

Francesco Periti, Ph.D.

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in francesco-periti

🌐 FrancescoPeriti

📍 Leuven

❤️ Married

🇮🇹 Italian

Postdoctoral researcher at KU Leuven and Flanders Make, with expertise in Natural Language Processing (NLP), Large Language Models (LLMs), and Machine Learning (ML).





Skills

Main tech skills	📖 NLP, LLMs, ML, programming, databases, data analysis
Main soft skills	📖 teamwork, commitment, initiative, problem solving, creativity
Languages	📖 Italian (native), English (fluent), Dutch (beginner - currently learning)
Coding	📖 Python, C/C++, Java, SQL, PHP, \LaTeX , Bash, Prolog
Databases	📖 MySQL, PostgreSQL, SQLite, MongoDB, Neo4j, SPARQL
Misc.	📖 Academic research, teaching, training, version control systems, ...
Others	📖 Driving license (B)




Employment History

2025 – Present	<p>📖 Postdoctoral researcher at Flanders Make & KU Leuven [Computer Science].</p> <p>My research focuses on the integration of Access Control Management (ACM) and LLM agents in enterprise scenarios, examining both <i>how LLM agents can support ACM</i> and <i>how ACM can regulate LLM agents</i>. I conducted research on existing solutions, and I am finalizing this work for publication in a scientific article. I am also developing a custom LLM agent for ACM using LangGraph, and Transformers.</p>
2024 – 2024	<p>📖 Postdoctoral researcher at KU Leuven [Linguistics].</p> <p>My research focused on multilingual LLMs for NLP tasks such as word meaning modeling. I conducted research on text generation and cross-lingual transfer. I collaborated with international, interdisciplinary teams, and non-technical scholars.</p>
2021 – 2024	<p>📖 Doctoral researcher at University of Milan [Computer Science].</p> <p>My research focused on ML and LLMs for NLP and Computational Linguistics. I secured funding through a competitive research grant. I collaborated with international teams during multiple research stays. I taught courses on programming (Python), NLP, and databases. I supervised under-graduate and graduate students, reviewed scientific papers, and organized workshops relevant to my research.</p>
2020 – 2021	<p>📖 Predoctoral researcher at University of Milan [Computer Science].</p> <p>My research focused on word embeddings for Computational History. I implemented a web application in PHP for data collection, modeled semantic knowledge using CIDOC-CRM ontologies, and explored word embeddings for knowledge representation.</p>




Research stays

- 2023 – 2024  **Internship** at KU Leuven.
My research focused on LLMs for modeling word meaning and semantic change. This internship was supported by the *ChangeIsKey!* project.
-  **Internship** at University of Gothenburg.
My research focused on word embeddings and language modeling. This internship was supported by the *ChangeIsKey!* project.



Education

- 2021 – 2024  **Ph.D., Computer Science** University of Milan.
Thesis title: *Modeling Semantic Change through Large Language Models*.
Honors: I was awarded the *Doctor Europaeus* certification, a distinction recognizing substantial international research collaboration and mobility.
- 2018 – 2020  **M.Sc. Computer Science** University of Milan.
Thesis title: *Lexical Analysis and Automatic Detection of References and Citations in Vatican Publications from Leo XIII to Francis*.
Degree: 110/110
Honors: awarded *cum laude*
- 2015 – 2018  **B.Sc. Computer Science** University of Parma.
Thesis title: *Integration of a Shape Removal Filter in a 3D Reconstruction System for Robotics*.
Degree: 106/110
Achievement: One of only two students to graduate in the first session


Projects

- 2023 – 2025  **Change is Key!** University of Gothenburg - KU Leuven.
funded by the Riksbank anniversary fund under reference number M21-0021.
- 2020 – 2021  **TACITROOTS** University of Milan.
EU ERC H2020 project N. 818098
-  **VAST** University of Milan.
EU H2020 project N. 101004949

Workshop organization





- 2024  **LChange24** The Annual Meeting of the Association for Computational Linguistics (ACL).
The 5th International Workshop on Computational Approaches to Historical Language Change (LChange24)
- 2023  **LChange23** The Conference on Empirical Methods in Natural Language Processing (EMNLP).
The 4th International Workshop on Computational Approaches to Historical Language Change (LChange23)

Conference tutorials





2024  **Computational Modeling of Semantic Change** The 18th Conference of the European Chapter of the Association for Computational Linguistics (EACL)


Research Publications

Journal Articles

- 1 **F. Periti** and A. Dimou, “A survey on access control management in the era of large language model agents,” Nov. 2025, Ongoing.
- 2 **F. Periti**, S. Montanelli, A. Ferrara, *et al.*, “Incremental affinity propagation based on cluster consolidation and stratification,” *Neural Processing Letters*, vol. 57, p. 44, 2025.  DOI: 10.1007/s11063-025-11752-y.
- 3 L. Curini, S. Decadri, A. Ferrara, S. Montanelli, F. Negri, and **F. Periti**, “The gender gap in issue attention and language use within a legislative setting: An application to the Italian parliament (1948–2020),” *Politics & Gender*, vol. 20, no. 1, pp. 182–211, 2024.  DOI: 10.1017/S1743923X2300051X.
- 4 **F. Periti** and S. Montanelli, “Lexical semantic change through large language models: A survey,” *ACM Comput. Surv.*, vol. 56, no. 11, Jun. 2024, ISSN: 0360-0300.  DOI: 10.1145/3672393.
- 5 **F. Periti**, S. Picascia, S. Montanelli, A. Ferrara, and N. Tahmasebi, “Studying word meaning evolution through incremental semantic shift detection,” *Lang. Resour. Eval.*, vol. 59, no. 2, pp. 1363–1399, Sep. 2024, ISSN: 1574-020X.  DOI: 10.1007/s10579-024-09769-1.


Conference Proceedings

- 1 **F. Periti**, R. Goworek, H. Dubossarsky, and N. Tahmasebi, “Definition generation for word meaning modeling: Monolingual, multilingual, and cross-lingual perspectives,” Soon published, available upon request, Nov. 2025.
- 2 P. Cassotti, **F. Periti**, S. De Pascale, H. Dubossarsky, and N. Tahmasebi, “Computational modeling of semantic change,” in *Proceedings of the 18th Conference of the European Chapter of the Association for Computational Linguistics: Tutorial Abstracts*, M. Mesgar and S. Loáiciga, Eds., St. Julian’s, Malta: Association for Computational Linguistics, Mar. 2024, pp. 1–8.  DOI: 10.18653/v1/2024.eacl-tutorials.1.
- 3 B. Noble, **F. Periti**, and N. Tahmasebi, “Improving word usage graphs with edge induction,” in *Proceedings of the 5th Workshop on Computational Approaches to Historical Language Change*, N. Tahmasebi, S. Montariol, A. Kutuzov, *et al.*, Eds., Bangkok, Thailand: Association for Computational Linguistics, Aug. 2024, pp. 92–107.  DOI: 10.18653/v1/2024.lchange-1.9.
- 4 **F. Periti**, D. Alfter, and N. Tahmasebi, “Automatically generated definitions and their utility for modeling word meaning,” in *Proceedings of the 2024 Conference on Empirical Methods in Natural Language Processing*, Y. Al-Onaizan, M. Bansal, and Y.-N. Chen, Eds., Miami, Florida, USA: Association for Computational Linguistics, Nov. 2024, pp. 14 008–14 026.  DOI: 10.18653/v1/2024.emnlp-main.776.
- 5 **F. Periti**, P. Cassotti, H. Dubossarsky, and N. Tahmasebi, “Analyzing semantic change through lexical replacements,” in *Proceedings of the 62nd Annual Meeting of the Association for Computational Linguistics (Volume 1: Long Papers)*, L.-W. Ku, A. Martins, and V. Srikumar, Eds., Bangkok, Thailand: Association for Computational Linguistics, Aug. 2024, pp. 4495–4510.  DOI: 10.18653/v1/2024.acl-long.246.

- 6 **F. Periti**, P. Cassotti, S. Montanelli, N. Tahmasebi, and D. Schlechtweg, "TRoTR: A framework for evaluating the re-contextualization of text reuse," in *Proceedings of the 2024 Conference on Empirical Methods in Natural Language Processing*, Y. Al-Onaizan, M. Bansal, and Y.-N. Chen, Eds., Miami, Florida, USA: Association for Computational Linguistics, Nov. 2024, pp. 13 972–13 990.  DOI: 10.18653/v1/2024.emnlp-main.774.
- 7 **F. Periti**, H. Dubossarsky, and N. Tahmasebi, "(chat)GPT v BERT dawn of justice for semantic change detection," in *Findings of the Association for Computational Linguistics: EACL 2024*, Y. Graham and M. Purver, Eds., St. Julian's, Malta: Association for Computational Linguistics, Mar. 2024, pp. 420–436.  URL: <https://aclanthology.org/2024.findings-eacl.29/>.
- 8 **F. Periti** and N. Tahmasebi, "A systematic comparison of contextualized word embeddings for lexical semantic change," in *Proceedings of the 2024 Conference of the North American Chapter of the Association for Computational Linguistics: Human Language Technologies (Volume 1: Long Papers)*, K. Duh, H. Gomez, and S. Bethard, Eds., Mexico City, Mexico: Association for Computational Linguistics, Jun. 2024, pp. 4262–4282.  DOI: 10.18653/v1/2024.naacl-long.240.
- 9 **F. Periti** and N. Tahmasebi, "Towards a complete solution to lexical semantic change: An extension to multiple time periods and diachronic word sense induction," in *Proceedings of the 5th Workshop on Computational Approaches to Historical Language Change*, N. Tahmasebi, S. Montariol, A. Kutuzov, et al., Eds., Bangkok, Thailand: Association for Computational Linguistics, Aug. 2024, pp. 108–119.  DOI: 10.18653/v1/2024.lchange-1.10.
- 10 **F. Periti**, "Contextualised Semantic Shift Detection," in *Proceedings of the 31st Symposium of Advanced Database Systems (SEBD)*, Galzingano Terme, Italy: CEUR.org, Jul. 2023, pp. 735–741.  URL: <https://ceur-ws.org/Vol-3478/paper81.pdf>.
- 11 **F. Periti** and H. Dubossarsky, "The Time-Embedding Travelers@WiC-ITA," in *Proceedings of the Eighth Evaluation Campaign of Natural Language Processing and Speech Tools for Italian. Final Workshop (EVALITA 2023)*, Parma, Italy: CEUR.org, Sep. 2023.  URL: <https://ceur-ws.org/Vol-3473/paper47.pdf>.
- 12 S. Castano, A. Ferrara, S. Montanelli, and **F. Periti**, "Semantic Shift Detection in Vatican Publications: a Case Study from Leo XIII to Francis," in *Proceedings of the 30th Italian Symposium on Advanced Database Systems (SEBD)*, vol. 3194, Tirrenia (PI), Italy: CEUR-WS, Jun. 2022, pp. 231–243.  URL: <https://ceur-ws.org/Vol-3194/paper29.pdf>.
- 13 **F. Periti**, A. Ferrara, S. Montanelli, and M. Ruskov, "What is Done is Done: an Incremental Approach to Semantic Shift Detection," in *Proceedings of the 3rd Workshop on Computational Approaches to Historical Language Change*, N. Tahmasebi, S. Montariol, A. Kutuzov, S. Hengchen, H. Dubossarsky, and L. Borin, Eds., Dublin, Ireland: Association for Computational Linguistics, May 2022, pp. 33–43.  DOI: 10.18653/v1/2022.lchange-1.4.
- 14 S. Castano, A. Ferrara, G. Giannini, S. Montanelli, and **F. Periti**, "A Computational History Approach to Interpretation and Analysis of Moral European Values: the VAST Research Project," in *International Workshop on Computational History, HistoInformatics*, vol. 2981, CEUR-WS, Sep. 2021, pp. 1–9.  URL: <https://ceur-ws.org/Vol-2981/paper7.pdf>.
- 15 S. Castano, A. Ferrara, S. Montanelli, and **F. Periti**, "From Digital to Computational Humanities: The VAST Project Vision," in *Proc. of the 29th Italian Symposium on Advanced Database Systems (SEBD)*, vol. 2994, Pizzo Calabro (VV), Italy: CEUR-WS, Sep. 2021, pp. 24–35.  URL: <https://ceur-ws.org/Vol-2994/paper3.pdf>.


Miscellaneous Experience

Awards and Achievements

2021  **Ph.D. scholarship**, secured funding through a competitive national research grant for doctoral studies

Teaching activity

2021 – 2022  **University of Milan**
Courses: Text Mining and Sentiment Analysis, Coding for Data Science and Data Management, Information Management, Algorithms and Data Structures

2021  **Catholic University of the Sacred Heart**
Courses: Introduction to Python Programming

Co-supervision

2021 – 2024  **University of Milan**
2 Bachelor's Theses, 4 Master's Theses

2024 – ongoing  **University of Gothenburg**
1 Master's Theses

Paper review for conferences and journals

References

Available on request