTI 023/2023-PI, held on 12, 22 January at ISTI-CNR, Pisa, Italy. Prot. 11/01/2024 number 2024-CNR0A00-0006485.
- Member of the committee for 1 scholarship "Assegno di ricerca professionalizzanti" Bando ISTI 004/2024-PI, held on 3, 5 March at ISTI-CNR, Pisa, Italy. Prot. 04/03/2024 number 2024-CNR0A00-0074240.

Participation in Research Projects

- **QuaDaSh: Quantification in the Context of Dataset Shift** (Prot. P2022TB5JF), Bando Prin 2022 PNRR – Settore PE6. **Rol: PI (Principal Investigator)**. Funding: 225490 Euro. Partners CNR (resp. Alejandro Moreo), UniPD (resp. Gian Antonio Susto), UniPI (resp. Nicola Salvati). Documento riferimento: "decreto n 1205 del 28/07/2023, Bando Prin 2022 PNRR – Settore PE6 – Comunicazione di approvazione progetto e richiesta di suddivisione fondi ('rideterminazione')"
- **WEMB** (Prot. 2022EPTPJ9), Bando Prin 2022 – Settore PE6. Rol: participant. PI: Fabrizio Sebastiani. Partners CNR (resp. Fabrizio Sebastiani), Università di Bolonia (resp. Marianna Bolognesi).
- **SoBigData++** project, funded by the European Commission (Grant 871042) under the H2020 Programme INFRAIA-2019-1. Roles: 'Responsabile Scientifico per il gruppo AIMH', participation in WP3 NA2 – Dissemination, Impact, and Sustainability; WP4 NA3 – Training; WP5 NA4 - Accelerating Innovation; WP6 TA1 – Transnational Access; WP8 JRA1 – Social Mining and Big Data Resource Integration; 10 JRA3 – Exploratories. Devoted 7 *person-months* effort. Documento riferimento: "Ratifica gruppo di lavoro" Prot. ISTI-CNR 3654/2022 del 9/11/2022. 'Addendum GDL Gruppo di lavoro per la realizzazione del progetto SoBigData-PlusPlus' Prot: N. 207337 del 04/07/2023 (2023-CNR0A00-0207337)
- **SoBigData.it** project, funded by the European Commission "NextGenerationEU" under the MUR IR0000013 code. Roles: 'Responsabile Scientifico per il gruppo AIMH', participation in WP2 – Virtual Research Laboratories, WP3 – Access provision, WP5 – Responsible Data

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[9]https://cikmlq2021.github.io/

Science and Training, WP6 – Infrastructure services, WP7 – Management. Devoted 3 *person-months* effort. Documento riferimento: 'Ratifica GDL progetto IR PNRR 'SoBigData.It'. Coordinatore Roberto Trasart', Prot: N. 208377 del 05/07/2023 (2023-CNR0A00-0208377)

- **SoBigData RI Preparatory Phase Project - SoBigData RI PPP** project, Grant Agreement n. 101079043, founded by Bando HORIZON-INFRA-2021-DEV-02. Roles: 'Responsabile Scientifico per il gruppo AIMH', participation in WP1 – Project Management, WP4 – Strategy and Impact, WP6 – Services Provision, WP8 – Central Hub. Devoted 4 *person-months* effort. Documento riferimento: 'Ratifica GDL Gruppo di lavoro per la realizzazione del progetto SoBigData RI Preparatory Phase Project - SoBigData RI PPP'. Coordinatore Roberto Trasart', Prot: N. 207310 del 04/07/2023 (2023-CNR0A00-0207310)

- **AI4Media** project, funded by the European Commission (Grant 951911) under the H2020 Programme ICT-48-2020

Edition of Proceedings

- Editor of the Proceedings of the 2nd International Workshop on Learning to Quantify (LQ 2022), Juan José del Coz, Pablo González, Alejandro Moreo, and Fabrizio Sebastiani (eds.) `https://lq-2022.github.io/proceedings/CompleteVolume.pdf`

International journal paper reviewer

- Machine Learning, ISSN: 1573-0565
- Journal of Classification (CLAS), ISSN: 1432-1343
- Transactions on Knowledge and Data Engineering (TKDE), ISSN: 1558-2191
- International Journal of Information and Computer Security (IJICS), ISSN: 1744-1773
- Engineering Reports, ISSN: 2577-8196
- ACM Journal on Computing and Cultural Heritage (JOCCH), ISSN: 1556-4673
- Online Social Networks and Media (OSNEM), ISSN: 2468-6964
- Pragmatics and Society, ISSN: 1878-9714
- IEEE Transactions on Affective Computing (TAFFC), ISSN: 0162-8828
- PeerJ Computer Science (PEERJ), ISSN: 2376-5992
- Knowledge-Based Systems (KNOSYS), ISSN: 0950-7051
- Transactions on Information Systems (TOIS), ISSN: 1046-8188
- Journal of Artificial Intelligence Research (JAIR), ISSN: 1076-9757
- Digital Health (DHJ), ISSN: 2055-2076
- Artificial Intelligence (ARTINT), ISSN: 0004-3702.
- Electronics and Telecommunications Research Institute Journal (ETRI), ISSN: 2233-7326.
- International Journal of Computational Intelligence Systems (IJCIS), ISSN: 1875-6883
- Journal of Machine Learning Research (JMLR), ISSN: 1533-7928
- Journal of Intelligent Information Systems (JIIS), ISSN: 1573-7675

Awards and recognitions (8 items)

- Best SoBigData paper runner-up at Discovery Science 2024 for the paper "A Simple Method for Classifier Accuracy Prediction under Prior Probability Shift". Pisa, Italy, 2024.

- Winner of "Short Term Mobility 2024", on the research collaboration project "Opimizing KDE-based Methods for Multiclass Quantification", for a 15-days period abroad at the University of Oviedo, Spain.

- Best Short Paper Award at the ACM Symposium on Applied Computing (SAC 2021) for article "Heterogeneous document embeddings for cross-lingual text classification" (A Moreo, A Pedrotti, F Sebastiani)
- Best Short Paper Award at the 11th Italian Information Retrieval Workshop (IIR 2021) for article "Garbled-word embeddings for jumbled text" (G Sperduti, A Moreo, F Sebastiani).
- NVidia GPU Grant, February 2019
- Best-Lab (honourable mention) at AFIRM'19 summer school, February 2019
- Progett-ISTI (selected within the 3 bests research project proposal in ISTI-CNR), September 2016
- GYM-16, Grant for Young Mobility, October 2016

Visiting academic positions (4 items)

- September 15 2023 to October 1 2024, Short Term Mobility (STM 2024) at Universidad de Gijón, Asturias (Spain) to collaborate with Pablo González and Juan José del Coz on the topic of "Improving the efficiency of KDEy for Multiclass Quantification".
- July 17 2023 to July 29 2023, short research stay at Universidad de Gijón, Asturias (Spain) to collaborate with Pablo González and Juan José del Coz on the topic of "Multicass Quantification approaches based on Kernel Density Estimation".
- October 7 2017 to October 21 2017, short research stay at Research Institutes of Sweden (RISE), Stockholm (Sweden). Advisor: Magnus Sahlgren.
- October 1 2012 to January 31 2013, short rearch stay at Istituto di Scienza e Tecnologie dell'Informazione, Consiglio Nazionale delle Ricerche (ISTI-CNR), Pisa (Italy). Advisor: Fabrizio Sebastiani.

Other

- Partecipation in the creation of the spin-off company: **Virtual Solutions and Intelligent Systems, S. L.**, CEO Juan Luis Castro Peña. "Empresa Innovadora de Base Tecnológica" (EBC) per I+D+i, spin-off of the University of Granada. Activity period: 2009-2015. URL https://spinoff.ugr.es/cms/base/view/base/basecontent/298/virtual-solutions/ Reference document: "Approval of the participation, with a 5% shareholding in the spin-off company: *Informe Rev. 2 (10/3/2010) Oficina de Transferencia de Resultados de Investigación (OTRI), Aprobación en el Boletín Oficial de la Universidad de Granada num. 52 (ACG52/6a) January 1st, 2012.* https://secretariageneral.ugr.es/sites/webugr/secretariageneral/public/inline-files/ACG526a.pdf