

PERSONAL INFORMATION

Gianvito Pio



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Sex M | *Date of birth* 13/07/1987 | *Nationality* Italian

h-index: 14, total citations: 441 (source: Scopus)

Enterprise	University	EPR
<input type="checkbox"/> Management Level	<input type="checkbox"/> Full professor	<input type="checkbox"/> Research Director and 1st level Technologist / First Researcher and 2nd level Technologist
<input type="checkbox"/> Mid-Management Level	<input type="checkbox"/> Associate Professor	<input type="checkbox"/> Level III Researcher and Technologist
<input type="checkbox"/> Employee / worker level	<input checked="" type="checkbox"/> Researcher and Technologist of IV, V, VI and VII level / Technical collaborator	<input type="checkbox"/> Researcher and Technologist of IV, V, VI and VII level / Technical collaborator

WORK EXPERIENCE

07/06/2022 – present

**Researcher (RTD-B)**

Dept. of Computer Science. University of Bari Aldo Moro (Italy)  
Via Orabona, 4 – 70125 Bari (BA), Italy

- Research topics: machine learning, data mining, big data analytics, analysis of heterogeneous information networks, semi-supervised and transfer learning methods, bioinformatics.

29/07/2019 – 06/02/2022

**Researcher (RTD-A)**

Dept. of Computer Science. University of Bari Aldo Moro (Italy)  
Via Orabona, 4 – 70125 Bari (BA), Italy

- Research topics: methods for Big Data Analytics (BDA) available as services  
Position funded by PON Project AIM1852414-1

01/03/2019 - 28/07/2019

**Research assistant (assegnista di ricerca)**

Dept. of Computer Science. University of Bari Aldo Moro (Italy)  
Via Orabona, 4 – 70125 Bari (BA), Italy

- Research topics: optimization of energy distribution networks through machine learning algorithms, in the context of the PON Project “ComESTo - Community Energy Storage: Gestione Aggregata di Sistemi d’Accumulo dell’Energia in Power Cloud” - Grant no. ARS01 01259

02/02/2015 - 31/01/2019

**Research assistant (assegnista di ricerca)**

Dept. of Computer Science. University of Bari Aldo Moro (Italy)  
Via Orabona, 4 – 70125 Bari (BA), Italy

- Research topics: structured output prediction from network data through semi-supervised learning techniques, in the context of the EU Project “MAESTRA - Learning from Massive, Incompletely annotated, and Structured Data” - Grant no. 325122

## EDUCATION AND TRAINING

- 2015 **Ph.D in Computer Science**  
 Dept. of Computer Science. University of Bari Aldo Moro (Italy)  
 Via Orabona, 4 – 70125 Bari (BA), Italy  
 Topics: unsupervised and semi-supervised machine learning and data mining methods for the analysis of homogeneous and heterogeneous information networks.
- 2011 **M.Sc. in Computer Science**  
 Dept. of Computer Science. University of Bari Aldo Moro (Italy)  
 Via Orabona, 4 – 70125 Bari (BA), Italy  
 110/110 magna cum laude

## PROJECTS

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- With leadership roles**
- 2019 – 2022 PON Attraction and International Mobility (AIM 1852414-1-1) “Big Data Analytics” (PI)
- Project reviewer**
- 2021 Research projects in AI for the National Research, Development and Innovation Office, Hungary  
 2020 Research projects in AI for the Science Fund of the Republic of Serbia
- Participation**
- 2019 PON Project “ComESto - Community Energy Storage: Gestione Aggregata di Sistemi d’Accumulo dell’Energia in Power Cloud” (Grant no. ARS01 01259)
- 2015-2019 EU Project MAESTRA - Learning from Massive, Incompletely annotated, and Structured Data (Grant no: ICT-2013-612944)
- 2015 PRIN 2015 - False testimonianze. Copie, contraffazioni, manipolazioni e abusi del documento epigrafico
- 2014-2017 EU Project EAGLE - Europeana network of Ancient Greek and Latin Epigraphy (Grant no: 325122)
- 2014 MIUR STARTUP Vi-POC: Virtual Power Operation Center, D.D. n. 0002916, 18/12/2013
- 2013 PON Project VINCENTE - Un ambiente virtuale di “Collective Intelligence” abilitante lo sviluppo di ecosistemi per l’imprenditorialità tecnologica sostenibile (PON02 00563 3470993)
- 2013 PON Project PUGLIA@SERVICE - L’ingegneria dei servizi internet-based per lo sviluppo strutturale di un territorio “intelligente” (PON02 00563 3489339)

## COMMUNITY SERVICE (last 5y)

Conference co-chair

- 16th Italian Research Conference on Digital Libraries, 2020 (organizing committee member)
- European Conference on Machine Learning and Principles and Practice of Knowledge Discovery in Databases, ECML-PKDD 2017 (Proceedings Chair)
- Discovery Science 2016 (Local Arrangement Chair).

TPC member	AAAI Conference on Artificial Intelligence (AAAI 2018, AAAI 2020, AAAI 2021, AAAI 2022); International Joint Conference on Artificial Intelligence (IJCAI 2017, IJCAI 2018, IJCAI 2019, IJCAI 2020, IJCAI 2021, IJCAI 2022); International Conference of Data Mining (ICDM 2017, ICDM 2018, ICDM 2019, ICDM 2020, ICDM 2021, ICDM 2022); International Conference on Information and Knowledge Management (CIKM 2019); European Conference on Machine Learning and Principles and Practice of Knowledge Discovery in Databases (ECML-PKDD 2016, ECML-PKDD 2017, ECML-PKDD 2018, ECML-PKDD 2019, ECML-PKDD 2020, ECML-PKDD 2021, ECML-PKDD 2022); ECML-PKDD Workshop - New Frontiers in Mining Complex Patterns (NFMCP 2015, NFMCP 2016, NFMCP 2017, NFMCP 2018, NFMCP 2019, NFMCP 2020); International Conference on Discovery Science (DS 2016, DS 2017, DS 2018, DS 2019, DS 2020, DS 2021); Business Information Systems (BIS 2016, BIS 2017); International Symposium on Methodologies for Intelligent Systems (ISMIS 2018, ISMIS 2022); Artificial Intelligence and Knowledge Engineering (AIKE 2019, AIKE 2020, AIKE 2021, AIKE 2022); International Conference on Advanced Cognitive Technologies and Applications (COGNITIVE 2015, COGNITIVE 2016); International Conference on Advances in Databases, Knowledge and Data Applications (DBKDA 2017); International Conference on Data Analytics (Data Analytics 2018, 2019, 2020, 2021, 2022); International Conference on Information Technologies for Epigraphy and Digital Cultural Heritage in the Ancient World (EAGLE 2014, EAGLE 2015, EAGLE 2016); International Conference on Machine Learning and Data Mining (MLDM 2019); International Joint Conference on Knowledge Discovery, Knowledge Engineering and Knowledge Management (KDIR 2016, KDIR 2017).
Journal reviewer	Artificial Intelligence in Medicine; BMC Bioinformatics; Bioinformatics; Computational Biology and Chemistry; Computer Methods and Programs in Biomedicine; Data Mining and Knowledge Discovery; Expert Systems with Applications; IEEE Transactions on Computational Biology and Bioinformatics; IEEE Transactions on Knowledge and Data Engineering; IEEE Transactions on NanoBioscience; Information Sciences; International Journal of Bioinformatics Research and Applications; International Journal of Data Analysis Techniques and Strategies; International Journal of Intelligent Information and Database Systems; International Journal of Distributed Sensor Networks; International Journal of Metadata, Semantics and Ontologies; International Journal of Molecular Sciences; International Journal of Geo-Information; Journal of the American Statistical Association; Journal of Biomedical and Health Informatics; Journal of Computer and System Sciences; Journal of Intelligent Information Systems; Machine Learning Journal; Mathematical and Computational Applications; Nucleic Acid Research; PLOS One.

## EDITORIAL ACTIVITY

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2022 - Present	Editorial board member for BMC Bioinformatics (section "Machine learning and artificial intelligence")
2020 - Present	Editorial board member for Springer Medical & Biological Engineering & Computing
2020-2022	Guest Editor of the Special Issue Geo-Distributed Big Data Analytics in Sensor Networks for the journal Sensors
2020-2021	Guest Topic Editor of the Special Issue Plant Role in Human Gene Expression and Gut Microbiome Regulation for the journals Frontiers in Genetics and Frontiers in Nutrition

## PHD SUPERVISION

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2022 - Present	Annunziata D'Aversa (co-supervision) PhD in Computer Science and Mathematics, University of Bari Aldo Moro
2021 - Present	Graziella De Martino (co-supervision) PhD in Computer Science and Mathematics, University of Bari Aldo Moro
2021 - Present	Valeria Merlo (co-supervision) PhD in Computer Science and Mathematics, University of Bari Aldo Moro
2017 - 2021	Emanuele Pio Barracchia (co-supervision) PhD in Computer Science and Mathematics, University of Bari Aldo Moro

## TEACHING

2017, 2019, 2021	Big Data Analytics (3 ECTS), <b>PhD Course in "Computer Science and Mathematics"</b> , Department of Computer Science, University of Bari Aldo Moro, Cohorts XXXII, XXXIII, XXXIV, XXXV, XXXVI
2020	Security in Blockchain Technology, <b>PhD Course in "Computer Science and Mathematics"</b> , Department of Computer Science, University of Bari Aldo Moro, Cohorts XXXIV, XXXV
2018	Multi-relational Data Mining, <b>PhD Course in "Computer Science and Mathematics"</b> , Department of Computer Science, University of Bari Aldo Moro, Cohort XXXIII
2020 - Present	Big Data management and analysis (4+2 ECTS), Master's Degree in "Data Science", Department of Computer Science, University of Bari Aldo Moro, A.Y. 2020/2021, 2021/2022
2019 - Present	Algorithms and Data Structures (7+2 ECTS), Bachelor's degree in "Computer Science", Department of Computer Science, University of Bari Aldo Moro, A.Y. 2019/2020, 2020/2021, 2021/2022
2019 - 2020	Formal methods for the cybersecurity (4+2 ECTS), Master's Degree in "Cybersecurity", Department of Computer Science, University of Bari Aldo Moro, A.Y., 2019/2020
2016 - 2019	Databases (7+2 ECTS), Bachelor's degree in "Computer Science and Digital Communication", Department of Computer Science, University of Bari Aldo Moro, A.Y. 2016/2017, 2017/2018, 2018/2019
2015 - 2016	Computer Programming II (7+2 ECTS), Bachelor's degree in "Computer Science and Technologies for the software design", Department of Computer Science, University of Bari Aldo Moro, A.Y. 2015/2016

## ADDITIONAL INFORMATION

2022	<b>Italian ASN for Associate Professor - 09/H1, ING-INF/05</b>
2020	<b>Italian ASN for Associate Professor - 01/B1, INF/01</b>

**Research Interests** The research activities performed during his PhD studies focused on the design and development of machine learning and data mining methods, with specific attention to clustering, co-clustering, and multi-type clustering approaches, applied in multiple domains, including bioinformatics, textual documents, and cultural heritage. During the post-doc periods, he focused on the development of advanced approaches, also working in semi-supervised and multi-view learning settings, for the analysis of network data, with a specific focus on biological networks, energy grids and social networks. Currently, he focuses his research activities on the development of efficient machine learning and big data analytics methods, transfer learning approaches, embedding approaches and methods to solve different machine learning tasks on homogeneous and heterogeneous information networks. He is also gaining interests in the research fields related to the Blockchain technology.

**Periods Abroad** In 2014, Gianvito Pio did a 4-months internship at the Jozef Stefan Institute, Slovenia, collaborating with the research group of Prof. Sašo Džeroski, for the design a novel machine learning method based on a semi-supervised multi-view learning approach.

In the period February 2020 – August 2020, Gianvito Pio spent 6 months as a Visiting Researcher at the Jozef Stefan Institute, Slovenia, collaborating with the research group of Prof. Sašo Džeroski for the design of a new efficient multi-relational data mining approach based on ensembles of relational decision trees.

In the period March 2021 – September 2021, Gianvito Pio spent 6 months as a Visiting Researcher at the Teesside University, England, collaborating with the research group of Prof. Claudio Angione, for the design of new machine learning methods for the reconstruction of gene regulatory networks based on transfer learning and metabolic data.

## Star-up / Spin-off

Gianvito Pio is co-founder and member of the board of directors of the startup Sensitrust LTD, registered address: 24 Tax Suite 137 B Westlink House 981 Great West Road, Brentford, United Kingdom, TW8 9DN, company number: 12371894. The goal of the startup is to establish a network between freelancers and customers through a platform based on blockchain and Artificial Intelligence techniques.

## PUBLICATIONS

Publications  
best and most relevant  
in the last 10 years

1. G. Pio, P. Mignone, G. Magazzù, G. Zampieri, M. Ceci, C. Angione, *Integrating genome-scale metabolic modelling and transfer learning for human gene regulatory network reconstruction*, *Bioinformatics*, 38(2): 487-493, 2022
2. S. Hess, G. Pio, M. Hochstenbach, M. Ceci, *BROCCOLI: overlapping and outlier-robust biclustering through proximal stochastic gradient descent*, *Data Mining and Knowledge Discovery*, 35, pp. 2542-2576, 2021
3. G. De Martino, G. Pio, M. Ceci, *PRILJ: an efficient two-step method based on embedding and clustering for the identification of regularities in legal case judgments*, *Artificial Intelligence and Law*, DOI: 10.1007/s10506-021-09297-1, 2021
4. P. Mignone, G. Pio, S. Dzeroski, M. Ceci, *Multi-task learning for the simultaneous reconstruction of the human and mouse gene regulatory networks*, *Scientific Reports* 10, 22295, 2020
5. M. Ceci, R. Corizzo, N. Japkowicz, P. Mignone, G. Pio, *ECHAD: embedding-based change detection from multivariate time series in smart grids*, *IEEE Access*, 8:156053-156066, 2020
6. E. Barracchia, G. Pio, D. D'Elia, M. Ceci, *Prediction of new associations between ncRNAs and diseases exploiting multi-type hierarchical clustering*, *BMC Bioinformatics* 21, 70, 2020
7. G. Pio, M. Ceci, F. Prisciandaro, D. Malerba, *Exploiting causality in gene network reconstruction based on graph embedding*, *Machine Learning*, 109(6): 1231-1279 (2020)
8. P. Mignone, G. Pio, D. D'Elia, M. Ceci, *Exploiting Transfer Learning for the Reconstruction of the Human Gene Regulatory Network*, *Bioinformatics*, 36(5): 1553-1561, 2020
9. R. Corizzo, G. Pio, M. Ceci, D. Malerba, *DENCAST: distributed density-based clustering for multi-target regression*, *Journal of Big Data*, 2019 6:43
10. F. Serafino, G. Pio, M. Ceci, *Ensemble Learning for Multi-type Classification in Heterogeneous Networks*, *IEEE Transactions on Knowledge and Data Engineering*, 30(12): 2326-2339, 2018
11. G. Pio, F. Serafino, D. Malerba, M. Ceci, *Multi-type clustering and classification from heterogeneous networks*, *Information Sciences*, 425:107-126, 2018
12. M. Ceci, G. Pio, V. Kuzmanovski, S. Dzeroski, *Semi-Supervised Multi-View Learning for Gene Network Reconstruction*, *PLoS One* 10(12): e0144031, 2015
13. N. Del Buono, G. Pio, *Non-Negative Matrix Tri-Factorization for co-clustering: an analysis of the block matrix*, *Information Sciences*, 301:13-26, 2015
14. G. Pio, M. Ceci, D. Malerba, D. D'Elia, *ComiRNet: a Web-based System for the Analysis of miRNA-gene Regulatory Networks*, *BMC Bioinformatics* 16 (Suppl 9), S7, 2015
15. G. Pio, F. Fumarola, A.E. Felle, D. Malerba, M. Ceci, *Discovering Novelty Patterns from the Ancient Christian Inscriptions of Rome*, *Journal on Computing and Cultural Heritage*, 7(4):22, 2014
16. G. Pio, D. Malerba, D. D'Elia, M. Ceci, *Integrating microRNA target predictions for the discovery of gene regulatory networks: a semi-supervised ensemble learning approach*, *BMC Bioinformatics* 15 (Suppl 1), S4, 2014
17. G. Pio, M. Ceci, D. D'Elia, C. Loglisci, D. Malerba, *A novel biclustering algorithm for the discovery of meaningful biological correlations between miRNAs and mRNAs*, *BMC Bioinformatics* 14 (Suppl 7), S8, 2013
18. P. Molino, G. Pio, C. Mencar, *Fast Fuzzy Inference in Octave*, *International Journal of Computational Intelligence Systems*, 6 (2), pp. 307-317, 2013

According to law 679/2016 of the Regulation of the European Parliament of 27th April 2016, I hereby express my consent to process and use my data provided in this CV.

Bari, 02/05/2022

Dr. Gianvito Pio

