Maurizio **Ferrari Dacrema**

ASSISTANT PROFESSOR

Department of Electronics Information and Bioengineering, Politecnico di Milano, Italy

✉ maurizio.ferrari@polimi.it | 🏠 mauriziofd.github.io | ⬛ MaurizioFD | 🐦 @Maurizio_fd | orcid: 0000-0001-7103-2788

Education

Politecnico di Milano   *Milano, Italy*
PHD INFORMATION TECHNOLOGY   *2016 - 2020*
- Advisor: Prof. Paolo Cremonesi
- Thesis: An assessment of reproducibility and methodological issues in neural recommender systems research

Politecnico di Milano   *Milano, Italy*
MS COMPUTER SCIENCE ENGINEERING   *2013 - 2016*
- Advisor: Prof. Francesco Amigoni
- Thesis: A method to find the optimal structure of a multiagent system tasked to identify anomalies in space applications

Politecnico di Milano   *Milano, Italy*
BS COMPUTER SCIENCE ENGINEERING   *2009 - 2013*

Career

2025	**Visiting Researcher**, SQMS Center, Fermi National Accelerator Laboratory, USA (planned for january-march)
2023-present	**Assistant Professor**, Politecnico di Milano, Italy
2020-2023	**Post-Doc Researcher**, Politecnico di Milano, Italy
2019	**Visiting PhD Student**, Alpen-Adria-Universität Klagenfurt, Austria (march-june)
2016-2020	**PhD Student**, Politecnico di Milano, Italy
2014-present	**Evaluation Expert**, Quality assurance of national and European higher education Institutions

Research Experience

RESEARCH INTEREST

Quantum Computing, design, evaluation and benchmarking of machine learning algorithms on quantum computers as well as machine learning methods to support current generation quantum computers

Recommender Systems, design, evaluation and reproducibility of algorithms for recommender systems

SCIENTIFIC PRODUCTIVITY

Total Publications, 63 peer-reviewed publications

Top-ranked Journals, 6 publications on top-ranked journals Q1 on SCIMAGO

Top-ranked Conferences, 14 publications on top-ranked A*/A CORE conferences

Impact   **Google Scholar,** h-index 13 and citations 1442

Scopus, h-index 11 and citations 795

FUNDED PROJECTS AND INTERNATIONAL COLLABORATIONS

2023-present **Horizon Europe Framework Programme (Horizon 2020), 2022-2026 JTI-EUROHPC, project "EUMaster4HPC"**, Funding 640.000 €, Work Package 3 leader
CINECA, Italian SuperComputing Resource Allocation (ISCRA), project: "Machine learning for a more efficient minor embedding" (ML4MINOR), "Quantum Annealing for Feature Selection" (QA4FS), "Impact of Problem Characteristics on the Effectiveness of Quantum Annealing" (PC4QA), Funding 15.000 €, Principal investigator
Industrial project with ContentWise SpA for content-to-content video recommendation, Funding 20.000 €, Technical responsible

2022 **Horizon Europe Framework Programme (Horizon 2020), EIT Digital Academy, project "Programme Execution of the Data Science programme"**, Funding: 32.000 €, Participant

2021 Collaboration with **Amazon Braket, Moviri SpA, ContentWise SpA**, for the development and benchmarking of a recommendation engine with quantum annealers based on my previous research paper [7]. The results are published in the AWS Quantum Technologies Blog[1]

2019 Visiting PhD student at the **Alpen-Adria-Universität Klagenfurt** (March/June), this collaboration led to paper [32] which won the **Best Paper Award** at the 13th ACM Conference on Recommender Systems (RecSys)

2018 **Horizon Europe Framework Programme (Horizon 2020), EIT Digital Blended Master, project "FlipBot as an AI teaching assistant"**, Funding: 175.000 €, Participant

2017 **Horizon Europe Framework Programme (Horizon 2020), EIT Digital Innovation Factory, project "Street Smart Retail"**, Funding: 308.000 €, Participant
Horizon Europe Framework Programme (Horizon 2020), EIT Digital Academy, project "Programme Execution of the Data Science programme", Funding: 47.500 €, Participant

Awards and Recognitions

2023 **Best Academic Team at the ACM RecSys Challenge**, sponsored by **ShareChat** at the 17th ACM Conference on Recommender Systems (RecSys)

2022 **Best Reviewer**, 31st ACM International Conference on Information and Knowledge Management (CIKM)

2021 **"Prof. Florian Daniel" Award**, best doctoral thesis in Computer Science Engineering, DEIB, Politecnico di Milano, Italy
Best Academic Team at the ACM RecSys Challenge, sponsored by **Twitter** at the 15th ACM Conference on Recommender Systems (RecSys)

2020 **Best Reviewer Nomination**, 14th ACM Conference on Recommender Systems (RecSys)

2019 **Best Paper Award**, for paper "Are We Really Making Much Progress? A Worrying Analysis of Recent Neural Recommendation Approaches" [32], at the 13th ACM Conference on Recommender Systems (RecSys)
Best Reviewer Nomination, 13th ACM Conference on Recommender Systems (RecSys)

2018 **2nd place in the ACM RecSys Challenge**, sponsored by **Spotify** at the 12th ACM Conference on Recommender Systems (RecSys)

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[1]https://aws.amazon.com/it/blogs/quantum-computing/implementing-a-recommendation-engine-with-amazon-braket/

Invited Conference Paper

[1] Maurizio Ferrari Dacrema, Paolo Cremonesi, and Dietmar Jannach. 2020. Methodological issues in recommender systems research (extended abstract). In *Proceedings of the Twenty-Ninth International Joint Conference on Artificial Intelligence, IJCAI 2020*. Christian Bessiere, editor. ijcai.org, 4706–4710. DOI: 10.24963/ijcai.2020/650. https://doi.org/10.24963/ijcai.2020/650.

Journal Publication

[2] Riccardo Pellini and Maurizio Ferrari Dacrema. 2024. Analyzing the effectiveness of quantum annealing with meta-learning. *Quantum Machine Intelligence*, 49 pages. **(To appear)**.

[3] Cesare Bernardis, Maurizio Ferrari Dacrema, Fernando Benjamín Pérez Maurera, Massimo Quadrana, Mario Scriminaci, and Paolo Cremonesi. 2022. From data analysis to intent-based recommendation: an industrial case study in the video domain. *IEEE Access*, 10, 14779–14796. DOI: 10.1109/ACCESS.2022.3148434. https://doi.org/10.1109/ACCESS.2022.3148434.

[4] Costantino Carugno, Maurizio Ferrari Dacrema, and Paolo Cremonesi. 2022. Evaluating the job shop scheduling problem on a d-wave quantum annealer. *Nature Scientific Reports*, 12, 1, (April 2022), 6539–6550. ISSN: 2045-2322. DOI: 10.1038/s41598-022-10169-0. https://doi.org/10.1038/s41598-022-10169-0.

[5] Maurizio Ferrari Dacrema, Nicolò Felicioni, and Paolo Cremonesi. 2022. Offline evaluation of recommender systems in a user interface with multiple carousels. *Frontiers Big Data*, 5, 21 pages. ISSN: 2624-909X. DOI: 10.3389/fdata.2022.910030. https://doi.org/10.3389/fdata.2022.910030.

[6] Maurizio Ferrari Dacrema, Simone Boglio, Paolo Cremonesi, and Dietmar Jannach. 2021. A troubling analysis of reproducibility and progress in recommender systems research. *ACM Trans. Inf. Syst.*, 39, 2, 20:1–20:49. DOI: 10.1145/3434185. https://doi.org/10.1145/3434185.

[7] Riccardo Nembrini, Maurizio Ferrari Dacrema, and Paolo Cremonesi. 2021. Feature selection for recommender systems with quantum computing. *Entropy*, 23, 8, 970. DOI: 10.3390/e23080970. https://doi.org/10.3390/e23080970.

[8] Yashar Deldjoo, Maurizio Ferrari Dacrema, Mihai Gabriel Constantin, Hamid Eghbal-zadeh, Stefano Cereda, Markus Schedl, Bogdan Ionescu, and Paolo Cremonesi. 2019. Movie genome: alleviating new item cold start in movie recommendation. *User Model. User Adapt. Interact.*, 29, 2, 291–343. DOI: 10.1007/s11257-019-09221-y. https://doi.org/10.1007/s11257-019-09221-y.

Book Chapter

[9] Maurizio Ferrari Dacrema, Iván Cantador, Ignacio Fernández-Tobías, Shlomo Berkovsky, and Paolo Cremonesi. 2022. Design and evaluation of cross-domain recommender systems. In *Recommender Systems Handbook*. Francesco Ricci, Lior Rokach, and Bracha Shapira, editors. Springer US, New York, NY, 485–516. ISBN: 978-1-0716-2197-4. DOI: 10.1007/978-1-0716-2197-4_13. https://doi.org/10.1007/978-1-0716-2197-4_13.

[10] Paolo Cremonesi, Franca Garzotto, and Maurizio Ferrari Dacrema. 2018. User preference sources: explicit vs. implicit feedback. In *Collaborative Recommendations - Algorithms, Practical Challenges and Applications*. Shlomo Berkovsky, Iván Cantador, and Domonkos Tikk, editors. WorldScientific, 233–252. DOI: 10.1142/9789813275355_0007. https://doi.org/10.1142/9789813275355_0007.

Conference Paper

[11] Andrea Pasin, Maurizio Ferrari Dacrema, Paolo Cremonesi, and Nicola Ferro. 2024. Overview of QuantumCLEF 2024: the quantum computing challenge for information retrieval and recommender systems at CLEF. In *Experimental IR Meets Multilinguality, Multimodality, and Interaction. Proceedings of the Fifteenth International Conference of the CLEF Association (CLEF 2024)*. Lorraine Goeuriot, Philippe Mulhem, Georges Quénot, Didier Schwab, Laure Soulier, Giorgio Maria Di Nunzio, Petra Galuščáková, Alba García Seco de Herrera, Guglielmo Faggioli, and Nicola Ferro, editors. **(To appear)**, 23 pages.

[12] Maurizio Ferrari Dacrema, Andrea Pasin, Paolo Cremonesi, and Nicola Ferro. 2024. Using and evaluating quantum computing for information retrieval and recommender systems. In *SIGIR '24: The 47th International ACM SIGIR Conference on Research and Development in Information Retrieval, Washington, USA, July 14 - 18, 2024*. **(To appear)**, 4 pages.

[13] Andrea Pasin, Maurizio Ferrari Dacrema, Paolo Cremonesi, and Nicola Ferro. 2024. QuantumCLEF - Quantum computing at CLEF. In *Advances in Information Retrieval - 46th European Conference on Information Retrieval, ECIR 2024, Glasgow, UK, March 24-28, 2024, Proceedings, Part V* (Lecture Notes in Computer Science). Nazli Goharian, Nicola Tonellotto, Yulan He, Aldo Lipani, Graham McDonald, Craig Macdonald, and Iadh Ounis, editors. Volume 14612. Springer, 482–489. DOI: 10.1007/978-3-031-56069-9_66. https://doi.org/10.1007/978-3-031-56069-9%5C_66.

[14] Maurizio Ferrari Dacrema, Andrea Pasin, Paolo Cremonesi, and Nicola Ferro. 2024. Quantum computing for information retrieval and recommender systems. In *Advances in Information Retrieval - 46th European Conference on Information Retrieval, ECIR 2024, Glasgow, UK, March 24-28, 2024, Proceedings, Part V* (Lecture Notes in Computer Science). Nazli Goharian, Nicola Tonellotto, Yulan He, Aldo Lipani, Graham McDonald, Craig Macdonald, and Iadh Ounis, editors. Volume 14612. Springer, 358–362. DOI: 10.1007/978-3-031-56069-9_47. https://doi.org/10.1007/978-3-031-56069-9%5C_47.

[15] Maurizio Ferrari Dacrema, Pablo Castells, Justin Basilico, and Paolo Cremonesi. 2023. Workshop on learning and evaluating recommendations with impressions (LERI). In *Proceedings of the 17th ACM Conference on Recommender Systems, RecSys 2023, Singapore, Singapore, September 18-22, 2023*. Jie Zhang, Li Chen, Shlomo Berkovsky, Min Zhang, Tommaso Di Noia, Justin Basilico, Luiz Pizzato, and Yang Song, editors. ACM, 1248–1251. DOI: 10.1145/3604915.3608756. https://doi.org/10.1145/3604915.3608756.

[16] Gloria Turati, Maurizio Ferrari Dacrema, and Paolo Cremonesi. 2023. Benchmarking adaptive variational quantum algorithms on QUBO instances. In *IEEE International Conference on Quantum Computing and Engineering, QCE 2023, Bellevue, WA, USA, September 17-22, 2023*. Brian La Cour, Lia Yeh, and Marek Osinski, editors. IEEE, 407–413. DOI: 10.1109/QCE57702.2023.00053. https://doi.org/10.1109/QCE57702.2023.00053.

[17] Andrea Pasin, Maurizio Ferrari Dacrema, Paolo Cremonesi, and Nicola Ferro. 2023. qCLEF: A proposal to evaluate quantum annealing for information retrieval and recommender systems. In *Experimental IR Meets Multilinguality, Multimodality, and Interaction - 14th International Conference of the CLEF Association, CLEF 2023, Thessaloniki, Greece, September 18-21, 2023, Proceedings* (Lecture Notes in Computer Science). Avi Arampatzis, Evangelos Kanoulas, Theodora Tsikrika, Stefanos Vrochidis, Anastasia Giachanou, Dan Li, Mohammad Aliannejadi, Michalis Vlachos, Guglielmo Faggioli, and Nicola Ferro, editors. Volume 14163. Springer, 97–108. DOI: 10.1007/978-3-031-42448-9_9. https://doi.org/10.1007/978-3-031-42448-9%5C_9.

[18] Riccardo Pellini, Maurizio Ferrari Dacrema, and Paolo Cremonesi. 2023. Assessing how the structure of the qubo problem affects the effectiveness of quantum annealing. In *Adiabatic Quantum Computing, AQC 2023, Albuquerque, New Mexico, USA, June 19-23, 2023*, 2 pages.

[19] Nicolò Felicioni, Maurizio Ferrari Dacrema, Marcello Restelli, and Paolo Cremonesi. 2022. Off-policy evaluation with deficient support using side information. In *NeurIPS*, 15 pages. http://papers.nips.cc/paper%5C_files/paper/2022/hash/c32be49c09eec3aad1f2bb587543e7f6-Abstract-Conference.html.

[20] Riccardo Nembrini, Costantino Carugno, Maurizio Ferrari Dacrema, and Paolo Cremonesi. 2022. Towards recommender systems with community detection and quantum computing. In *RecSys '22: Sixteenth ACM Conference on Recommender Systems, Seattle, WA, USA, September 18 - 23, 2022*. Jennifer Golbeck, F. Maxwell Harper, Vanessa Murdock, Michael D. Ekstrand, Bracha Shapira, Justin Basilico, Keld T. Lundgaard, and Even Oldridge, editors. ACM, 579–585. DOI: 10.1145/3523227.3551478. https://doi.org/10.1145/3523227.3551478.

[21] Fernando Benjamín Pérez Maurera, Maurizio Ferrari Dacrema, and Paolo Cremonesi. 2022. Towards the evaluation of recommender systems with impressions. In *RecSys '22: Sixteenth ACM Conference on Recommender Systems, Seattle, WA, USA, September 18 - 23, 2022*. Jennifer Golbeck, F. Maxwell Harper, Vanessa Murdock, Michael D. Ekstrand, Bracha Shapira, Justin Basilico, Keld T. Lundgaard, and Even Oldridge, editors. ACM, 610–615. DOI: 10.1145/3523227.3551483. https://doi.org/10.1145/3523227.3551483.

[22] Pietro Chiavassa, Andrea Marchesin, Ignazio Pedone, Maurizio Ferrari Dacrema, and Paolo Cremonesi. 2022. Virtual network function embedding with quantum annealing. In *IEEE International Conference on Quantum Computing and Engineering, QCE 2022, Broomfield, CO, USA, September 18-23, 2022*. IEEE, 282–291. DOI: 10.1109/QCE53715.2022.00048. https://doi.org/10.1109/QCE53715.2022.00048.

[23] Gloria Turati, Maurizio Ferrari Dacrema, and Paolo Cremonesi. 2022. Feature selection for classification with QAOA. In *IEEE International Conference on Quantum Computing and Engineering, QCE 2022, Broomfield, CO, USA, September 18-23, 2022*. IEEE, 782–785. DOI: 10.1109/QCE53715.2022.00117. https://doi.org/10.1109/QCE53715.2022.00117.

[24] Maurizio Ferrari Dacrema, Fabio Moroni, Riccardo Nembrini, Nicola Ferro, Guglielmo Faggioli, and Paolo Cremonesi. 2022. Towards feature selection for ranking and classification exploiting quantum annealers. In *SIGIR '22: The 45th International ACM SIGIR Conference on Research and Development in Information Retrieval, Madrid, Spain, July 11 - 15, 2022*. Enrique Amigó, Pablo Castells, Julio Gonzalo, Ben Carterette, J. Shane Culpepper, and Gabriella Kazai, editors. ACM, 2814–2824. DOI: 10.1145/3477495.3531755. https://doi.org/10.1145/3477495.3531755.

[25] Fernando Benjamín Pérez Maurera, Maurizio Ferrari Dacrema, and Paolo Cremonesi. 2022. An evaluation study of generative adversarial networks for collaborative filtering. In *Advances in Information Retrieval - 44th European Conference on IR Research, ECIR 2022, Stavanger, Norway, April 10-14, 2022, Proceedings, Part I* (Lecture Notes in Computer Science). Matthias Hagen, Suzan Verberne, Craig Macdonald, Christin Seifert, Krisztian Balog, Kjetil Nørvåg, and Vinay Setty, editors. Volume 13185. Springer, 671–685. DOI: 10.1007/978-3-030-99736-6_45. https://doi.org/10.1007/978-3-030-99736-6_45.

[26] Maurizio Ferrari Dacrema. 2021. Demonstrating the equivalence of list based and aggregate metrics to measure the diversity of recommendations (student abstract). In *Thirty-Fifth AAAI Conference on Artificial Intelligence, AAAI 2021, Thirty-Third Conference on Innovative Applications of Artificial Intelligence, IAAI 2021, The Eleventh Symposium on Educational Advances in Artificial Intelligence, EAAI 2021, Virtual Event, February 2-9, 2021*. AAAI Press, 15779–15780. https://ojs.aaai.org/index.php/AAAI/article/view/17886.

[27] Maurizio Ferrari Dacrema, Nicolò Felicioni, and Paolo Cremonesi. 2021. Optimizing the selection of recommendation carousels with quantum computing. In *RecSys '21: Fifteenth ACM Conference on Recommender Systems, Amsterdam, The Netherlands, 27 September 2021 - 1 October 2021*. Humberto Jesús Corona Pampín, Martha A. Larson, Martijn C. Willemsen, Joseph A. Konstan, Julian J. McAuley, Jean Garcia-Gathright, Bouke Huurnink, and Even Oldridge, editors. ACM, 691–696. DOI: 10.1145/3460231.3478853. https://doi.org/10.1145/3460231.3478853.

[28] Nicolò Felicioni, Maurizio Ferrari Dacrema, and Paolo Cremonesi. 2021. A methodology for the offline evaluation of recommender systems in a user interface with multiple carousels. In *Adjunct Publication of the 29th ACM Conference on User Modeling, Adaptation and Personalization, UMAP 2021, Utrecht, The Netherlands, June 21-25, 2021*. Judith Masthoff, Eelco Herder, Nava Tintarev, and Marko Tkalcic, editors. ACM, 10–15. DOI: 10.1145/3450614.3461680. https://doi.org/10.1145/3450614.3461680.

[29] Nicolò Felicioni, Maurizio Ferrari Dacrema, and Paolo Cremonesi. 2021. Measuring the user satisfaction in a recommendation interface with multiple carousels. In *IMX '21: ACM International Conference on Interactive Media Experiences, Virtual Event, USA, June 21-23, 2021*. ACM, 212–217. DOI: 10.1145/3452918.3465493. https://doi.org/10.1145/3452918.3465493.

[30] Maurizio Ferrari Dacrema, Federico Parroni, Paolo Cremonesi, and Dietmar Jannach. 2020. Critically examining the claimed value of convolutions over user-item embedding maps for recommender systems. In *CIKM '20: The 29th ACM International Conference on Information and Knowledge Management, Virtual Event, Ireland, October 19-23, 2020*. Mathieu d'Aquin, Stefan Dietze, Claudia Hauff, Edward Curry, and Philippe Cudré-Mauroux, editors. ACM, 355–363. DOI: 10.1145/3340531.3411901. https://doi.org/10.1145/3340531.3411901.

[31] Fernando Benjamín Pérez Maurera, Maurizio Ferrari Dacrema, Lorenzo Saule, Mario Scriminaci, and Paolo Cremonesi. 2020. Contentwise impressions: an industrial dataset with impressions included. In *CIKM '20: The 29th ACM International Conference on Information and Knowledge Management, Virtual Event, Ireland, October 19-23, 2020*. Mathieu d'Aquin, Stefan Dietze, Claudia Hauff, Edward Curry, and Philippe Cudré-Mauroux, editors. ACM, 3093–3100. DOI: 10.1145/3340531.3412774. https://doi.org/10.1145/3340531.3412774.

[32] Maurizio Ferrari Dacrema, Paolo Cremonesi, and Dietmar Jannach. 2019. Are we really making much progress? A worrying analysis of recent neural recommendation approaches. In *Proceedings of the 13th ACM Conference on Recommender Systems, RecSys 2019, Copenhagen, Denmark, September 16-20, 2019*. Toine Bogers, Alan Said, Peter Brusilovsky, and Domonkos Tikk, editors. **(Best ACM Long Paper Award)**. ACM, 101–109. DOI: 10.1145/3298689.3347058. https://doi.org/10.1145/3298689.3347058.

[33] Cesare Bernardis, Maurizio Ferrari Dacrema, and Paolo Cremonesi. 2019. Estimating confidence of individual user predictions in item-based recommender systems. In *Proceedings of the 27th ACM Conference on User Modeling, Adaptation and Personalization, UMAP 2019, Larnaca, Cyprus, June 9-12, 2019*. George Angelos Papadopoulos, George Samaras, Stephan Weibelzahl, Dietmar Jannach, and Olga C. Santos, editors. ACM, 149–156. DOI: 10.1145/3320435.3320453. https://doi.org/10.1145/3320435.3320453.

[34] Francesco Amigoni, Maurizio Ferrari Dacrema, Alessandro Donati, Christian Laroque, Michèle Lavagna, and Alessandro Riva. 2018. Aggregating models for anomaly detection in space systems: results from the FCTMAS study. In *Intelligent Autonomous Systems 15 - Proceedings of the 15th International Conference IAS-15, Baden-Baden, Germany, June 11-15, 2018* (Advances in Intelligent Systems and Computing). Marcus Strand, Rüdiger Dillmann, Emanuele Menegatti, and Stefano Ghidoni, editors. Volume 867. Springer, 142–160. DOI: 10.1007/978-3-030-01370-7_12. https://doi.org/10.1007/978-3-030-01370-7_12.

[35] Cesare Bernardis, Maurizio Ferrari Dacrema, and Paolo Cremonesi. 2018. A novel graph-based model for hybrid recommendations in cold-start scenarios. *Late-breaking results at RecSys '18: Twelfth ACM Conference on Recommender Systems*, abs/1808.10664, 2 pages. arXiv: 1808.10664. http://arxiv.org/abs/1808.10664.

[36] Maurizio Ferrari Dacrema and Paolo Cremonesi. 2018. Eigenvalue analogy for confidence estimation in item-based recommender systems. *Late-breaking results at RecSys '18: Twelfth ACM Conference on Recommender Systems*, abs/1809.02052, 2 pages. arXiv: 1809.02052. http://arxiv.org/abs/1809.02052.

Workshop Paper

[37] Paolo Basso, Arturo Benedetti, Nicola Cecere, Alessandro Maranelli, Salvatore Marragony, Samuele Peri, Andrea Riboni, Alessandro Verosimile, Davide Zanutto, and Maurizio Ferrari Dacrema. 2023. Pessimistic rescaling and distribution shift of boosting models for impression-aware online advertising recommendation. In *ACM RecSys Challenge 2023, Singapore, 19 September 2023*. ACM, 33–38. DOI: 10.1145/3626221.3627288. https://doi.org/10.1145/3626221.3627288.

[38] Gloria Turati, Maurizio Ferrari Dacrema, and Paolo Cremonesi. 2023. Benchmarking adaptive variational quantum algorithms on QUBO instances (extended abstract). In *Proceedings of the International Workshop on AI for Quantum and Quantum for AI (AIQxQIA 2023) co-located with 22nd International Conference of the Italian Association for Artificial Intelligence (AIxIA 2023), November 6–9, 2023, Roma Tre University, Rome, Italy.* (CEUR Workshop Proceedings). Volume 3586. CEUR-WS.org, 2 pages. https://ceur-ws.org/Vol-3586/poster2.pdf.

[39] Rccardo Pellini, Maurizio Ferrari Dacrema, and Paolo Cremonesi. 2023. Does the structure of the QUBO problem affect the effectiveness of quantum annealing? an empirical perspective (extended abstract). In *Proceedings of the International Workshop on AI for Quantum and Quantum for AI (AIQxQIA 2023) co-located with 22nd International Conference of the Italian Association for Artificial Intelligence (AIxIA 2023), November 6–9, 2023, Roma Tre University, Rome, Italy.* (CEUR Workshop Proceedings). Volume 3586. CEUR-WS.org, 2 pages. `https://ceur-ws.org/Vol-3586/poster1.pdf`.

[40] Fernando B. Pérez Maurera, Maurizio Ferrari Dacrema, Pablo Castells, and Paolo Cremonesi. 2023. Characterizing impression-aware recommender systems. In *Proceedings of the Workshop on Learning and Evaluating Recommendations with Impressions co-located with the 17th ACM Conference on Recommender Systems (RecSys 2023), Singapore, September 19th, 2023* (CEUR Workshop Proceedings). Maurizio Ferrari Dacrema, Pablo Castells, Justin Basilico, Paolo Cremonesi, and Fernando B. Pérez Maurera, editors. Volume 3590. CEUR-WS.org, 22–33. `https://ceur-ws.org/Vol-3590/paper2.pdf`.

[41] Fernando B. Pérez Maurera, Maurizio Ferrari Dacrema, Pablo Castells, and Paolo Cremonesi. 2023. Incorporating impressions to graph-based recommenders. In *Proceedings of the Workshop on Learning and Evaluating Recommendations with Impressions co-located with the 17th ACM Conference on Recommender Systems (RecSys 2023), Singapore, September 19th, 2023* (CEUR Workshop Proceedings). Maurizio Ferrari Dacrema, Pablo Castells, Justin Basilico, Paolo Cremonesi, and Fernando B. Pérez Maurera, editors. Volume 3590. CEUR-WS.org, 62–67. `https://ceur-ws.org/Vol-3590/short5.pdf`.

[42] Fernando Benjamín Pérez Maurera, Maurizio Ferrari Dacrema, Pablo Castells, and Paolo Cremonesi. 2023. Impressions in recommender systems: present and future. In *Proceedings of the 13th Italian Information Retrieval Workshop (IIR 2023), Pisa, Italy, June 8-9, 2023* (CEUR Workshop Proceedings). Franco Maria Nardini, Nicola Tonellotto, Guglielmo Faggioli, and Antonio Ferrara, editors. Volume 3448. CEUR-WS.org, 97–104. `https://ceur-ws.org/Vol-3448/paper-23.pdf`.

[43] Riccardo Pellini, Maurizio Ferrari Dacrema, and Paolo Cremonesi. 2023. Towards improved QUBO formulations of IR tasks for quantum annealers. In *Proceedings of the 13th Italian Information Retrieval Workshop (IIR 2023), Pisa, Italy, June 8-9, 2023* (CEUR Workshop Proceedings). Franco Maria Nardini, Nicola Tonellotto, Guglielmo Faggioli, and Antonio Ferrara, editors. Volume 3448. CEUR-WS.org, 137–142. `https://ceur-ws.org/Vol-3448/paper-05.pdf`.

[44] Nicola Della Volpe, Lorenzo Mainetti, Alessio Martignetti, Andrea Menta, Riccardo Pala, Giacomo Polvanesi, Francesco Sammarco, Fernando Benjamin Perez Maurera, Cesare Bernardis, and Maurizio Ferrari Dacrema. 2022. Lightweight model for session-based recommender systems with seasonality information in the fashion domain. In *Proceedings of the Recommender Systems Challenge 2022* (RecSysChallenge '22). Association for Computing Machinery, Seattle, WA, USA, 18–23. ISBN: 9781450398565. DOI: 10.1145/3556702.3556829. `https://doi.org/10.1145/3556702.3556829`.

[45] Maurizio Ferrari Dacrema, Fabio Moroni, Riccardo Nembrini, Nicola Ferro, Guglielmo Faggioli, and Paolo Cremonesi. 2022. Feature selection via quantum annealers for ranking and classification tasks. In *Proceedings of the 12th Italian Information Retrieval Workshop 2022, Milan, Italy, June 29-30, 2022* (CEUR Workshop Proceedings). Gabriella Pasi, Paolo Cremonesi, Salvatore Orlando, Markus Zanker, David Massimo, and Gloria Turati, editors. Volume 3177. CEUR-WS.org. `http://ceur-ws.org/Vol-3177/paper11.pdf`.

[46] Maurizio Ferrari Dacrema, Nicolò Felicioni, and Paolo Cremonesi. 2022. Evaluating recommendations in a user interface with multiple carousels. In *Proceedings of the 12th Italian Information Retrieval Workshop 2022, Milan, Italy, June 29-30, 2022* (CEUR Workshop Proceedings). Gabriella Pasi, Paolo Cremonesi, Salvatore Orlando, Markus Zanker, David Massimo, and Gloria Turati, editors. Volume 3177. CEUR-WS.org. `http://ceur-ws.org/Vol-3177/paper10.pdf`.

[47] Fernando Benjamín Pérez Maurera, Maurizio Ferrari Dacrema, and Paolo Cremonesi. 2022. Replication of recommender systems with impressions. In *Proceedings of the 12th Italian Information Retrieval Workshop 2022, Milan, Italy, June 29-30, 2022* (CEUR Workshop Proceedings). Gabriella Pasi, Paolo Cremonesi, Salvatore Orlando, Markus Zanker, David Massimo, and Gloria Turati, editors. Volume 3177. CEUR-WS.org. `http://ceur-ws.org/Vol-3177/paper20.pdf`.

[48] Fernando Benjamín Pérez Maurera, Maurizio Ferrari Dacrema, and Paolo Cremonesi. 2022. Replication of collaborative filtering generative adversarial networks on recommender systems. In *Proceedings of the 12th Italian Information Retrieval Workshop 2022, Milan, Italy, June 29-30, 2022* (CEUR Workshop Proceedings). Gabriella Pasi, Paolo Cremonesi, Salvatore Orlando, Markus Zanker, David Massimo, and Gloria Turati, editors. Volume 3177. CEUR-WS.org. `http://ceur-ws.org/Vol-3177/paper19.pdf`.

[49] Luca Carminati, Giacomo Lodigiani, Pietro Maldini, Samuele Meta, Stiven Metaj, Arcangelo Pisa, Alessandro Sanvito, Mattia Surricchio, Fernando Benjamín Pérez Maurera, Cesare Bernardis, and Maurizio Ferrari Dacrema. 2021. Lightweight and scalable model for tweet engagements predictions in a resource-constrained environment. In *RecSysChallenge '21: Proceedings of the Recommender Systems Challenge 2021 (RecSysChallenge 2021), October 1, 2021, Amsterdam, Netherlands*. ACM, 8 pages. DOI: 10.1145/3487572.3487597. `https://doi.org/10.1145/3487572.3487597`.

[50] Nicolò Felicioni, Maurizio Ferrari Dacrema, Fernando Benjamín Pérez Maurera, and Paolo Cremonesi. 2021. Measuring the ranking quality of recommendations in a two dimensional carousel setting. In *International Workshop on Industrial Recommendation Systems (IRS '21) at KDD '21, August 15, 2021*, 6 pages.

[51] Nicolò Felicioni, Andrea Donati, Luca Conterio, Luca Bartoccioni, Davide Yi Xian Hu, Cesare Bernardis, and Maurizio Ferrari Dacrema. 2020. Multi-objective blended ensemble for highly imbalanced sequence aware tweet engagement prediction. In *RecSys Challenge '20: Proceedings of the Recommender Systems Challenge 2020, Virtual Event Brazil, September, 2020*. ACM, 29–33. `https://dl.acm.org/doi/10.1145/3415959.3415998`.

[52] Edoardo D'Amico, Giovanni Gabbolini, Daniele Montesi, Matteo Moreschini, Federico Parroni, Federico Piccinini, Alberto Rossettini, Alessio Russo Introito, Cesare Bernardis, and Maurizio Ferrari Dacrema. 2019. Leveraging laziness, browsing-pattern aware stacked models for sequential accommodation learning to rank. In *Proceedings of the Workshop on ACM Recommender Systems Challenge, Copenhagen, Denmark, September 2019*. Peter Knees, Yashar Deldjoo, Farshad Bakhshandegan Moghaddam, Jens Adam-

czak, Gerard Paul Leyson, and Philipp Monreal, editors. ACM, 7:1–7:5. DOI: 10.1145/3359555.3359563. https://doi.org/10.1145/3359555.3359563.

[53] Luca Luciano Costanzo, Yashar Deldjoo, Maurizio Ferrari Dacrema, Markus Schedl, and Paolo Cremonesi. 2019. Towards evaluating user profiling methods based on explicit ratings on item features. In *Proceedings of the 6th Joint Workshop on Interfaces and Human Decision Making for Recommender Systems co-located with 13th ACM Conference on Recommender Systems(RecSys 2019), Copenhagen, Denmark, September 19, 2019* (CEUR Workshop Proceedings). Peter Brusilovsky, Marco de Gemmis, Alexander Felfernig, Pasquale Lops, John O'Donovan, Giovanni Semeraro, and Martijn C. Willemsen, editors. Volume 2450. CEUR-WS.org, 72–76. http://ceur-ws.org/Vol-2450/short4.pdf.

[54] Maurizio Ferrari Dacrema, Alberto Gasparin, and Paolo Cremonesi. 2018. Deriving item features relevance from collaborative domain knowledge. In *Proceedings of the Workshop on Knowledge-aware and Conversational Recommender Systems 2018 co-located with 12th ACM Conference on Recommender Systems, KaRS@RecSys 2018, Vancouver, Canada, October 7, 2018* (CEUR Workshop Proceedings). Vito Walter Anelli, Tommaso Di Noia, Pasquale Lops, Cataldo Musto, Markus Zanker, Pierpaolo Basile, Derek G. Bridge, and Fedelucio Narducci, editors. Volume 2290. CEUR-WS.org, 1–4. http://ceur-ws.org/Vol-2290/kars2018%5C_paper1.pdf.

[55] Sebastiano Antenucci, Simone Boglio, Emanuele Chioso, Ervin Dervishaj, Shuwen Kang, Tommaso Scarlatti, and Maurizio Ferrari Dacrema. 2018. Artist-driven layering and user's behaviour impact on recommendations in a playlist continuation scenario. In *Proceedings of the ACM Recommender Systems Challenge, RecSys Challenge 2018, Vancouver, BC, Canada, October 2, 2018*. ACM, 4:1–4:6. DOI: 10.1145/3267471.3267475. https://doi.org/10.1145/3267471.3267475.

[56] Paolo Cremonesi, Maurizio Ferrari Dacrema, Massimo Perini, and Filippo Calzavara. 2018. Item-based CF as an inverse eigenvalue problem. In *Italian Information Retrieval Workshop (IIR '18)*, 12 pages.

Industrial Conference Poster

[57] Riccardo Pellini, Maurizio Ferrari Dacrema, and Paolo Cremonesi. 2023. Assessing how the structure of the QUBO problem affects the effectiveness of quantum annealing. *3rd European Quantum Technologies Conference (EQTC), Hannover, Germany, October 16–18, 2023*, 1 page poster.

[58] Gloria Turati, Maurizio Ferrari Dacrema, and Paolo Cremonesi. 2023. A benchmark study of adaptative-VQAs on QUBO instances. *3rd European Quantum Technologies Conference (EQTC), Hannover, Germany, October 16–18, 2023*, 1 page poster.

[59] Riccardo Nembrini, Maurizio Ferrari Dacrema, and Paolo Cremonesi. 2023. Quantum annealing-assisted bipartite community detection for recommender systems. *3rd European Quantum Technologies Conference (EQTC), Hannover, Germany, October 16–18, 2023*, 1 page poster.

[60] Maurizio Ferrari Dacrema, Nicolò Felicioni, and Paolo Cremonesi. 2021. Personalizing video recommendation layout with quantum annealing. *2nd European Quantum Technologies Virtual Conference (EQTC), 29 November, 2021*, 1 page poster.

[61] Maurizio Ferrari Dacrema, Tang-Tang Zhou, Riccardo Nembrini, and Paolo Cremonesi. 2021. Quantum annealing linear regression for collaborative filtering recommendations. *2nd European Quantum Technologies Virtual Conference (EQTC), 29 November, 2021*, 1 page poster.

[62] Costantino Carugno, Maurizio Ferrari Dacrema, and Paolo Cremonesi. 2021. Reverse annealing improves solutions of job shop scheduling problems on a quantum annealer. *2nd European Quantum Technologies Virtual Conference (EQTC), 29 November, 2021*, 1 page poster.

[63] Riccardo Nembrini, Maurizio Ferrari Dacrema, Dario Cardamone, and Paolo Cremonesi. 2021. Quantum personalization: an application of quantum annealing recommender systems. *2nd European Quantum Technologies Virtual Conference (EQTC), 29 November, 2021*, 1 page poster.

Teaching Experience

COURSES WITH PRIMARY RESPONSIBILITY

2024-25	**Recommender Systems**, Professor (Master Level)	
2022-23	**Computer Science and Elements of Medical Informatics**, Professor (Bachelor Level)	
2020-21	**Applied Quantum Machine Learning**, Lecturer (PhD Level)	

TEACHING ASSISTANT AND TUTOR

2023-24	**Fundamentals of Computer Science**, Teaching Assistant (Bachelor Level)
	Recommender Systems, Teaching Assistant (Master Level)
	Quantum Computing, Teaching Assistant (Master Level)
2022-23	**Fundamentals of Computer Science**, Teaching Assistant and Tutor (Bachelor Level)
	Recommender Systems, Teaching Assistant (Master Level)
	Computer Science A, Tutor (Bachelor Level)
2021-22	**Fundamentals of Computer Science**, Teaching Assistant and Tutor (Bachelor Level)
	Recommender Systems, Teaching Assistant (Master Level)
	Computer Science A, Tutor (Bachelor Level)
2020-21	**Recommender Systems**, Teaching Assistant (Master Level)
	Fundamentals of Computer Science, Teaching Assistant and Tutor (Bachelor Level)
	Computer Science A, Tutor (Bachelor Level)
2019-20	**Recommender Systems**, Teaching Assistant (Master Level)
	Fundamentals of Computer Science, Tutor (Bachelor Level)
	Computer Science A, Tutor (Bachelor Level)
2018-19	**Recommender Systems**, Teaching Assistant (Master Level)
2017-18	**Recommender Systems**, Teaching Assistant (Master Level)
	Fundamentals of Computer Science, Lab Assistant (Bachelor Level)
2016-17	**Fundamentals of Computer Science**, Tutor (Bachelor Level)
	Software Engineering, Tutor (Bachelor Level)
	Computer Systems, Teaching Assistant (Master Level)
2015-16	**Software Engineering**, Tutor (Bachelor Level)
	Computer Science B, Tutor (Bachelor Level)
2014-15	**Software Engineering**, Tutor (Bachelor Level)
	Tutoring students with disabilities, Tutor (Bachelor Level)

Talks and Seminars

2024	**Tutorial presenter**, International ACM SIGIR Conference on Research and Development in Information Retrieval (SIGIR), "Using and Evaluating Quantum Computing for Information Retrieval and Recommender Systems" [12]
	Tutorial presenter, European Conference on Information Retrieval (ECIR), "Quantum Computing for Information Retrieval and Recommender Systems" [13]
	Invited seminar, Politecnico di Milano, School of Management, Observatory on Quantum Computing & Communication, "Basic Notions of Quantum Computing"
	Invited seminar, Politecnico di Milano, Department of Mathematics, "The Magic of Quantum Computers"

2021	**Invited seminar**, Politecnico di Bari, "Quantum Computing for Machine Learning"
	Invited seminar, Politecnico di Milano, presenting my PhD thesis, winner of the "Prof. Florian Daniel" Award for best doctoral thesis in Computer Science Engineering
	Invited paper presentation, International ACM SIGIR Conference on Research and Development in Information Retrieval (SIGIR), "A Troubling Analysis of Reproducibility and Progress in Recommender Systems Research" [6]
	Invited seminar, Farfetch, "Are We Really Making Much Progress? A Worrying Analysis of Recent Neural Recommendation Approaches" [32]
	Invited podcast, Data Exchange, "The state of research in recommendation systems"
	Talk, Qubits, D-Wave, "Feature Selection for Recommender Systems with Quantum Computing" [7]
2020	**Invited paper presentation**, International Joint Conferences on Artificial Intelligence (IJCAI), "Methodological Issues in Recommender Systems Research (Extended Abstract)" [1]
	Invited talk, Aggregate Intellect, "Are We Really Making Much Progress? A Worrying Analysis of Recent Neural Recommendation Approaches" [32]

Service

2024	**Conference Program Co-Chair**, Co-Chair responsible for the *Demo and Late-Breaking Results* track the at the 18th ACM Conference on Recommender Systems (RecSys)
	Evaluation Lab Organizer, Lab on "QuantumCLEF - Quantum Computing at CLEF" at the Conference and Labs of the Evaluation Forum (CLEF)
	Reviewer for journals, Quantum Information Processing (Springer), ACM Transactions on Information Systems (TOIS), ACM Transactions on Recommender Systems (TORS)
2023	**Workshop Organizer**, Workshop on "Learning and Evaluating Recommendations with Impressions" at the 17th ACM Conference on Recommender Systems (RecSys)
	Reviewer for journals, ACM Transactions on Information Systems (TOIS), ACM Transactions on Recommender Systems (TORS)
2022-present	**Member of the Scientific Board**, Observatory for Quantum Technologies, School of Management, Politecnico di Milano
2022	**Guest Editor**, Special Issue "Quantum Computing Applied" (MDPI Electronics)
	Session Chair, Fourth Knowledge-aware and Conversational Recommender Systems Workshop located at the 16th ACM Conference on Recommender Systems, RecSys
	Session Chair and Local organization committee, Italian Information Retrieval Workshop
2021	**Reviewer for journals**, Computers & Security (Elsevier), Information Processing and Management (Elsevier), ACM Transactions on Information Systems, IEEE Transactions on Multimedia, IEEE Transactions on Service Computing
2020	**Reviewer for journals**, IEEE Transactions on Emerging Topics in Computing, Future Generation Computer Systems, Neurocomputing (Elsevier)
2018-present	**Program Committee Member**, RecSys, SIGIR, KDD, CIKM, WWW, WSDM, UMAP, LREC, ICWE

Advisor of Doctoral Students and Master Students

2023-present	**Riccardo Pellini**, Advisor, Ph.D. program in Information Technology, Politecnico di Milano
2023-present	**Andrea Pisani**, Co-Advisor, Italian National Ph.D. program in Artificial Intelligence for Industry 4.0, Politecnico di Milano
2021-present	**Gloria Turati**, Co-advisor, Ph.D. program in Information Technology, Politecnico di Milano
2021-present	**Nicolò Felicioni**, Co-advisor, Ph.D. program in Information Technology, Politecnico di Milano
2020-present	**Riccardo Nembrini**, Co-advisor, Ph.D. program in Information Technology, Politecnico di Milano
2020-present	**Costantino Carugno**, Co-advisor, Ph.D. program in Information Technology, Politecnico di Milano
2019-2024	**Fernando Benjamín Pérez Maurera**, Co-advisor, Ph.D. program in Information Technology, Politecnico di Milano
2016-present	**Advisor of 13 master students, Co-advisor of 18 master students**, Master Degree in Computer Science and Engineering, Politecnico di Milano

Member of University Bodies and Committees

2020-2022	**Department Council**, Representative of the Research Assistants, Politecnico di Milano
2014-2015	**Academic Senate**, Politecnico di Milano
2012-2013	**University Assessment Commission (Nucleo di Valutazione)**, Politecnico di Milano
2011-2014	**School of Industrial and Information Engineering**, Member of the School Council, Joint teachers-students Commission and Council of Course of Study in Engineer of Computer Systems

Quality Assurance of Higher Education Institutions

National Accreditations

2022	**Italian National Agency for the Evaluation of Universities and Research Institutes (ANVUR)**, Member of one of the three commissions charged to test the new proposed national accreditation framework AVA3 with an on-site visit at Università degli Studi di Torino.
2020-2022	**ANVUR**, Member of the commission responsible for the initial accreditation of the proposals to establish new private Italian universities. The commission evaluated 10 proposals.
2019-2023	**ANVUR**, Register of experts in evaluation, Coordinator Profile
2016-present	**Italian Agency for the Quality Certification and EUR-ACE Accreditation of Engineering Programs (QUACING)**, Evaluator Student Profile, on-site visits: Università di Roma "La Sapienza", Università di Padova, Politecnico di Torino, Università Carlo Cattaneo, Università di Salerno. Some universities received multiple visits.
2014-2021	**ANVUR**, Register of experts in evaluation, Student Profile. Accreditation on-site visits: Università Niccolò Cusano, Università di Modena e Reggio Emilia, Università degli studi di Torino, Politecnico di Torino, Università Commerciale Luigi Bocconi, Università IUAV di Venezia, Università del Piemonte Orientale, Università degli Studi di Palermo, Università di Cagliari, Università Telematica Pegaso, Università degli Studi di Trento, Università Ca' Foscari, Università di Bari, Università di Pisa, Università di Parma, Politecnico di Bari, Università di Scienze Gastronomiche, Università per Stranieri di Perugia.

INTERNATIONAL EVALUATIONS

2024   **Kosovo Accreditation Agency (KAA)**, Evaluator for the Institutional Accreditation of the UBT College and the AAB College, Kosovo.

2022   **Italian Agency for the Quality Certification and EUR-ACE Accreditation of Engineering Programs (QUACING)**, Evaluator for the Institutional Accreditation of the TEK-UP University, Tunisia.

2021   **Turkish Higher Education Quality Council (THEQC)**, International evaluator for the Institutional Accreditation of the Ahi Evran University, Türkiye.

2020   **Accreditation Organisation of the Netherlands and Flanders (NVAO)**, EUniQ Project for the Development of a European framework for comprehensive quality assurance of European universities (Erasmus+). Member of the regular panel for the University Network for Innovation Technology and Engineering (UNITE).
        Accreditation Organisation of the Netherlands and Flanders (NVAO), Member of the Core Faculty Panel of the University of Luxemburg.

2018   **Agència per a la Qualitat del Sistema Universitari de Catalunya (AQU)**, TeSLA Project, Adaptive trust e-assessment system (Horizon 2020). Member of the regular panel for Pilot 3 at the Technical University of Sofia, Bulgaria.

2018-today   **International Expert on Quality Assurance in Higher Education Institutions**, Quality Agency for Higher Education (Latvia); Turkish Higher Education Quality Council (Türkiye); Agency for Higher Education of Republic of Srpska (Bosnia and Herzegovina); Accreditation Board of Quality Assurance Agency in Higher Education (Albania); Kosovo Accreditation Agency (Kosovo); National Center for Education Quality Enhancement (Georgia).

LECTURER IN COURSES

2018   **The Italian model for the accreditation of universities**, University of Verona, Italy

2016   **The Italian model for the accreditation of universities**, Politecnico di Milano, Italy
        The role of evaluation experts student profile, ANVUR - Italian National Agency For The Evaluation Of Universities And Research Institutes