

Ludovico Boratto

Leader nell'area di ricerca della group recommendation, co-autore di un libro e di oltre 50 articoli in riviste e conferenze Internazionali di prima fascia; oltre 1750 citazioni, h-index=23 (Google Scholar). Membro del comitato organizzativo delle più importanti conferenze in ambito Web. Supervisor e mentore di studenti di dottorato. Possessore dell'abilitazione nazionale di I fascia nei settori 01/B1 (Informatica) e 09/H1 (Sistemi di elaborazione delle informazioni).

Posizione corrente

- Ricercatore a Tempo Determinato di Tipo B (RTD-B)** Marzo 2021 - Presente
 Università di Cagliari [Cagliari, Italia]
 Dipartimento di Matematica e Informatica
Ricerca sui sistemi di ranking per gruppi e singoli utenti, che si occupano di bias algoritmico e la non discriminazione (fairness).

Posizioni precedenti

- Direttore di ricerca** Maggio 2016 - Aprile 2021
 Eurecat (Unità di Data Science and Big Data Analytics) [Python, Pandas, sklearn, Java]
Ho iniziato come ricercatore, per poi diventare ricercatore senior. Guido l'attività scientifica del gruppo, che consiste di 18 persone. L'unità porta avanti oltre 15 progetti Horizon 2020, di cui ne coordino 4. Attualmente supervisiono due dottorandi. Faccio ricerca nei sistemi di raccomandazione per gruppi di utenti ed utenti singoli, trattando problemi come il bias algoritmico e la non discriminazione (fairness).
- Ricercatore Postdoc** Marzo 2012 - Maggio 2016
 Università di Cagliari [Python, Pandas, sklearn, Java]
 Dipartimento di Matematica e Informatica
Ho fatto ricerca sui sistemi di raccomandazione, il clustering, la classificazione e l'analisi di social media. Ho vinto il premio come migliore articolo ad una conferenza Internazionale. Sono stato docente e tutor in corsi universitari di Sistemi Operativi e di Information filtering e recommender systems, per studenti di laurea triennale e magistrale e programmi di dottorato. Ho supervisionato 25 tesi triennali e magistrali e 2 tesi di dottorato.
- Ricercatore postdoc in visita** Marzo 2014 - Settembre 2014
 Yahoo!Research (Barcelona Lab) [Java]
Ho fatto ricerca sul mining di clique e pseudo-clique in network che si evolvono nel tempo, sotto la supervisione del Dr. Francesco Bonchi.
- Tirocinante** Giugno 2010 - Settembre 2010
 Yahoo!Research (Barcelona Lab) [Hadoop, Java]
Ho fatto ricerca volta all'individuazione di segmenti di mercato sulla base di query lof sotto la supervisione del Dr. Carlos Castillo e del Dr. Ingmar Weber.

Studi

- Dottorato in Informatica** Ottobre 2008 - Marzo 2012
 Università di Cagliari [Cagliari, Italia]
 Dipartimento di Matematica e Informatica
Supervisionato dal Dr. Salvatore Carta.
- Laurea Magistrale in Tecnologie Informatiche** Ottobre 2006 - Settembre 2008
 Università di Cagliari [Cagliari, Italia]
 Dipartimento di Matematica e Informatica
- Laurea triennale in Informatica** Ottobre 2003 - Settembre 2006
 Università di Cagliari [Cagliari, Italia]
 Dipartimento di Matematica e Informatica

Libri e Monografie

- Advances in Bias and Fairness in Information Retrieval** 2021
 with Stefano Faralli, Mirko Marras, Giovanni Stilo (Springer) [171 pagine]
Questo libro costituisce gli atti del Second International Workshop on Algorithmic Bias in Search and Recommendation. Gli articoli coprono argomenti che vanno dai motori di ricerca alla recommendation in applicazioni di incontri, formazione scolastica e social media, passando per l'impatto del bias di genere nei word embedding, fino a tool che esplorano il bias e la fairness nel Web.

- **Bias and Social Aspects in Search and Recommendation** 2020
con Stefano Faralli, Mirko Marras, Giovanni Stilo (Springer) [205 pagine]
Questo libro contiene gli atti del First International Workshop on Algorithmic Bias in Search and Recommendation. Gli articoli coprono argomenti che vanno dai motori di ricerca alla recommendation in applicazioni di incontri, formazione scolastica e social media, passando per l'impatto del bias di genere nei word embedding, fino a tool che esplorano il bias e la fairness nel Web.
- **Group Recommender Systems: An Introduction** 2018
con Alexander Felfernig, Martin Stettinger, Marko Tkalčič (Springer) [176 pagine]
Questo libro presenta i sistemi di raccomandazione per gruppi di utenti. Include una discussione di metodi di base per la group recommendation, di aspetti relazionati alla decisione in contesti di gruppo e applicazioni in questo dominio. Vengono inoltre discussi problemi di ricerca aperti, per ispirare nuova ricerca.

Publicazioni per topic

Indici a febbraio 2023

- **Google Scholar:** 1793 citazioni, H-index = 23
- **Scopus:** 828 citations, H-index = 17

Explainable recommendation

1. G. Balloccu, L. Boratto, G. Fenu, M. Marras, "Reinforcement recommendation reasoning through knowledge graphs for explanation path quality." *Knowledge Systems* **260**, 110,098 (2023).
2. G. Balloccu, L. Boratto, G. Fenu, M. Marras, "XRecSys: a framework for path reasoning quality in explainable recommendation," *Software* **14**, 100,404 (2022).
3. G. Balloccu, L. Boratto, G. Fenu, M. Marras, "Post processing recommender systems with knowledge graphs for recency, popularity, and diversity of explanations," in *The 45th International ACM SIGIR Conference on Research and Development in Information Retrieval, Madrid, Spain, July 11 - 15, 2022*, pp. 646–656 ACM (2022).
4. G. Balloccu, L. Boratto, G. Fenu, M. Marras, "Recency, popularity, and diversity of explanations in knowledge-based recommendation," in *Proceedings of the 12th Italian Information Retrieval Workshop 2022, Milan, Italy, June 29-30, 2022, CEUR Workshop Proceedings*, vol. 3177. CEUR-WS.org (2022).

Algorithmic bias and fairness in ranking and recommendation

5. E. Purificato, L. Boratto, E.W. De Luca, "Do graph neural networks build fair user models? assessing disparate impact and mistreatment in behavioural user profiling," in *Proceedings of the 31st ACM International Conference on Information & Knowledge Management, Atlanta, GA, USA, October 17-21, 2022*, pp. 4399–4407 ACM (2022).
6. M. Marras, L. Boratto, G. Ramos, G. Fenu, "Regulating group exposure for item providers in recommendation," in *SIGIR '22: The 45th International ACM SIGIR Conference on Research and Development in Information Retrieval, Madrid, Spain, July 11 - 15, 2022*, pp. 1839–1847 ACM (2022).
7. L. Boratto, G. Fenu, M. Marras, G. Medda, "Consumer fairness in recommender systems: Contextualizing definitions and mitigations," 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*, vol. 13185, pp. 552–566 Springer (2022).
8. G. Ramos, L. Boratto, M. Marras, "Robust reputation independence in ranking systems for multiple sensitive attributes." *Machine Learning* **111**(10), 3769–3796 (2022).
9. J. Saúde, G. Ramos, L. Boratto, and C. Caleiro, "A robust reputation-based group ranking system and its resistance to bribery," *ACM Transactions on Knowledge Discovery in Data*, vol. 16, no. 2, pp. 1–26:35, 2022.

10. E. Gómez, C. Shui Zhang, L. Boratto, M. Salamó, and G. Ramos, "Enabling cross-continent provider fairness in educational recommender systems," *Future Comput. Syst.*, vol. 127, pp.435-447, 2022.
11. E. Gómez, L. Boratto, and M. Salamó, "Provider fairness across continents in collaborative recommender systems," *Process. Manag.*, vol. 59, no. 1, p.102719, 2022.
12. M. Marras, L. Boratto, G. Ramos, and G. Fenu, "Equality of learning opportunity via individual fairness in personalized recommendations," *International Journal of Artificial Intelligence in Education*, **32**(3), 636-684 (2022).
13. L. Piras, L. Boratto, and G. Ramos, "Evaluating the prediction bias induced by label imbalance in multi-label classification," in *CIKM '21: The 30th ACM International Conference on Information and Knowledge Management, Virtual Event, Queensland, Australia, November 1 - 5, 2021*, ACM, 2021, pp. 3368-3372.
14. G. Ramos, L. Boratto, and M. Marras, "Reputation equity in ranking systems," in *CIKM '21: The 30th ACM International Conference on Information and Knowledge Management, Virtual Event, Queensland, Australia, November 1 - 5, 2021*, ACM, 2021, pp.3378-3382.
15. E. Gómez, C. S. Zhang, L. Boratto, M. Salamó, and M. Marras, "The winner takes all: Geographic imbalance and provider (un)fairness in educational recommender systems," in *SIAM 21: International ACM SIGIR Conference on Research and Development in Information Retrieval, Virtual Event, Canada, July 11-15, 2021*. ACM, 2021, pp.1808-1812.
16. E. Gómez, L. Boratto, and M. Salamó, "Disparate impact in item recommendation: geographic imbalance," in *Advances in Information Retrieval 43rd European Conference on IR Research, ECIR 2021, Virtual Event, March 28 - April 1, 2021, Proceedings, Part I*, ser. Lecture Notes in Computer Science, vol. 12656. Springer, 2021, pp.190-206.
17. A. Ariza, F. Fabbri, L. Boratto, and M. Salamó, "From the Beatles to Billie Holiday: Connecting provider representativeness and exposure in session-based recommender systems," in *Advances in Information Retrieval - 43rd European Conference on IR Research, ECIR 2021, Virtual Event, March 28 - April 1, 2021, Proceedings, Part II*, ser. Lecture Notes in Computer Science, vol. 12657. Springer, 2021, pp. 201-208.
18. L. Boratto, G. Fenu, and M. Marras, "Interplay between upsampling and regularization for provider fairness in recommender systems," *User Model. Adapt. Interact.*, vol. 31, no. 3, pp.421-455, 2021.
19. L. Boratto, G. Fenu, and M. Marras, "Connecting user and item perspectives in popularity debiasing collaborative recommendation," *Process. Manag.*, vol. 58, no. 1, p.102387, 2021.
20. G. Ramos and L. Boratto, "Reputation (in)dependence in ranking systems: Demographic influence over output disparities," in *Proceedings of the 43rd International ACM SIGIR conference on research and development in Information Retrieval, SIGIR 2020*. ACM, 2020, pp.2061-2064.
21. F. Fabbri, F. Bonchi, L. Boratto, and C. Castillo, "The effect of homophily on disparate visibility of minorities in people recommender systems," in *Proceedings of the Fourteenth International AAAI Conference on Web and Social Media, ICWSM 2020*, AAAI Press, 2020, pp.165-175.
22. L. Boratto, G. Fenu, and M. Marras, "The effect of algorithmic bias on recommender systems for massive open online courses," in *Advances in Information Retrieval 41st European Conference on IR Research, ECIR 2019, Proceedings, Part I*, ser. Lecture Notes in Computer Science, vol. 11437. Springer, 2019, pp.457-472.

Group recommendation

23. J.D. Silveira, M. Salamó, L. Boratto, "Enabling reproducibility in group recommender systems" in *Artificial Intelligence Research and Development - Proceedings of the 24th International Conference of the Catalan Association for Artificial Intelligence, CCIA 2022, Sitges, Spain, 19-21 October 2022*, *Frontiers in Artificial Intelligence and Applications*, vol. 356, pp.115-124. IOS Press (2022).

24. D. Contreras, M. Salamó, and L. Boratto, "Integrating collaboration and leadership in conversational group recommender systems," *ACM Trans. Syst.*, vol. 39, no. 4, pp.41:1–41:32, 2021.
25. L. Recalde, J. Mendieta, L. Boratto, L. Terán, C. Vaca, and G. Baquerizo, "Who you should not follow: Extracting word embeddings from tweets to identify groups of interest and hijackers in demonstration," *IEEE Trans. Emerging Topics Comput.*, vol. 7, no. 2, pp. 206–217, 2019.
26. L. Boratto, S. Carta, and G. Fenu, "Investigating the role of the rating prediction task in granularity-based group recommender systems and big data scenarios," *Information Sciences*, vol. 378, pp. 424–443, 2017.
27. L. Recalde, D.F. Nettleton, R. Baeza-Yates, and L. Boratto, "Detection of Trending Topic Communities: Bridging Content Creators and Distributors," in *Proceedings of the 28th ACM Conference on Hypertext and Social Media (Hypertext 2017)*, 2017.
28. L. Boratto, S. Carta, G. Fenu, F. Mulas, and P. Pilloni, "Influence of rating prediction on group recommendation's accuracy," *IEEE Intelligent Systems*, vol. 31, no. 6, pp.20–27, 2016.
29. L. Boratto, S. Carta, and G. Fenu, "Discovery and representation of the preferences of automatically detected groups: Exploiting the link between group modeling and clustering," *Future Generation Computer Systems*, vol. 64, pp. 165–174, 2016.
30. L. Boratto, S. Carta, and G. Fenu, "Analysis of the properties that affect the accuracy of a group recommender system," in *2016 Global Summit on Computer Information Technology (GSCIT)*, July 2016, pp.102–107.
31. L. Boratto and S. Carta, "ART: group recommendation approaches for automatically detected groups," *International Journal of Machine Learning & Cybernetics*, vol. 6, no. 6, pp. 953–980, 2015.
32. L. Boratto and S. Carta, "The rating prediction task in a group recommender system that automatically detects groups: architectures, algorithms, and performance evaluation," *International Information Systems*, vol. 45, no. 2, pp. 221–245, 2015.
33. L. Boratto, G. Fenu, and P. L. Pau, "Design criteria to model groups in big data scenarios: Algorithms and best practices," in *1st International Workshop on Knowledge Discovery on the WEB (KDWEB 2015)*, ser. CEUR Workshop Proceedings, vol. 1489, 2015, pp.8–16.
34. L. Boratto and S. Carta, "Impact of content novelty on the accuracy of a group recommender system in Data Warehousing and Knowledge Discovery - 16th International Conference, DaWaK 2014, 2014. *Proceedings*, ser. Lecture Notes in Computer Science, vol. 8646. Springer, 2014, pp.159–170.
35. L. Boratto and S. Carta, "Modeling the preferences of a group of users detected by a grouping: recommendation case-study," in *4th International Conference on Web Intelligence, Mining and Semantics (WIMS 14)*, WIMS '14. ACM, 2014, pp.16:1–16:7.
36. L. Boratto and S. Carta, "Using collaborative filtering to overcome the curse of dimensionality when clustering users in a group recommender system," in *ICEIS 2014 - Proceedings of the 16th International Conference on Enterprise Information Systems, Volume 2*. SciTePress, 2014, pp.564–572.
37. L. Boratto and S. Carta, "Exploring the ratings prediction task in a group recommender system that automatically detects groups," in *IMMM 2013, The Third International Conference on Advances in Information Mining and Management*, 2013, pp. 36–43.
38. L. Boratto and S. Carta, "State-of-the-art in group recommendation and new approaches for automatic identification of groups," in *Information Retrieval and Mining in Distributed Environments*, ser. Studies in Computational Intelligence. Springer Berlin Heidelberg, 2011, pp.1–20.
39. L. Boratto, S. Carta, and M. Satta, "Groups identification and individual recommendations in group recommendation algorithms," in *Proceedings of the Workshop on Practical Use of Recommender Systems, Algorithms and Technologies 2010*, ser. CEUR Workshop Proceedings, vol. 676, November 2010, pp.27–34.

40. L. Boratto, S. Carta, A. Chessa, M. Agelli, and M. L. Clemente, "Group recommendation with automatic identification of users communities," in *Proceedings of the 2009 IEEE/WIC/ACM International Conference on Web Intelligence and International Conference on Intelligent Agent Technology - Workshops*. IEEE Computer Society, 2009, pp. 547–550.

User engagement and personalization in eCoaching platforms

41. L. Boratto, S. Carta, W. Iguider, F. Mulas, P. Pilloni, "Fair performance-based user recommendation in e-coaching systems," *User Model. User Adapt. Interact.*, **32**(5), 839–881 (2022).
42. L. Boratto, S. Carta, F. Ibba, F. Mulas, P. Pilloni, "Modeling real-time data and contextual information from workouts in e-coaching platforms to predict users' sharing behavior on facebook," *User Model. User Adapt. Interact.*, **30**(3), 395–411 (2020).
43. L. Boratto, S. Carta, F. Ibba, F. Mulas, and P. Pilloni, "Modeling real-time data and contextual information from workouts in e-coaching platforms to predict users' sharing behavior on facebook," *Modeling and User-Adapted Interaction*, Mar 2019.
44. P. Pilloni, L. Piras, S. Carta, G. Fenu, F. Mulas, and L. Boratto, "Recommender system lets coaches identify and help athletes who begin losing motivation," *IEEE Computer*, vol. 51, no. 3, pp. 42–47, 2018.
45. L. Boratto, S. Carta, W. Iguider, F. Mulas, and P. Pilloni, "Predicting workout quality to help coaches support sportspeople," in *Proceedings of the 3rd International Workshop on Health Recommender Systems, HealthRecSys 2018, co-located with the 12th ACM Conference on Recommender Systems (ACM RecSys 2018)*, ser. CEUR Workshop Proceedings, vol. 2216. CEUR-WS.org, 2018, pp. 8–12.
46. L. Boratto, S. Carta, F. Mulas, and P. Pilloni, "An e-coaching ecosystem design and effectiveness analysis of the engagement of remote coaching on athletes," *Pervasive and Ubiquitous Computing*, vol. 21, no. 4, pp. 689–704, 2017.
47. L. Boratto, S. Carta, G. Fenu, M. Manca, F. Mulas, and P. Pilloni, "The role of social interaction on users motivation to exercise: A persuasive web framework to enhance the self-management of a healthy lifestyle," *Pervasive and Mobile Computing*, vol. 36, pp. 98–114, 2017.
48. P. Pilloni, L. Piras, L. Boratto, S. Carta, G. Fenu, and F. Mulas, "Recommendation in persuasive ehealth systems: an effective strategy to spot users' losing motivation to exercise," in *Proceedings of the 2nd International Workshop on Health Recommender Systems co-located with the 11th International Conference on Recommender Systems (RecSys 2017)*, ser. CEUR Workshop Proceedings, vol. 1953. CEUR-WS.org, 2017, pp. 6–9.
49. L. Balvis, L. Boratto, F. Mulas, L. D. Spano, S. Carta, and G. Fenu, "Keep the coach's guidance for runner training," in *Human-Centered and Error-Resilient Systems Development 2016* ser. Lecture Notes in Computer Science, vol. 9856. Springer, 2016, pp. 246–257.
50. F. Mulas, P. Pilloni, M. Manca, L. Boratto, and S. Carta, "Linking human-computer interaction with the social web: A web application to improve motivation in the exercising activity of users," in *Cognitive Infocommunications (CogInfoCom), 2013 IEEE 4th International Conference on*, December 2013, pp. 351–356.
51. F. Mulas, P. Pilloni, M. Manca, L. Boratto, and S. Carta, "Using new communication technologies and social media interaction to improve the motivation of users to exercise," in *Future Generation Communication Technology (FGCT), 2013 Second International Conference on*, November 2013, pp. 87–92.

User modeling and personalization for mobility

52. C. Consonni, S. Basile, M. Manca, L. Boratto, A. Freitas, T. Kovacicova, G. Pourhashem, and Y. Cornet, "What's your value of travel time? collecting traveler-centered mobility data via crowdsourcing," in *Proceedings of the Fifteenth International AAI Conference on Web and Social Media, ICWSM 2021, held virtually, June 7-10, 2021*. AAAI Press, 2021, pp. 961–970.

53. S. Basile, C. Consonni, M. Manca, and L. Boratto, "Matching user preferences and behavior for mobility," in *HT '20: 31st ACM Conference on Hypertext and Social Media*, ACM, 2020, pp.141-150.
54. L. Boratto, M. Manca, G. Lugano, and M. Gogola, "Characterizing user behavior in journey planning," *Computing*, vol. 102, pp.1245-1258, May 2020.
55. M. Marras, M. Manca, L. Boratto, G. Fenu, and D. Laniado, "Barcelona Empowering citizens with interactive dashboards for urban data exploration," in *Companion of the The Web Conference 2018 on The Web Conference 2018*, ser. WWW '18. Republic and Canton of Geneva, Switzerland: International World Wide Web Conferences Steering Committee, 2018, pp. 219-222.
56. M. Manca, L. Boratto, V. M. Roman, O. M. i Galliss`a, and A. Kaltenbrunner, "Using social media to characterize urban mobility patterns: state-of-the-art survey and case-study," *Online Networks and Media*, vol. 1, pp.56 - 69, 2017.

Social recommendation

57. M. Manca, L. Boratto, and S. Carta, "Behavioral data mining to produce novel and serendipitous recommendations in a social bookmarking system," *Information Systems Frontiers*, vol. 20, no. 4, pp. 825-839, 2018.
58. M. Manca, L. Boratto, and S. Carta, "Using behavioral data mining to produce friend recommendations in a social bookmarking system," in *Data Management Technologies and Applications Third International Conference, DATA 2014, Revised Selected papers*. Springer International Publishing, 2015, pp.99-116.
59. M. Manca, L. Boratto, and S. Carta, "Friend recommendation in a social bookmarking system: Design and architecture guidelines," in *Intelligent Systems in Science and Information 2014*, ser. Studies in Computational Intelligence. Springer International Publishing, 2015, pp.227-242.
60. M. Manca, L. Boratto, and S. Carta, "Mining user behavior in a social bookmarking system - A delicious friend recommender system," in *DATA 2014 - Proceedings of 3rd International Conference on Data Management Technologies and Applications*. SciTePress, 2014, pp.331-338.
61. M. Manca, L. Boratto, and S. Carta, "Design and architecture of a friend recommender system in the social bookmarking domain," in *Science and Information Conference (SAI), 2014*, Aug 2014, pp. 838-842.
62. M. Manca, L. Boratto, and S. Carta, "Producing friend recommendations in a social bookmarking system by mining users content," in *The Third International Conference on Advances in Information Mining and Management (IMMM 2013)*, 2013, pp. 59-64.

Semantics-aware user targeting, ranking, and recommendation

63. F. M. Mallocci, L. Portell Penad´es, L. Boratto, and G. Fenu, "A text mining approach to extract and rank innovation insights from research projects," in *Web Information Systems Engineering - WISE 2020 - 21st International Conference, Amsterdam, The Netherlands, October 20-24, 2020, Proceedings, Part II*, ser. Lecture Notes in Computer Science, vol. 12343. Springer, 2020, pp.143-154.
64. L. Boratto, S. Carta, G. Fenu, and L. Piras, "Employing document embeddings to solve the "new cold start" problem in user targeting, and provide explanations to the users," in *Advances in Information Retrieval - 40th European Conference on IR Research, ECIR 2018, Proceedings*. Springer, 2018, pp.371-382.
65. L. Boratto, S. Carta, G. Fenu, and R. Saia, "Semantics-aware content-based recommender system Design and architecture guidelines," *Neurocomputing*, vol. 254, pp.79-85, 2017.
66. R. Saia, L. Boratto, and S. Carta, "A Semantic Approach to Remove Incoherent Items From a User Profile and Improve the Accuracy of a Recommender System," in *Intelligent Information Systems* Springer, 2016.

67. L. Boratto, S. Carta, G. Fenu, and R. Saia, "Using neural word embeddings to model user behavior and detect user segments," *Knowledge-Based Systems*, vol. 108, pp.5–14, 2016.
68. R. Saia, L. Boratto, S. Carta, and G. Fenu, "Binary sieves toward a semantic approach to user segmentation for behavioral targeting," *Future Generation Computer Systems*, vol. 64, pp.186–197, 2016.
69. L. Boratto, S. Carta, G. Fenu, and R. Saia, "Representing items as word-embedding vectors and generating recommendations by measuring their linear independence," in *Proceedings of the Poster Track of the 10th ACM Conference on Recommender Systems (RecSys 2016)*, ser. CEUR Workshop Proceedings, vol. 1688. CEUR-WS.org, 2016.
70. R. Saia, L. Boratto, and S. Carta, "A class-based strategy to user behavior modeling in recommender systems," in *Emerging Trends and Advanced Technologies for Computational Intelligence: Extended and Selected Results from the Science and Information Conference 2015*. Springer International Publishing, 2016, pp.241–260.
71. L. Boratto, S. Carta, G. Fenu, and R. Saia, "Exploiting a determinant-based metric to evaluate a word-embeddings matrix of items," in *IEEE International Conference on Data Mining Workshops, ICDM Workshops 2016*. IEEE, 2016, pp.984–991.
72. R. Saia, L. Boratto, and S. Carta, "A latent semantic pattern recognition strategy for an untrivial targeted advertising," in *Proceedings of the 2015 IEEE International Congress on Big Data*. IEEE Computer Society, 2015, pp.491–498.
73. R. Saia, L. Boratto, and S. Carta, "Semantic coherence-based user profile modeling in the recommender systems context," in *KDIR 2014 - Proceedings of the International Conference on Knowledge Discovery and Information Retrieval*. SciTePress, 2014, pp.154–161.

Other

74. M. Tufis and L. Boratto, "Toward a complete data valuation problem: challenges of personal data," *ACM J. Data Inf. Qual.*, vol. 13, no. 4, pp.20:1–20:7, 2021.
75. M. Güell, M. Salam ó, D. Contreras, and L. Boratto, "Integrating a cognitive assistant within a critique-based recommender system," *Syst. Res.*, vol. 64, pp.1–14, 2020.
76. G. Fenu, M. Marras, and L. Boratto, "A multi-biometric system for continuous student authentication on e-learning platforms," *Pattern Recognition Letters*, vol. 113, pp.83–92, 2018.
77. G. Armano, S. Battiato, D. Bennato, L. Boratto, S. M. Carta, T. D. Noia, E. D. Sciascio, A. Ortis, and D. R. Recupero, "Newsvalue: Semantics-aware text and image processing for fake news detection system," in *Proceedings of the 26th Italian Symposium on Advanced Database Systems, Castellana Marina (Taranto), Italy, June 24-27, 2018*, ser. CEUR Workshop Proceedings, vol. 161. CEUR-WS.org, 2018.
78. L. Boratto, S. Carta, and R. Saia, "Improving the accuracy of latent-space-based recommender systems by introducing a cut-off criterion," in *Proceedings of the Workshop on Engineering Computer-Human Interaction in Recommender Systems.*, ser. CEUR Workshop Proceedings, vol. 1705. CEUR-WS.org, 2016, pp.44–53.
79. L. Boratto, M. Cadeddu, S. Carta, G. Deplano, and F. Mereu, "A tool to analyze the reading behavior of the users in a mobile digital publishing platform," in *Proceedings of the 2nd International Workshop on Knowledge Discovery on the WEB, KDWeb 2016, Cagliari, Italy, September 8-10, 2016.*, ser. CEUR Workshop Proceedings, vol. 1748. CEUR-WS.org, 2016.
80. R. Saia, L. Boratto, and S. Carta, "Exploiting the evaluation frequency of the items to enhance the recommendation accuracy," in *2016 Global Summit on Computer Information Technology (GSCIT)*, July 2016, pp.108–113.

81. R. Saia, L. Boratto, and S. Carta, "Multiple behavioral models to assist and conquer strategy to fraud detection in financial data streams," in *KDIR 2015 - Proceedings of the International Conference on Knowledge Discovery and Information Retrieval*. SciTePress, 2015, pp.496–503.
82. R. Saia, L. Boratto, and S. Carta, "A new perspective on recommender systems path information model," in *2015 Science and Information Conference (SAI)*. IEEE, 2015, pp.578–585.
83. L. Boratto, S. Carta, M. Manca, F. Mulas, P. Pilloni, G. Pinna, and E. Vargiu, "A clustering approach for tag recommendation in social environments," *International Journal of E-Business Development*, vol. 3, pp.126–136, 2013.
84. L. Boratto, S. Carta, and E. Vargiu, "RATC: A robust automated tag clustering technique," in *E-Commerce and Web Technologies, 10th International Conference, EC-Web 2009, Linz, Austria, September 1-4, 2009. Proceedings*, ser. Lecture Notes in Computer Science. Springer, 2009, pp. 324–335.

Riconoscimenti e premi

1. Riconoscimento come *membro di comitato eccellente* presso la 16th ACM Conference on Recommender Systems (RecSys 2022), per aver apportato contribute significativi alla qualita`a del processo di revisione degli articoli di ricerca.
2. Riconoscimento come *miglior membro di comitato (Top-5)* alla Web Conference 2021 (WWW).
3. Riconoscimento come *membro di comitato eccellente* presso la 14th ACM International Conference on Web Search and Data Mining (WSDM 2021), per aver apportato contribute significativi alla qualita`a del processo di revisione degli articoli di ricerca.
4. Riconoscimento come *secondo miglior paper* presso la 31st ACM Conference on Hypertext and Social Media (HT'20) con il paper "Matching user preferences and behavior for mobility".
5. Riconoscimento come *membro di comitato eccellente* presso la 13th ACM International Conference on Web Search and Data Mining (WSDM 2020), per aver apportato contribute significativi alla qualita`a del processo di revisione degli articoli di ricerca.
6. *Menzione d'onore* presso The Web Conference 2018 (WWW) con il demo paper "BarcelonaNow: Empowering Citizens with Interactive Dashboards for Urban Data Exploration".
7. Riconoscimento come *secondo miglior paper* presso la 3rd International Conference on Data Management Technologies and Applications (DATA 2014) con il paper "Mining user behavior in a social bookmarking system - A delicious friend recommender system".
8. Premio come *miglior paper* presso la 3rd International Conference on Advances in Information Mining and Management (IMMM 2013) con il paper "Producing friend recommendations in a social bookmarking system by mining users content".

Talk invitati

- **Interplay between Upsampling and Regularization for Provider Fairness in Recommender Systems** 1 Dicembre 2022
Mila - Quebec Artificial Intelligence Institute (Online) [Algorithmic fairness]
- **Interplay between Upsampling and Regularization for Provider Fairness in Recommender Systems** 28 Novembre 2022
Universita`a di Glasgow (Online) [Algorithmic fairness]
- **How do data imbalances impact on the recommendations we get?** 28 Settembre 2022
BBC Data Dates (Online) [Algorithmic bias and fairness]
- **Generating Recommendations to Automatically-Detected Groups of Users** 4 Novembre 2015
Universita`a di Roma La Sapienza (Roma, Italia) [Group recommendation]
- **Group Recommendation with Automatic Detection of Groups** 24 Luglio 2010
Yahoo!Research Barcelona Seminar (Barcellona, Spagna) [Group recommendation]

Algorithmic bias and fairness Information Access Systems

- **User Profiling with Graph Neural Networks and Related Beyond-Accuracy Perspectives** (con E. Purificato e E.W. De Luca), at the 31st ACM Conference on User Modeling, Adaptation and Personalization (UMAP 2023), Limassol (Cyprus), 26 Giugno 2023.
- **Hands on Explainable Recommender Systems with Knowledge Graphs** (con G. Balloccu, G. Fenu e M. Marras), alla 16th ACM Conference on Recommender Systems (RecSys 2022), Seattle (USA), 18 Settembre 2022.
- **Countering Bias in Personalized Ranking From Data Engineering to Algorithm Development** (con M. Marras), alla 37th IEEE International Conference on Data Engineering (ICDE 2021), Chania (Grecia), 21 Aprile 2021.
- **Operationalizing Treatments against Bias Challenges and Solutions** (con M. Marras), at the 43rd European Conference on Information Retrieval (ECIR 2021), Lucca (Italia), 1 Aprile 2021.
- **Advances in Bias-aware Recommendation on the Web** (con M. Marras), alla 14th International Conference on Web Search and Data Mining (WSDM 2021), Gerusalemme (Israele), 4 Marzo 2021.
- **Bias in Personalized Rankings Concepts to Code** (con M. Marras), alla 20th IEEE International Conference on Data Mining (ICDM 2020), Sorrento (Italia), 17 Novembre 2020.
- **Hands on Data and Algorithmic Bias in Recommender Systems** (con M. Marras), alla 28th ACM Conference on User Modeling, Adaptation and Personalization (UMAP 2020), Genova (Italia), Luglio 2020.

Group recommendation

- **Challenges and Solutions in Group Recommender Systems**, presso la 17th IEEE International Conference on Data Mining (ICDM 2017), New Orleans (USA), 19 novembre 2017.
- **Group Recommender Systems**, presso la 10th ACM Conference on Recommender Systems (RecSys 2016), Boston (USA), 19 settembre 2016.
- **Group Recommendation: Theory, Algorithms, and Applications**, presso la 22nd European Conference on Artificial Intelligence (ECAI 2016), L'Aia (Olanda), 29 agosto 2016.
- **Group Recommender Systems State of the Art, Emerging Aspects and Techniques, and Research Challenges**, presso la 38th European Conference on Information Retrieval (ECIR 2016), Padova (Italia), 20 marzo 2016.

User modeling and personalization for mobility

- **Data Sources and Techniques to Mine Human Mobility Patterns** (con C. Herrero, A. Kaltenbrunner, M. Manca, G. Stilo), at the 5th IEEE International Conference on Data Science and Advanced Analytics (DSAA 2018), Torino (Italia), 2 ottobre 2018.

Progetti

- **EU H2020 - Ride2Rail** 2019 – Present
Ricercatore principale per il partner Eurecat nel progetto “Travel Companion enhancements and RIDE-sharing services synchronised to RAIL and Public Transport (Ride2Rail)”, del programma Shift2Rail di Horizon 2020, con Grant Agreement 881825, anni 2019-2022. Importo totale finanziato 3M€.
- **EU H2020 - DIAMOND** 2018 – Present
Ricercatore principale per il coordinatore Eurecat nel progetto “Revealing fair and actionable knowledge from data to support women’s inclusion in transport systems (DIAMOND)”, del programma Horizon 2020, con Grant Agreement 824326, anni 2018-2021. Importo totale finanziato 2.6M€.

- **EU H2020 - Safe-DEED** 2018 – Present
Ricercatore principale per il partner Eurecat nel progetto “Safe Data Enabled Economic Development (Safe-DEED)”, del programma Horizon 2020, con Grant Agreement 825225, anni 2018-2021. Importo totale finanziato 3M€.
- **EU H2020 - MoTiV** 2016 – Present
Ricercatore principale per il partner Eurecat nel progetto “Mobility and Time Value (MoTiV)”, del programma Horizon 2020, con Grant Agreement 770145, anni 2016-2020. Importo totale finanziato 2M€.

Organizzazione di eventi scientifici

- **4th International Workshop on Algorithmic Bias in Search and Recommendation (Bias 2023)**
Co-chair con Stefano Faralli, Mirko Marras e Giovanni Stilo
45th European Conference on Information Retrieval (ECIR 2023)
- **3rd International Workshop on Algorithmic Bias in Search and Recommendation (Bias 2022)**
Co-chair con Stefano Faralli, Mirko Marras e Giovanni Stilo
44th European Conference on Information Retrieval (ECIR 2022)
- **2nd International Workshop on Algorithmic Bias in Search and Recommendation (Bias 2021)**
Co-chair with Stefano Faralli, Mirko Marras e Giovanni Stilo
43rd European Conference on Information Retrieval (ECIR 2021)
- **International Workshop on Algorithmic Bias in Search and Recommendation (Bias 2020)**
Co-chair con Stefano Faralli, Mirko Marras e Giovanni Stilo
42nd European Conference on Information Retrieval (ECIR 2020)
- **Second International Workshop on Knowledge Discovery and User Modeling for Smart Cities**
Co-chair con Rabeah Alzaidy, Marcelo G. Armentano, Antonela Tommasel e Clyde L. Giles
European Conference on Machine Learning and Principles and Practice of Knowledge Discovery in Databases (ECML-PKDD 2019)
- **Third Workshop on Social Media for Personalization And Search (SoMePeAS 2019)**
Co-chair con Giovanni Stilo
41th European Conference on Information Retrieval (ECIR 2019)
- **Workshop on Social Interaction-based Recommendation (SIR 2018)**
Co-chair con Giovanni Stilo, Christian Morbidoni e Stefano Faralli
27th International Conference on Information and Knowledge Management (CIKM 2018)
- **Workshop on Social Aspects in Personalization and Search (SoAPS 2018)**
Co-chair con Giovanni Stilo
40th European Conference on Information Retrieval (ECIR 2018)
- **Second Workshop on Semantics-Enabled Recommender Systems (SERecSys 2017)**
Co-chair con Giovanni Stilo e Salvatore Carta
17th IEEE International Conference on Data Mining (ICDM 2017)
- **Second Workshop on Engineering Human-Computer Interaction in Recommender Systems**
Co-chair con Salvatore Carta e Gianni Fenu
9th ACM SIGCHI Symposium on Engineering Interactive Computing Systems (EICS 2017)
- **Workshop on Social Media for Personalization And Search (SoMePeAS 2017)**
Co-chair con Andreas Kaltenbrunner e Giovanni Stilo
39th European Conference on Information Retrieval (ECIR 2017)
- **Workshop on Semantics-Enabled Recommender Systems (SERecSys 2016)**
Co-chair con Giovanni Stilo e Salvatore Carta
16th IEEE International Conference on Data Mining (ICDM 2016)
- **Workshop on Engineering Human-Computer Interaction in Recommender Systems**
Co-chair con Lucio Davide Spano, Salvatore Carta e Gianni Fenu
8th ACM SIGCHI Symposium on Engineering Interactive Computing Systems (EICS 2016)

Editorial Board

- **Information Processing & Management (Elsevier)** 2019 – Present
- **Journal of Intelligent Information Systems (Springer)** 2021 – Present

Track co-chair

- **The 17th ACM Conference on Recommender Systems (RecSys 2023)**
Workshop track, con Mi Zhang e Victor Sheng
- **The 31st ACM Conference on User Modeling, Adaptation and Personalization (UMAP 2023)**
Demo and Late Breaking Results track, con Alisa Rieger e Shaghayegh (Sherry) Sahebi
- **The 30th ACM Conference on User Modeling, Adaptation and Personalization (UMAP 2022)**
General chair, con Alejandro Bellogín e Olga C. Santos
- **The 33rd ACM Conference on Hypertext and Social Media (HT 2022)**
General chair, con Alejandro Bellogín
- **The 15th ACM Conference on Recommender Systems (RecSys 2021)**
Demo track, con Pigi Kouki
- **The 29th Conference on User Modeling, Adaptation and Personalization**
Personalized Recommender Systems track, con Alejandro Bellogin e Sole Pera
- **The 14th ACM Conference on Recommender Systems (RecSys 2020)**
Demo and Late Breaking Results track, con Denis Parra

Membro del comitato di programma

Membro del comitato di programma di tutte le conferenze più importanti nel mio settore di ricerca, incluse KDD (2019-2023), WSDM (2018-2023), WWW (2018-2023), SIGIR (2020-2023), ICDM (2020-2023), RecSys (2017-2023), UMAP (2018-2023), ICWSM (2017-2022), CIKM (2020-2022), ECML-PKDD (2020-2022), ACL (2019-2022), IUI (2017).

Abilitazione nazionale e associazioni scientifiche

- **Abilitazione a professore di I fascia in Informatica (01/B1)** 2021 – Presente
MIUR (Ministero dell'Università e della Ricerca), Italia.
- **Abilitazione a professore di I fascia in Sistemi di elaborazione delle informazioni (09/H1)** 2021 – Presente
- **Abilitazione a professore di II fascia in Informatica (01/B1)** 2018 – Presente
MIUR (Ministero dell'Università e della Ricerca), Italia.
- **Abilitazione a professore di II fascia in Sistemi di elaborazione delle informazioni (09/H1)** 2018 – Presente
MIUR (Ministero dell'Università e della Ricerca), Italia.
- **ACM, Association for Computing Machinery (Membro a vita)** 2016 – Present
- **Membro della IEEE Computer Society** 2017 – Present

Supervisione di studenti di dottorato

- **Alex Martinez** 2022 – Present
Explainable in Graph Neural Networks
Co-supervisionato con Jordi Vitrià, Università di Barcellona
- **Alejandro Ariza** 2021 – Present
Explainability in sequence-aware recommender systems
Co-supervisionato con Maria Salamò, Università di Barcellona
- **Giacomo Balloccu** 2021 – Present
Explainability in knowledge graph-based recommender systems
Co-supervisionato con Mirko Marras e Gianni Fenu, Università di Cagliari

- **Elizabeth Gómez** 2019 – Present
Algorithmic bias and fairness in recommender systems
Co-supervised with Maria Salamò, Università di Barcellona
- **Walid Iguider** 2018 – 2022
Supporting decision-making in eCoaching platforms
Co-supervised with Salvatore Carta, University of Cagliari
- **Roberto Saia** 2014 – 2016
Similarity and diversity: two Sides of the same coin in the evaluation of data streams
Co-supervised with Salvatore Carta, Università di Cagliari
- **Matteo Manca** 2011 – 2013
Mining user behavior in social environments
Co-supervised with Salvatore Carta, Università di Cagliari

Insegnamento di corsi universitari

- **Algoritmi e Strutture Dati** 2022 - Presente
Università di Cagliari, Cagliari (Italia)
- **Recuperació de la Informació i Anàlisi de la Web (Information Retrieval)** Ottobre 2020 – Novembre 2020
Universitat Pompeu Fabra, Barcellona (Spagna)