Anna Monreale's Curriculum Vitae

GENERAL: Anna Monreale
AFFILIATION: Dipartimento di Informatica, Università di Pisa, Largo Pontecorvo n. 3, 56127 Pisa, Italia.
CONTACTS:

CURRENT POSITION:

- Associate Professor at Department of CS, Univ. of Pisa (since Dec 2020)
- Rector's delegate of the Postgraduate Vocational Programme (since Nov 2022)
- Vice-Coordinator of Italian National PhD in Artificial Intelligence for Society, Univ. of Pisa, Dept of CS (since Dec. 2021)
- Delegate of the Univ. of Pisa in the European Open Science Cloud Association, Univ. of Pisa (since Dec. 2021)
- Member of the Board of the Italian National PhD in Artificial Intelligence for Society Univ. of Pisa (since 2021)
- Member of the Board of PhD in Data Science (since 2017)
- Research Associate at KDD Lab - ISTI CNR, Pisa since 2008

POSITIONS HELD:
- Director of the Master program on Big Data Analytics and Social Mining of Univ. of Pisa (2019-2022)
- Vice-Director of Centro Interdipartimentale "Diritto e Tecnologie di Frontiera", Univ. of Pisa (since 2020)
- Assistant Professor of Computer Science (RTD-B, May 2017 - Nov. 2020), CS Dept., Univ. of Pisa
- Assistant Professor of Computer Science (RTD-A, May 2014 - Nov. 2017), CS Dept., Univ. of Pisa
- Vice-Director of the Master program on Big Data Analytics and Social Mining of Univ. of Pisa (2014-2019)
- Member of the European Commission High Level Expert Group "European Open Science Cloud" (Sept. 2015- Feb. 2017)
- Post-Doctoral Position at Department of Computer Science, Univ. of Pisa. Research Grant on the study and definition of privacy-preserving data mining techniques based on constraints (2012 - 2014)
- Visiting researcher at People in Motion Lab of the Geodesy and Geomatics Engineering Department, University of New Brunswick, Canada (July 2014)
- Post-Doctoral Position at Department of Computer Science, Univ. of Pisa. Research Grant on the study and definition of privacy-preserving frameworks for monitoring of human activity in distributed environments (2011 - 2012)
- Visiting researcher at Department of Computer Science, Stevens Institute of Technology, New Jersey, USA (April-July 2010)
- Visiting researcher at the group of Prof. Y. Saygin at Univ. of Sabanci, Turkey (Oct 2010)

EDUCATION: Master's degree in CS (2007, Univ. Pisa, summa cum laude); PhD in CS (21 June 2011, Univ. Pisa).

TEACHING & ACADEMIC SERVICES: A.M. teaches Data Mining, Databases and Business Intelligence Laboratory at the graduate programs of Computer Science, Business Informatics and Digital Humanities of Univ. Pisa and Data Mining for CRM and Databases and Business Intelligence Technologies at Master for Innovation Management of Scuola Superiore S. Anna in Pisa. A.M. is coordinating the postgraduate Master program on Big Data Analytics and Social Mining of Univ. of Pisa, where also teaches Big Data Ethics and Databases.

SUPERVISING. She has been the advisor of more than 40 Bachelor and Master theses at CS Dept and currently she is supervising 10 doctoral candidates in the PhD school of CS, Data Science and AI.

RESEARCH TOPICS: A.M. is the author of more than 100 publications on the following topics:
- *Privacy Protection in Big Data*: study and design of methodologies for privacy risk assessment and privacy-by-design techniques for ensuring individual privacy during the publication of movement, mobile and sequence data and privacy-by-design techniques for ensuring corporate privacy, i.e., the protection of the strategic information at organization level, during data mining outsourcing.
- *Personal Data mining*: study of individual data mining models starting from spatio-temporal data and purchasing data. Main results: definition of methodologies for predicting the next movements of people on the basis of individual systematic movements; methods for the identification of points of interest starting from the analysis of individual and collective mobility; methods for clustering individual transactional data, useful for developing recommendation systems for purchases.
- *Complex Network Analysis*: study and analysis of complex networks such as multi-dimensional social networks and networks evolving over the time. Main results: definition of new metrics and analytical methods for multi-dimensional networks and definition of techniques for the identification of temporal snapshots that can be interpreted as eras of evolution.
- *Explainability & Discrimination in Machine Learning* : (1) study of methods for explaining machine learning complex models (2) study of the relationship between different ethical principle: privacy, fairness and explainability.

MOST RECENT EUROPEAN AND NATIONAL PROJECTS
- SoBigData++ *European Integrated Infrastructure for Social Mining and Big Data Analytics.* Horizon 2020, INFRAIA-2018-2020, GA: 871042. (2020-2023) – **Role**: Member of the Project
- XAI (2019-2024) – *Science and technology for the explanation of AI decision making.* ERC Advanced Grants 2018. **Role**: : Member of the Project
- HumanE-AI-Net (2020-2023) - *HumanE AI Network* - H2020, ICT-2018-20: Research Innovation Action" (Grant Agreement n. 952026). **Role**: Member of the Project
- FINDHR (2022-2025) - *Fairness and Intersectional Non-Discrimination in Human Recommendation* EU-H2020- ICT-48 RIA - HORIZON-CL4-2021-HUMAN-01 (grant n. 101070212) - **Role:** Co-PI of UniPisa Unit.
- SoBigData.it - *Strengthening the Italian RI for Social Mining and Big Data Analytics* (2022-2025) NextGenerationEU PNRR - **Role:** PI of UniPisa Unit.

PUBLICATONS

The list of publication can be found in:
- DBLP: https://dblp.uni-trier.de/pers/hd/m/Monreale:Anna
- SCOPUS: https://www.scopus.com/authid/detail.uri?authorId=35113703300
- Google Scholar: https://scholar.google.it/citations?user=bA-rXeUAAAAJ&hl

The Top 10 Publications:

[1] Francesco Spinnato, Riccardo Guidotti, Anna Monreale, Mirco Nanni, Dino Pedreschi, Fosca Giannotti: *Understanding Any Time Series Classifier with a Subsequence-based Explainer.* ACM Trans. Knowl. Discov. Data 18(2): 36:1-36:34 (2024)
[2] (2022) R. Pellungrini, L. Pappalardo, F. Simini, A. Monreale: *Modeling Adversarial Behavior Against Mobility Data Privacy.* IEEE Transactions on Intelligent Transportation Systems 23(2): 1145-1158.
[3] (2021) M.Setzu, R. Guidotti, A. Monreale, F. Turini, D. Pedreschi, F. Giannotti. *GLocalX - From Local to Global Explanations of Black Box AI Models. Artificial Intelligence* 294: 103457.
[4] (2020) B. Dong, H. Wang, A. Monreale , D. Pedreschi, F. Giannotti, W. Guo: *Authenticated Outlier Mining for Outsourced Databases*. IEEE Trans. Dependable Secur. Comput. 17(2): 222-235, 2020.
[5] (2019) R. Guidotti, A. Monreale, F. Giannotti, D. Pedreschi, R. Ruggieri, F. Turini: *Factual and Counterfactual Explanations for Black Box Decision Making.* IEEE INTELLIGENT SYSTEMS, vol. 34, p. 14-23, ISSN: 1541-1672.

[6] (2018) R. Guidotti, A. Monreale, R. Ruggieri, F. Turini, F. Giannotti, D. Pedreschi: *A survey of methods for explaining black box models*. ACM COMPUTING SURVEYS, vol. 51, p. 1-42.

[7] 2018) R. Pellungrini, L. Pappalardo, F. Pratesi, A. Monreale: *A Data Mining Approach to Assess Privacy Risk in Human Mobility Data.* ACM TRANSACTIONS ON INTELLIGENT SYSTEMS AND TECHNOLOGY, vol. 9, p. 1-2.

[8] (2014) A. Monreale, S. Rinzivillo, F. Pratesi, F. Giannotti, D. Pedreschi (2014). *Privacy-by-design in big data analytics and social mining*. EPJ DATA SCIENCE, vol. 3.

[9] (2014) S. Hajian, J. Domingo Ferrer, A. Monreale, D. Pedreschi, F. Giannotti. *Discrimination- and privacy-aware patterns.* DATA MINING AND KNOWLEDGE DISCOVERY, vol. 29, p. 1733- 1782.

[10] (2013) F. Giannotti, L. V. S. Lakshmanan, A. Monreale, D. Pedreschi, H. Wang. Privacy-*Preserving Mining of Association Rules from Outsourced Transaction Databases*. IEEE SYSTEMS JOURNAL, vol. 7, p. 385-395.