

# Curriculum Vitæ et Studiorum

Francesco Gullo



*Date and Place of Birth:* March 17, 1982 — Cosenza, Italy  
*Citizenship:* Italian  
*Languages:* Italian (native), English (fluent), Spanish (conversant/proficient)  
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[Scopus](#)      [GitHub](#)      [Semantic Scholar](#)

## SHORT BIO

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Francesco Gullo is an *Associate Professor* of computer science at the *University of L’Aquila* (UnivAQ), Italy, in the *Department of Information Engineering, Computer Science, and Mathematics* (DISIM). He got his PhD, in “*Computer and Systems Engineering*”, from the *University of Calabria* (Italy), in 2010. Before joining UnivAQ, he held positions (at various seniority levels) at the *University of Calabria* and *University of Catanzaro* (Italy), *George Mason University* (US), *Yahoo Labs* and *Fundació Barcelona Media* (Spain), *UniCredit* banking group (Italy).

His research falls into the broad areas of *artificial intelligence* and *data science*, with emphasis on *algorithmic* aspects. His recent interests include *graph machine learning*, *graph data management*, and *trustworthy AI*. Within these areas/topics, he has got 100+ publications, mostly in premier venues, including PVLDB, SIGMOD, KDD, WWW, ICDM, WSDM, CIKM, TODS, TKDE, TKDD, MLJ, DAMI, TNSE, PR.

He has also actively served the scientific community: he was/is/will be Associate Editor of EPJ Data Science and IJDSA journals, General co-Chair of WSDM’26, Finance Chair of CIKM’24, ADS Track PC co-Chair of ECML-PKDD’26, Workshop co-Chair of KDD’24 and ICDM’16, Industry Track PC co-Chair of ASONAM’24. He has also been an organizer of several workshops and similar satellite events of conferences, as well as stably part of the (senior) PC of top-tier conferences, including PVLDB, SIGMOD, ICDE, KDD, WWW, IJCAI, AAAI, SIGIR, ICDM, WSDM, CIKM.

## WORK EXPERIENCE – APPOINTMENTS

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- [Mar‘24 – present] **Associate Professor** of Computer Science  
University of L’Aquila  
Department of Information Engineering, Computer Science, and Mathematics (DISIM)  
L’Aquila, Italy
- [Sep‘22 – Feb‘24] **Researcher (senior associate)**  
UniCredit banking group; UniCredit (holding) company  
“Group Data & Intelligence” department  
Rome, Italy
- [Jul‘20 – Aug‘22] **Researcher (senior associate)**  
UniCredit banking group; UniCredit Services (subsidiary) company  
“AI, Data & Analytics ICT” department; “Applied Research & Innovation” (ARI) unit  
Rome, Italy
- [Jul‘15 – Jun‘20] **Researcher (associate)**  
UniCredit banking group; UniCredit (holding) company  
“Research & Development” (R&D) department  
Rome, Italy
- [Mar‘15 – Jun‘15] **Research Scientist**  
Fundació Barcelona Media (now part of Eurecat)  
Barcelona, Spain
- [Sep‘13 – Feb‘15] **Research Scientist**  
Yahoo Labs; “Web Mining” group  
Barcelona, Spain
- [Sep‘11 – Aug‘13] **Postdoctoral Researcher**  
Yahoo Labs; “Web Mining” group  
Barcelona, Spain
- [Jan‘10 – Aug‘11] **Postdoctoral Researcher (“*assegnista di ricerca*”)**  
University of Calabria  
Dept. of Computer Science, Modeling, Electronics and Systems Engineering (DIMES, formerly DEIS)  
Cosenza, Italy
- [Apr‘09 – Sep‘09] **Short-term Visiting Scholar**  
George Mason University  
“Data Mining & Machine Learning” group headed by Prof. Carlotta Domeniconi  
Fairfax, VA – USA
- [Jan‘06 – Aug‘11] **Research & Teaching Assistant**  
University of Calabria  
Dept. of Computer Science, Modeling, Electronics and Systems Engineering (DIMES, formerly DEIS)  
Cosenza, Italy
- [Jan‘06 – Aug‘11] **Research & Teaching Assistant**  
“Magna Græcia” University of Catanzaro; Department of Medicine and Surgery  
Catanzaro, Italy

## WORK EXPERIENCE – OTHER TENURES

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[Nov‘24 – present]	<b>Affiliate Graduate Faculty</b> Boise State University Boise, ID – USA
[Oct‘24 – present]	<b>Deputy Head</b> of the Master’s Degree Program in Applied Data Science University of L’Aquila L’Aquila, Italy
[Oct‘24 – present]	<b>Coordinator of the Internationalization Committee</b> for the DISIM Department of the University of L’Aquila for the Master’s Degree Program in Applied Data Science L’Aquila, Italy
[Apr‘24 – present]	<b>Member of the Elective Board</b> (“ <i>docenti di riferimento</i> ”) for the Master’s Degree Program in Applied Data Science University of L’Aquila L’Aquila, Italy
[Nov‘23 – present]	<b>Member of the ACM Europe Technology Policy Committee (EPTC)</b> Data Science subcommittee Association for Computing Machinery (ACM)
[Jul‘23 – present]	<b>Member of REPRISE</b> “Register of Expert Peer Reviewers for Italian Scientific Evaluation” Italian Ministry of University and Research (MUR)
[Jan‘16 – Feb‘24]	<b>UniCredit Scientific co-Coordinator for the Industrial Liason Program (ILP)</b> of the Master’s Degree Program in Data Science Sapienza University, Rome, Italy
PHD PROGRAM COMMITTEES	<b>Academic Board Member</b> PhD Program in <i>Information and Communication Technologies (ICT)</i> Department of Information Engineering, Computer Science, and Mathematics (DISIM) University of L’Aquila (Italy) Cycles: 41° (2025-’28); 40° (2024-’27)  <b>(Non-academic) External Board Member</b> PhD Program in <i>Information and Communication Technologies (ICT)</i> Department of Computer Science, Modeling, Electronics and Systems Engineering (DIMES) University of Calabria (Italy) Cycles: 39° (2023-26) – 33° (2017-20)
ACADEMIC COMMITTEES	<b>Graduation Sessions</b> (“ <i>sedute di laurea</i> ”) – University of L’Aquila Oct 18, 2025; Jul 23, 2025; Mar 15, 2025  <b>ERASMUS+ (mobility for study)</b> – DISIM Department, University of L’Aquila 2024-25 spring call  <b>Postdoctoral Positions</b> (“ <i>assegni di ricerca</i> ”) – DISIM Dept., University of L’Aquila “GenXAI”, Jul 2024  <b>Teaching Assistant Positions</b> (“ <i>attività didattiche integrative</i> ”) DISIM Department., University of L’Aquila 2025-26  <b>TOLC (Test Online CISIA) CASA</b> DISIM Department., University of L’Aquila Sep 2025

## EDUCATION

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- [Jan'10]      **Ph.D.** in Computer and Systems Engineering [*with highest honors*]  
University of Calabria, Italy  
Thesis: *Overcoming Uncertainty and the Curse of Dimensionality in Data Clustering*  
Advisor: prof. Sergio Greco
- [Dec'05]      **M.Sc. Degree** in Computer Engineering [*cum laude*]  
University of Calabria, Italy  
Thesis: *Querying and Repairing Inconsistent XML Databases*  
Advisor: prof. Sergio Greco
- [Oct'03]      **B.Sc. Degree** in Computer Engineering [*cum laude*]  
University of Calabria, Italy  
Thesis: *Semistructured Data and XML*  
Advisor: prof. Sergio Greco

## RESEARCH ACTIVITY

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His research falls into the broad areas of *artificial intelligence* and *data science*, with special emphasis on *algorithmic* aspects, i.e., on *formulating, theoretically characterizing, and designing effective yet efficient algorithms* for (novel) problems that are useful to gain insights/information/knowledge from data.

As far as data types, special emphasis has been given to *graphs, text, and temporal data*, but he has also dealt with tabular data, probabilistic data, and semistructured data. *Large-scale data processing* and *combinatorial optimization* are frequently-occurring keywords in his work.

More specifically, his recent research interests include:

- Graph machine learning [1, 3, 6, 7, 28, 96]
  - graph representation learning; graph neural networks; machine/graph learning for combinatorial optimization; deep/reinforcement learning paradigms for graph clustering; knowledge graphs; graph classification;
- Graph data management [4, 5, 8, 60, 13, 17, 19, 29, 30, 31, 34, 35, 38, 39, 40, 43, 44, 45, 46, 48, 49, 66, 98]
  - dense-subgraph discovery; graph summarization; reachability/distance queries on graphs; graph pattern mining; graph clustering; querying graph databases; link prediction;
- Trustworthy Artificial Intelligence (AI) [2, 64, 91, 92, 93]
  - machine unlearning; explainable AI; algorithmic fairness; privacy preservation; sustainable AI.

Other topics/problems he has focused on in the past include Natural Language Processing (NLP) [10, 36, 65, 68], AI in finance [9, 33], (*social*) *Web mining* (e.g., discovering polarized communities, social-network analysis, information propagation in online services, community search/detection, social-influence analysis, personalization of online services) [11, 14, 16, 18, 32, 37, 41, 47, 49, 70, 99, 101], *mining high-dimensional/multifaceted data* (i.e., projective/subspace clustering, clustering ensembles, projective clustering ensembles) [61, 20, 22, 50, 51, 53, 54, 55, 89, 69, 100], *clustering uncertain data* [15, 21, 23, 42, 52, 56, 67, 73, 104, 105], *time-series data management* [26, 71, 106], *bioinformatics* [24, 27, 72, 74, 75], *XML data management* [25, 78, 103].

## SCIENTIFIC COMMUNITY SERVICE

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EDITORIAL BOARDS OF JOURNALS	<b>Associate Editor</b> <i>EPJ Data Science</i> journal [Nov 2023 – present]
	<b>Associate Editor</b> <i>International Journal of Data Science and Analytics (IJDSA)</i> journal [Jul 2024 – present]
	<b>Associate Editor</b> <i>Frontiers in Big Data</i> journal <i>Data mining and Management</i> section [Jul 2021 – Mar 2025]
ORGANIZING COMMITTEES OF CONFERENCES	<b>General co-Chair</b> <i>19th ACM International Conference on Web Search and Data Mining (WSDM ‘26)</i>
	<b>Applied Data Science Track Program Committee co-Chair</b> <i>37th—30th European Conference on Machine Learning and Principles and Practice of Knowledge Discovery (ECML-PKDD ‘26)</i>
	<b>Finance Chair</b> <i>32nd ACM International Conference on Information and Knowledge Management (CIKM ‘24)</i>
	<b>Workshop co-Chair</b> <i>30th ACM SIGKDD International Conference on Knowledge Discovery and Data Mining (KDD ‘24)</i>
	<b>Industry Track Program Committee co-Chair</b> <i>16th International Conference on Social Networks Analysis and Mining (ASONAM ‘24)</i>
	<b>Workshop co-Chair</b> <i>16th IEEE International Conference on Data Mining (ICDM ‘16)</i>
ORGANIZATION OF WORKSHOPS & SIMILAR SATELLITE EVENTS OF CONFERENCES	<b>co-Organizer</b> <i>[1st, 2nd, 3rd, 4th, 5th, 6th, 7th, 8th, 9th, 10th] Workshop on Mining Data for financial applications (MIDAS [‘16, ‘17, ‘18, ‘19, ‘20, ‘21, ‘22, ‘23, ‘24, ‘25])</i> <i>In conjunction with the European Conference on Machine Learning and Principles and Practice of Knowledge Discovery (ECML-PKDD [‘16, ‘17, ‘18, ‘19, ‘20, ‘21, ‘22, ‘23, ‘24, ‘25])</i>
	<b>co-Organizer</b> <i>1st Workshop on Innovations, Privacy-preservation, and Evaluations Of machine Unlearning Techniques (WIPE-OUT)</i> <i>In conjunction with the European Conference on Machine Learning and Principles and Practice of Knowledge Discovery (ECML-PKDD ‘25)</i>
	<b>Industrial Session co-Chair</b> <i>[2nd, 3rd] International Conference on Machine Learning, Optimization and Big Data (MOD [‘16, ‘17])</i>
	<b>co-Organizer</b> <i>Mini-Symposium on Multiple Clusterings, Multi-view Data, and Multi-source Knowledge-driven Clustering (MultiClust ‘14)</i> <i>In conjunction with the 2014 SIAM Int. Conf. on Data Mining (SDM ‘14)</i>
	<b>co-Organizer</b> <i>4th MultiClust Workshop: Multiple Clusterings, Multi-view Data, and Multi-source Knowledge-driven Clustering</i> <i>In conjunction with the 19th ACM SIGKDD Int. Conf. on Knowledge Discovery and Data Mining (KDD ‘13)</i>

**co-Organizer**

*1st International Workshop on Multi-view data, High-dimensionality, External Knowledge: Striving for a Unified Approach to Clustering (3Clust ‘12)*

*In conjunction with the 16th Pacific-Asia Conf. on Knowledge Discovery and Data Mining (PAKDD ‘12)*

**OTHER**

**Guest Editor**

**EDITORIAL/REVIEWING  
BOARDS**

*Journal Track of the European Conference on Machine Learning and Principles and Practice of Knowledge Discovery in Databases (ECML PKDD JT)*  
[2020–2026]

**Guest Editor**

Special Issue on *Human-AI-Robot Teaming (HART)*  
*Robotics* journal  
[2024–2025]

**Distinguished Reviewer Board member**

*ACM Transactions on the Web (TWEB)*  
[2022–2024]

**Program Board member**

*International Joint Conference on Artificial Intelligence (IJCAI)*  
[2022–2024]

**Scientific Committee member**

“*Data Science for Economics and Finance: Methodologies and Applications*” book  
Editors: S. Consoli, D. Reforgiato Recupero, M. Salsana. Publisher: Springer Nature.  
[2020]

**PROGRAM**

*ACM SIGMOD International Conference on Management of Data (SIGMOD)*

**COMMITTEES**

(*research track*) [2022, 2024–2025, 2027]

**(MAJOR**

**CONFERENCES)**

*Proceedings of the VLDB Endowment (PVLDB)*  
[2026]

*IEEE International Conference on Data Engineering (ICDE)*  
(*research track*) [2025–2026]

*ACM SIGKDD Int. Conf. on Knowledge Discovery and Data Mining (KDD)*  
(*research track*) [2014–2026]

*International World Wide Web Conference (WWW)*  
(*graph algorithms and learning for the Web track or social networks and social media track*)  
[2014, 2016–2026]

*International Joint Conference on Artificial Intelligence (IJCAI)*  
(*senior PC member*) [2020–2025]

*IEEE International Conference on Data Mining (ICDM)*  
(*senior PC member*) [2014–2016, 2018–2023, 2025]

*ACM International Conference on Information and Knowledge Management (CIKM)*  
(*research track – full papers; senior PC member*) [2012–2022, 2025]

*European Conference on Artificial Intelligence (ECAI)*  
(*research track; senior PC member*) [2023, 2025]

*ACM International Conference on Web Search and Data Mining (WSDM)*  
[2013–2014, 2020–2024]

*SIAM International Conference on Data Mining (SDM)*  
[2012, 2014–2024]

*European Conference on Machine Learning and Principles and Practice of Knowledge Discovery in Databases (ECML PKDD)*

(research track) [2016–2019, 2021–2023]

*European Conference on Machine Learning and Principles and Practice of Knowledge Discovery in Databases (ECML PKDD)*

(applied data science track; senior PC member) [2015–2018, 2021–2023]

*AAAI Conference on Artificial Intelligence (AAAI)*

[2021–2022]

*International AAAI Conference on Web and Social Media (ICWSM)*

[2014, 2017–2022]

*Int. ACM SIGIR Conf. on Research and Development in Information Retrieval (SIGIR)*

[2020–2021]

*ACM International Conference on Information and Knowledge Management (CIKM)*

(research track – short papers) [2019–2020]

*ACM International Conference on Information and Knowledge Management (CIKM)*

(industry/case studies track) [2017–2018]

PROGRAM  
COMMITTEES  
(OTHER  
CONFERENCES  
& WORK-  
SHOPS)

ITADATA [2024–2025]; SEBD [2022–2023]; FRCCS [2023]; DSAA – *special sessions* track [2021–2022]; DSAA – *applications* track [2019–2020]; DS [2022]; ASONAM [2015–2020]; NetSci [2020]; LOD [2017–2020]; CSoNet [2019]; SocInfo [2019]; KDIR [2016–2019]; ICoMS [2018]; ICBK [2017]; CIDM [2016]; EIDWT [2011]; Open-SOFOS Work. @ECML-PKDD [2022]; Soc2Net Work. @ASONAM [2019–2020]; BSMDMA Work. @IEEE BigData and @IJCAI [2018–2019]; MATNet Work. @WWW [2018]; SoAPS Work. @ECIR [2018]; MultiClust Work. @SDM [2012]

INVITED  
TALKS

*Bringing order into the AI and Data Management landscapes: latest research advances at the intersection of machine learning, data mining, graph analytics, NLP, and data ethics*  
University of L'Aquila (Italy) – DISIM Dept.'s New Faculty Seminar  
L'Aquila, Italy [May 2024]

*Correlation Clustering: Latest Advances*

Boise State University (USA) – Ph.D. in Computing Colloquium  
Virtual Seminar [Apr 2024]

*Network-based Receivable Financing*

Scuola Normale Superiore  
Virtual Seminar [Dec 2021]

*Dense Subgraph Discovery in Temporal Networks*

Workshop on Algorithmic Aspects of Temporal Graphs IV  
48th Int. Colloq. on Automata, Languages, and Programming (ICALP '21)  
Virtual Event [Jul 2021]

*Data Science on Information-rich Graphs: New Frontiers, Problems, and Methods*

University of Milan  
Milan, Italy [Jun 2019]

*Mining Massive Complex Graphs: New Frontiers and Methods*

ISI Foundation  
Turin, Italy [Sep 2015]

*From Patterns in Data to Knowledge Discovery: what Data Mining can do*

3rd International Conference Frontiers in Diagnostic Technologies (ICFDT '13)  
Frascati, Italy [Nov 2013]

*Projective Clustering Ensembles*

Yahoo Labs

Barcelona, Spain [Sep 2011]

*Information-Theoretic Hierarchical Clustering of Uncertain Data*

George Mason University

Fairfax VA, USA [Apr 2009]

PHD THESIS	Stefano Piersanti
REVIEWING	Sapienza University – Dept. of Computer Engineering, Control and Management (DIAG) PhD Program in Engineering in Computer Science Thesis: <i>Will it fail and why? A large case study of company default prediction with highly interpretable machine learning models</i> Thesis advisor: Prof. Aris Anagnostopoulos XXXIII cycle
EXTERNAL REVIEWING	<b>Journals:</b> TKDE, TKDD, TPAMI, VLDBJ, MACH, DAMI, TIST, Information Systems, TWEB, TCSS, TBDATA, Pattern Recognition, Internet Mathematics, Nature Communications, AIRE, KAIS, Information Sciences, APNS, DKE, SAM, AI Communications, AI in Medicine, JOCS, Computational Intelligence, BDR, IJDSN, IJTDM, JINT, JIIS, EAAI, ADAC, Neural Networks, JDIQ, Information Fusion, IEEE Access, ISSI  <b>Conferences:</b> SIGMOD, KDD, WWW, ICDE, ICDM, WSDM, CIKM, EDBT, SDM, ECML PKDD, PAKDD, DaWaK, CIDM, EDB, IDEAS, SEBD
CONFERENCE PARTICIPATION	ECAI '25 [91], ASONAM '24 [4, 63], CIKM '24, CIKM '23, ECML-PKDD '23, ECML-PKDD '22 [79, 80], CIKM '21, ECML-PKDD '21 [29, 81, 82], ECML-PKDD '20 [83], ECML-PKDD '19 [84], BigNOMICS '19, CIKM '18 [31, 32, 33], ECML-PKDD '18 [85], ECML-PKDD '17 [14, 86], WIMS '17 [65], IEEE BigData '16 [36], ECML-PKDD '16 [88], ECML-PKDD '14 [42], KDD '14 [43], EDBT '14 [45, 46], VLDB '12 [23], SEBD '11, SIGMOD '11 [51], ICDM '10 [53, 52], ICDM '09 [54], IDEAS '09 [71], SDM '09 [55], ICDM '08 [56], SUM '08 [73], CBMS '07 [75]

## TEACHING ACTIVITY

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UNIVERSITY	<b><i>Fundamentals and Applications of Artificial Intelligence</i></b>
COURSES	University of L'Aquila (Italy)
(INSTRUCTOR)	Department of Information Engineering, Computer Science, and Mathematics (DISIM) B.Sc. in Computer Science (3rd year) Academic years: '25-'26 (24 hours), '24-'25 (48 hours)  <b><i>Ontologies for Data Representation: Methods and Applications</i></b> (24 hours/year) University of L'Aquila (Italy) Department of Information Engineering, Computer Science, and Mathematics (DISIM) M.Sc. in Computer Science (1st year) Academic years: '24-'25  <b><i>Networks</i></b> (48 hours/year) University of L'Aquila (Italy) Department of Information Engineering, Computer Science, and Mathematics (DISIM) M.Sc. in Applied Data Science (1st year) Academic years: '24-'25, '23-'24  <b><i>Advanced Learning and Mining Problems in Big Graph Data</i></b> (6 hours/year) University of Calabria (Italy)



Department of Computer Science, Modeling, Electronics and Systems Engineering (DIMES)  
 PhD Program in Information and Communication Technologies  
 Academic year: '17-'18

**Computer Science** (55–84 hours/year)

University of Calabria (Italy)

Faculties of Engineering, Pharmacy, and Political Sciences, B.Sc. 1st year (remedial class project)

Academic years: '09-'10, '08-'09

**Computer Science** (16–24 hours/year)

“Magna Græcia” University of Catanzaro, Crotone campus (Italy)

Faculty of Medicine and Surgery, B.Sc. in Nurse Sciences (3rd year)

Academic years: '10-'11, '09-'10, '08-'09, '07-'08

**Laboratory Activity in Computer Science** (16 hours/year)

“Magna Græcia” University of Catanzaro, Catanzaro campus (Italy)

Faculty of Medicine and Surgery, B.Sc. in Dental Health (3rd year)

Academic years: '09-'10

UNIVERSITY  
 COURSES  
 (TEACHING  
 ASSISTANT)

**Foundations of Computer Science** (18 hours/year)

University of Calabria (Italy)

Faculty of Engineering, B.Sc. in Computer Engineering (1st year)

Academic years: '10-'11, '09-'10, '08-'09

**Computer Science** (20 hours/year)

University of Calabria (Italy)

Faculty of Political Sciences, M.Sc. in Political Sciences (1st year)

Academic years: '10-'11, '08-'09, '07-'08, '06-'07

**Internet Algorithms and Cryptography** (13 hours/year)

University of Calabria (Italy)

Faculty of Engineering, M.Sc. in Computer Engineering (2nd year)

Academic years: '10-'11, '09-'10

**Web-based Information Systems** (13 hours/year)

University of Calabria (Italy)

Faculty of Engineering, M.Sc. in Computer Engineering (2nd year)

Academic years: '09-'08, '08-'07, '06-'07, '05-'06

**Data and Knowledge Bases** (13 hours/year)

University of Calabria (Italy)

Faculty of Engineering, M.Sc. in Management Engineering (1st year)

Academic years: '07-'08, '05-'06

**Algorithms and Data Structures** (13 hours/year)

University of Calabria (Italy)

Faculty of Engineering, B.Sc. in Computer Engineering (2nd year)

Academic years: '06-'07

**Foundations of Computer Science I** (30 hours/year)

“Magna Græcia” University of Catanzaro (Italy)

B.Sc. interuniversity course in Computer and Biomedical Engineering (1st year)

Academic years: '10-'11, '09-'10, '08-'09, '07-'08

**Computer Science** (8 hours/year)

“Magna Græcia” University of Catanzaro, Catanzaro campus (Italy)

Faculty of Medicine and Surgery, B.Sc. in Health Services (3rd year)

Academic years: '09-'10

INDUSTRY	<b>Machine Learning I</b> (32 hours)
COURSES	UniCredit – Advanced Analytics Lab, <i>Data Skill Booster</i> program Attendees: UniCredit employees (data scientists, machine-learning engineers) Description: theoretical foundations and hands-on sessions on machine-learning basics Syllabus: <i>regression, classification, decision trees, support vector machines, ensembles, unsupervised learning</i> Held on Jun-Jul 2021
	<b>Machine Learning II</b> (32 hours) UniCredit – Advanced Analytics Lab, <i>Data Skill Booster</i> program Attendees: UniCredit employees (data scientists, machine-learning engineers) Description: theoretical foundations and hands-on sessions on advanced machine-learning topics Syllabus: <i>neural networks, convolutional neural networks, recurrent neural networks, graph neural networks, neural networks for recommender systems</i> Held on Oct-Nov 2021
	<b>Neural Natural Language Processing</b> (21 hours) UniCredit – Group Data & Intelligence, <i>Data Upskilling</i> program Attendees: UniCredit Employees (data scientists, machine-learning engineers) Description: theoretical foundations and hands-on sessions on the latest advances in NLP Syllabus: <i>word embeddings, sequence models, large language models, attention models, autoregressive models, model pretraining</i> Held on Jun-Jul 2023
TRAINING CAMPS AND HACKATONS	Co-instructor of the “ <i>Knowledge Graph Completion</i> ” training camp (9 hours) Sapienza University of Rome M.Sc. in Data Science Academic year: ’20-’21
DOCTORAL ADVISORSHIPS	<i>Advisor</i> of Giuseppe Costanzo University of L’Aquila Dept. of Information Engineering, Computer Science, and Mathematics (DISIM) PhD Program in Information and Communication Technologies (ICT) Thesis/topic: <i>LLM-Based Graph compression</i> 40° cycle (years 2024–2027)  <i>co-Advisor</i> of Francesca Ciccarelli University of L’Aquila Dept. of Information Engineering, Computer Science, and Mathematics (DISIM) PhD Program in Information and Communication Technologies (ICT) Thesis/topic: <i>Advancing Machine Unlearning via Topological Data Analysis</i> 40° cycle (years 2024–2027)  <i>co-Advisor</i> of Daniele Fossemó University of L’Aquila Dept. of Information Engineering, Computer Science, and Mathematics (DISIM) PhD Program in Information and Communication Technologies (ICT) Thesis/topic: <i>Advancing Mechanistic Interpretability: Formalization, Complexity, Algorithms</i> 40° cycle (years 2024–2027)  <i>Industrial Tutor</i> of Liliana Martirano University of Calabria Dept. of Computer Science, Modeling, Electronics and Systems Engineering (DIMES) PhD Program in Information and Communication Technologies (ICT)( Industrial Program ( “ <i>Dottorati Innovativi a carattere Industriale</i> ”, PON R&I 2014-2020 Azione I.1) Thesis: <i>Interpretable AI: Deep Learning for Knowledge Graphs</i> 37° cycle (years 2020–2023)

B.Sc./M.Sc.	<i>Supervisor</i> of Lorenzo Bosica
THESIS	University of L'Aquila, B.Sc. in Computer Science (A.Y. '24-'25)
SUPERVISING	Thesis: <i>Design and Development of a Software Application for Kinetic Parameter Monitoring in Resistance Training</i>
	<i>Supervisor</i> of Francesco Buffalmano
	University of L'Aquila, B.Sc. in Computer Science (A.Y. '24-'25)
	Thesis: <i>Handling Algorithmic Fairness via Post-processing: State of the Art and Advances</i>
	<i>Supervisor</i> of Loredana Messina
	University of L'Aquila, B.Sc. in Computer Science (A.Y. '24-'25)
	Thesis: <i>Neurosymbolic Artificial Intelligence meets Knowledge Graphs: State of the Art, Experimental Evaluation, and a Novel Approach</i>
	<i>Supervisor</i> of Rolando L. Innamorati
	University of L'Aquila, B.Sc. in Computer Science (A.Y. '24-'25)
	Thesis: <i>Anomaly detection on corporate fleet geolocation data: a time series machine learning approach</i>
	<i>co-Supervisor</i> of Matteo Iezzi
	University of L'Aquila, M.Sc. in Applied Data Science (A.Y. '23-'24)
	Thesis: <i>Recent Advances in Chain-of-Thought Prompting: Current Trends and Automation Approaches</i>
	<i>co-Supervisor</i> of Sodiq Abiodun Muraina
	University of L'Aquila, M.Sc. in Mathematical Engineering (A.Y. '23-'24)
	Thesis: <i>Mitigating Hallucinations in Large Language Models</i>
	<i>External Supervisor</i> of Alessio Barboni
	Sapienza University of Rome, M.Sc. in Data Science (A.Y. '22-'23)
	Thesis: <i>Temporal Graph Representation Learning: An Application To Credit Risk Assessment</i>
	<i>External Supervisor</i> of Giorgia Salvatori
	Sapienza University of Rome, M.Sc. in Data Science (A.Y. '21-'22)
	Thesis: <i>Graph Summarization in the Financial Domain</i>
	<i>External Supervisor</i> of Francesco Ottaviani
	Sapienza University of Rome, M.Sc. in Computer Engineering (A.Y. '20-'21)
	Thesis: <i>Characterizing Knowledge Graphs in the Embedding Space</i>
	<i>External Supervisor</i> of Dilara Isikli
	Sapienza University of Rome, M.Sc. in Data Science (A.Y. '20-'21)
	Thesis: <i>Financial Sentiment Analysis</i>
	<i>External Supervisor</i> of Marco Moauro
	Roma Tre University, M.Sc. in Computer Engineering (A.Y. '20-'21)
	Thesis: <i>Knowledge Graph Construction and Processing: a Case Study on the Italian Bourse</i>
	<i>External Supervisor</i> of Giacomo Lo Cascio
	Sapienza University of Rome, M.Sc. in Data Science (A.Y. '19-'20)
	Thesis: <i>Representation Learning on Blockchain Networks, with an Application to Cryptocurrency Price Prediction</i>
	<i>External Supervisor</i> of Alessia Galli
	Sapienza University of Rome, M.Sc. in Data Science (A.Y. '19-'20)
	Thesis: <i>Motif Extraction and Discord Discovery in Temporal Graphs</i>
	<i>External Supervisor</i> of Vlado Vukovic
	Sapienza University of Rome, M.Sc. in Data Science (A.Y. '18-'19)
	Thesis: <i>Discord Discovery in Temporal Graphs</i>

*External Supervisor* of Giulia Di Brango  
 Sapienza University of Rome, M.Sc. in Data Science (A.Y. '18-'19)  
 Thesis: *Anomalous-Event Detection in Heterogeneous Graphs*

*External Supervisor* of Lucia Gagliarducci  
 Sapienza University of Rome, M.Sc. in Data Science (A.Y. '18-'19)  
 Thesis: *Relation-Extraction for Knowledge-Graph Completion*

*External Supervisor* of Giacomo Legnaro  
 Sapienza University of Rome, M.Sc. in Data Science (A.Y. '17-'18)  
 Thesis: *Efficient and Effective Streaming Algorithms for Network-based Invoice Factoring*

*External Supervisor* of Giulia Gavazzi  
 Sapienza University of Rome, M.Sc. in Data Science (A.Y. '16-'17)  
 Thesis: *Mining Dense and Non-redundant Subgraphs, with an Application to Event-graph Exploration*

*Supervisor* of Fabrizio Granieri  
 University of Calabria, B.Sc. in Computer Engineering (A.Y. '09-'10)  
 Thesis: *Graph Partitioning for Clustering Ensembles*

*Supervisor* of Ronny Meringolo  
 University of Calabria, B.Sc. in Computer Engineering (A.Y. '09-'10)  
 Thesis: *Graph Partitioning for Clustering Ensembles*

*Supervisor* of Antonio Senno  
 University of Calabria, M.Sc. in Computer Engineering (A.Y. '08-'09)  
 Thesis: *Clustering Ensembles Methods*

*Supervisor* of Giuseppe Scrivano  
 University of Calabria, B.Sc. in Computer Engineering (A.Y. '06-'07)  
 Thesis: *Multidimensional Time Series: Similarity Detection and Clustering*

*Supervisor* of Emanuele Forlano  
 University of Calabria, B.Sc. + M.Sc. in Computer Engineering (A.Y. '05-'06)  
 Thesis: *Algorithms for Time Series Clustering*

SUPERVISORY	Malia Barker
COMMITTEE	Ph.D. in Computing at Boise State University (USA)
MEMBERSHIPS	Topic: <i>Advances in Large Language Models</i> Expected graduation: Spring 2028]
	Bishal Lakha
	Ph.D. in Computing at Boise State University (USA)
	Dissertation: <i>From Detection to Explanation: Static and Temporal Graph Representation Learning Based Approach for Anomaly Based Cyber Threats Detection</i>
	Graduated on Apr 2025
RESEARCH	Giulia Gavazzi, Giacomo Legnaro, Hugo Maldini
INTERN	M.Sc. students at Sapienza University of Rome
SUPERVISING	Research Interns at UniCredit, Winter 2016 (Data Science Industrial Liaison Program) Project: <i>News Collection for Emerging-Event Detection</i> [65]
	Alessio Areni, Cristiano Di Crescenzo, Elena Troccoli
	M.Sc. students at Sapienza University of Rome
	Research Interns at UniCredit, Winter 2016 (Data Science Industrial Liaison Program)
	Project: <i>Event Detection in Temporal Graphs</i> [65]
	Pranay Anchuri
	Ph.D. student at Rensselaer Polytechnic Institute

Research Intern at Yahoo Labs Barcelona, Summer 2014  
Project: *Mining Interesting Patterns from Uncertain Graphs*

Daniele Ramazzotti

Ph.D. student at University of Milano-Bicocca

Research Intern at Yahoo Labs Barcelona, Summer 2014

Project: *Social Influence Detection by Probabilistic Causation and Spatial Proximity* [32]

Edoardo Galimberti

M.Sc. student at Politecnico of Milan

Research Intern at Yahoo Labs Barcelona, Summer 2014

Project: *Efficient and Effective Community Search* [18]

Natali Ruchansky

Ph.D. student at Boston University

Research Intern at Yahoo Labs Barcelona, Summer 2014

Project: *The Minimum Wiener Connector Problem* [40]

Davide Mottin

Ph.D. student at University of Trento

Research Intern at Yahoo Labs Barcelona, Summer 2013

Project: *Query Reformulation in Graph Databases* [39]

Panos Parchas

Ph.D. student at Hong Kong University of Science and Technology

Research Intern at Yahoo Labs Barcelona, Summer 2013

Project: *Extracting Representative Instances of Uncertain Graphs* [44, 17]

Lucrezia Macchia

Ph.D. student at University of Bari

Research Intern at Yahoo Labs Barcelona, Winter 2013

Project: *Mining Summaries of Propagations* [47]

Arijit Khan

Ph.D. student at University of California at Santa Barbara

Research Intern at Yahoo Labs Barcelona, Summer 2012

Project: *Fast Reliability Search on Uncertain Graphs* [46]

Charalampos Tsourakakis

Ph.D. student at Carnegie Mellon University

Research Intern at Yahoo Labs Barcelona, Summer 2012

Project: *Extracting optimal quasi-cliques with quality guarantees* [48]

## FUNDING – PARTICIPATION INTO FUNDED RESEARCH/INNOVATION (COOPERATIVE) PROJECTS

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PRINCIPAL INVESTIGATOR	<b>GenXAI - Generative Artificial Intelligence for eXplainability</b> Funding entity: University of L'Aquila - Call for Fundamental Research University Projects ("Bando per Progetti di Ateneo") 2025 Amount funded: 8 500 EUROS
PARTICIPATION AS A RESEARCH-STAFF MEMBER	<b>Enhanced Network of intelligent Agents for Building Livable Environments (ENABLE)</b> Funding entity: European Union - NextGenerationEU, National Recovery and Resilience Plan (NRRP) ("Piano Nazionale di Ripresa e Resilienza" (PNRR)) Innovation ecosystem number: E13C24000430006

**Integrazione di tecniche Multiagente e Percezione Avanzata per il Controllo di roboT autonomi (IMPACT)**

Funding entity: European Union - NextGenerationEU, National Recovery and Resilience Plan (NRRP) (*“Piano Nazionale di Ripresa e Resilienza” (PNRR)*)

CUP: E93C22001070001

**National center for HPC, Big Data and Quantum Computing**

Funding entity: European Union - NextGenerationEU, National Recovery and Resilience Plan (NRRP) (*“Piano Nazionale di Ripresa e Resilienza” (PNRR)*)

CUP: E13C22001000006

**The Rome Technopole Ecosystem**

Funding entity: European Union - NextGenerationEU, National Recovery and Resilience Plan (NRRP) (*“Piano Nazionale di Ripresa e Resilienza” (PNRR)*)

Innovation ecosystem number: ECS\_00000024

**TYPES** (*Towards transparencY and Privacy in the onlinE advertising business*)

Funding entity: EU-H2020

Project number: H2020-DS-2014-1 – Project ID 653449

**SUPER** (*Social sensors for secUrity Assessments and Proactive EmeRgencies management*)

Funding entity: EU-FP7

Project number: FP7-Security-2013.6.1-1 (<http://super-fp7.eu/>)

**Cenit Social Media**

Funding entity: Spanish Centre for the Development of Industrial Technology

CENIT program, project CEN-20101037 (<http://www.cenitsocialmedia.es/>)

**GeoPKDD** (*Geographic Privacy-aware Knowledge Discovery and Delivery*)

Funding entity: EU-FET-014915

Project number: IST-6FP-014915 (<http://www.geopkdd.eu>)

**LogNET** (*An Innovative Network to Improve Logistics in Gioia Tauro*)

Subproject LOGICA (*laboratory of LOGIstics in CAlabria*)

Funding entity: POR Calabria 2000-2006

**EUREKA!** An idea for energy

Project: *Fraud Detection via Load Profiles*

Funding entity: Enel University, area “Distribution Nets of Electricity”

PARTICIPATION  
IN  
PROPOSAL  
DRAFTING  
(PROJECTS  
NOT  
ACCEPTED)

**PDS-OBDA:** Protected Data Sharing with OBDA

Target funding programme and entity: ICT-13-2018-2019, European Commission

**ALGO-AUDIT:** Network for Training Algorithm Auditors for Privacy-Preserving, Fair and Transparent Data-Driven Decisions

Target funding programme and entity: H2020-MSCA-ITN-2018, European Commission

**SeDaSOMA:** Serendipitous, Data-as-a-Service-oriented, Open big data Management and Aalytics framework

Target funding programme and entity: H2020-ICT-16-2015, European Commission

## EVALUATION OF FUNDED COOPERATIVE PROJECTS/GRANTS

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APPOINTED EVALUATOR OF PROJECT PROPOSALS	<p>Funding entity: <b>Politecnico of Turin</b> Funding programme: <b>Call for University Projects (“<i>Bando di Ateneo</i>”)</b> Proposal category: Cooperative Research (“<i>Ricerca Collaborativa</i>”) Call(s): 2025</p> <p>Funding entity: <b>Austrian Research Promotion Agency (FFG)</b> Funding programme: <b>Austrian Climate Research Programme (ACRP)</b> Proposal category: Projects of Oriented Basic Research Call(s): 17th (2024)</p> <p>Funding entity: <b>European Commission</b> Funding programme: <b>Horizon Europe</b> Proposal category: Research &amp; Innovation Action (RIA) Call(s): 2022</p> <p>Funding entity: <b>European Commission</b> Funding programme: <b>Horizon 2020 ICT</b> Proposal category: Innovation Action (IA) Call(s): 2017</p> <p>Funding entity: <b>Austrian Research Promotion Agency (FFG)</b> Funding programme: <b>ICT of the Future</b> Proposal category: Industrial Research, Experimental Development Call(s): 4th (2015), 5th (2016), 6th (2017)</p> <p>Funding entity: <b>Austrian Research Promotion Agency (FFG)</b> Funding programme: <b>Beyond Europe</b> Proposal category: Industrial Research, Experimental Development Call(s): 1st (2016), 2nd (2017)</p> <p>Funding entity: <b>Austrian Research Promotion Agency (FFG) &amp; Chinese Academy of Sciences (CAS)</b> Funding programme: <b>ICT of the Future – Bilateral China Call</b> Proposal category: Industrial Research, Experimental Development Call(s): 1st (2017)</p>
APPOINTED REVIEWER OF PROJECTS	<p>Funding entity: <b>European Commission</b> Call(s): HORIZON-CL4-2022-DATA-01; HORIZON-CL4-2023-HUMAN-01 Review(s): mid-term review (Jun 2024); mid-term review (Jun 2025)</p>

## HONORS AND AWARDS

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### **Italian National Scientific Habilitation** (*Abilitazione Scientifica Nazionale (ASN)*)

Granted by: Italian Ministry of Education, Universities and Research (*MIUR*)

Role: Associate Professor (*II fascia*)

Sector 01/B1 - Computer science (*Informatica*), valid from Aug 7<sup>th</sup>, 2018 to Aug 7<sup>th</sup>, 2030

Sector 09/H1 - Information processing systems (*Sistemi di elaborazione delle informazioni*), valid from Jul 26<sup>th</sup>, 2018 to Jul 26<sup>th</sup>, 2030

### **Top-2% Most Cited Scientist across all Scientific Disciplines**

Updated science-wide author databases of standardized citation indicators

Stanford University

[Version 8 \(latest\)](#) – Sep 19, 2025 [[career-long impact](#)]

[Version 5](#) – Nov 3, 2022 [[single recent year impact](#)]

[Version 4](#) – Oct 10, 2022 [[single recent year impact](#)]

### **SIGMOD 2025 Distinguished Reviewer Award**

Granted to reviewers who were “*nominated by peers for being outstanding program committee members*”

### **KDD 2025 (1st cycle) Outstanding Reviewer Award**

Granted to the top 10% of reviewers

### **KDD 2025 (2nd cycle) Commendable Reviewer Award**

Granted to the top 20% to 50% of reviewers

### **KDD 2023 Certificate of Excellence in Reviewing**

Granted to reviewers “*in recognition of an outstanding contribution to the quality of KDD*”

### **WWW 2023 Best Reviewer Award**

Granted to reviewers “*selected by track chairs of the research track from the Program Committee and Senior Program Committee, based on the quality of their reviews, and their engaged participation during the discussion phase*”

### **ECML-PKDD 2021 Best Reviewer Award**

Granted to selected reviewers for “*their timely and insightful reviews and for actively participating in the discussions*”

### **ABI IT Innovation Award 2018** (“Premio Innovazione IT – Tecnologie Disruptive”)

Granted by “Associazione Bancaria Italiana” (ABI), the trade association of Italian banks

Awarded system: UC Balance (an innovative system for network-based invoice factoring)

Personal contribution: design, theoretical characterization, and implementation of the algorithmic core behind the system

### **WWW 2017 Outstanding Reviewer Award**

Granted to selected reviewers “*who went well beyond their call of duty, provided exceptional reviews, and contributed a lot to discussions*”

### **BDTA 2016 Best Paper Award**

Paper “*Handling Uncertainty in Clustering Art-exhibition Visiting Styles*” [67]

“**BC**” label (“*paper where the results are backed by code*”)

from the 2015 Arizona University Repeatability in Computer Science study

(<http://reproducibility.cs.arizona.edu/v2>)

Paper “*Uncertain Centroid based Partitional Clustering of Uncertain Data*” [23]

### **SIGMOD 2011 Repeatability and Workability Evaluation (RWE) label**

Paper “*Advancing Data Clustering via Projective Clustering Ensembles*” [51]

### **SDM 2009 Student Travel Award**

Paper “*Diversity-based Weighting Schemes for Clustering Ensembles*” [55]

### **Italian Innovation Award** (*Premio Nazionale per l’Innovazione*) - I edition (2009)

*Fraud Detection via Load Profiles* project within *EUREKA! An idea for energy* initiative

### **(Italian) Habilitation to practice as an Engineer**

Section A, Field of Information Technology

Qualifying exam passed on October 2006 (1st 2006 session), no expiration date



**Tuition fee reimbursement** (based *solely* on merit)  
M.Sc. in Computer Engineering  
University of Calabria, 2003

## INDUSTRIAL ACTIVITY

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PATENTS	<p>H. Vahabi, F. Gullo <i>Method and/or System for Recommender System</i> Patent Granted [US10796239B2, 2020-10-06]</p> <p>X. Bai, B. B. Cambazoglu, F. Gullo, A. Mantrach, F. Silvestri <i>Using Exogenous Sources for Personalization of Website Services</i> Patent Granted [US9792372B2, 2017-10-10]</p> <p>F. Bonchi, A. Gionis, F. Gullo, A. Ukkonen <i>Method and System for Computing Relationship-Constrained Shortest Paths in Large Networks</i> Defensive Publication</p> <p>F. Bonchi, A. Gionis, F. Gullo, C. Tsourakakis <i>Method and System for Extracting High-quality Subgraphs from Large Graphs</i> Defensive Publication</p>
INDUSTRIAL PROJECTS (SELECTED)	<p><i>AI-powered Search for Banking Knowledge Bases based on RAG and LLMs</i> Outcome: PoC Skills: large language models (LLMs); retrieval-augmented generation (RAG); semantic search; Technology: OpenAI; Azure Workbench</p> <p><i>Graph-based Credit-risk Assessment</i> Outcome: PoC Skills: (temporal) graph representation learning; supervised learning Technology: Palantir Foundry, Python, Docker, PyTorch</p> <p><i>Prediction of Credit Card Installments</i> Outcome: production Skills: supervised learning, sequential learning, reinforcement learning Technology: Palantir Foundry, Python, PySpark</p> <p><i>Building and Analyzing a Knowledge Graph of HW/SW Resources</i> Outcome: PoC Skills: graph databases, (knowledge) graph analytics Technology: Neo4j, Python, Java</p> <p><i>Building and Analyzing a Knowledge Graph of Corporates</i> Product: PoC Skills: graph databases, (knowledge) graph analytics Technology: Neo4j, Python, Java</p> <p><i>A Complete NLP Pipeline for Processing Garnishment Documents</i> Outcome: production Skills: NLP, supervised learning, word embeddings, OCR Technology: Scala, Python, Weka, Stanford CoreNLP, SpaCy, OpenCV, Tesseract</p> <p><i>Network-based Invoice Factoring</i> Outcome: production Skills: combinatorial optimization, graph analytics, network flow, cycle enumeration Technology: Scala</p> <p><i>Email Classification for Talent Acquisition</i></p>

Outcome: prototype  
Skills: NLP, supervised learning  
Technology: Java, Weka, JavaMail, EWS Java API

*Identification of Crisis Events for Business Continuity*

Outcome: prototype  
Skills: NLP, entity recognition and disambiguation, sentiment analysis, text categorization  
Technology: Scala, Spark, HBase

*Entity Recognition and Disambiguation for Financial News*

Outcome: PoC  
Skills: NLP, entity recognition and disambiguation, MinHash, locality-sensitive hashing (LSH)  
Technology: Scala, Spark, HBase

*Detecting Corporate Group Structure from Unstructured Data*

Outcome: production  
Skills: web scraping, learning from positive and unlabeled examples, NLP, entity recognition and disambiguation, computer vision  
Technology: Scala, Spark, Weka, OpenCV

*Exploiting Search History of Users for News Personalization*

Outcome: production  
Skills: personalization of online services, query-log analysis, distributed computing  
Technology: Java, Hadoop

*Predicting the Next Application a User is Going to Use*

Outcome: PoC  
Skills: supervised learning, recommender systems, mobile data, distributed computing  
Technology: Java, Hadoop, Hive

*Churn Analysis on Flickr*

Outcome: PoC  
Skills: churn analysis, supervised learning, distributed computing  
Technology: Java, Matlab, Hadoop

*Optimal User Engagement through Social-Diffusion-aware Recommender Systems*

Outcome: production  
Skills: recommender systems, information diffusion in complex networks, distributed computing  
Technology: Java, Hadoop

*Ticker Similarity Search*

Outcome: prototype  
Skills: online similarity search, time-series analysis, locality-sensitive hashing (LSH)  
Technology: Java

*Identification of Historical Trends in Organic Search via Query-log Analysis*

Outcome: prototype  
Skills: query-log analysis, distributed computing  
Technology: Java, Hadoop

OPEN SOURCE	PyCCAlg – Correlation-Clustering Algorithms in Python
PROTOTYPES	<a href="https://github.com/fgullo/pyccalg">https://github.com/fgullo/pyccalg</a>
(CO-)DEVELOPED	Skills: correlation clustering, linear programming
(SELECTED)	Technology: Python, SciPy, PuLP
	JPCE – Java-based Projective Clustering Ensembles tool
	<a href="http://people.dimes.unical.it/andreatagarelli/software/jpce/">http://people.dimes.unical.it/andreatagarelli/software/jpce/</a>
	<a href="https://github.com/fgullo/jpce">https://github.com/fgullo/jpce</a>
	Skills: clustering ensembles, subspace clustering, projective clustering ensembles
	Technology: Java

JCLUdata – a Java software for clustering uncertain data  
<https://github.com/fgullo/jcludata>  
 Skills: clustering, uncertain data, probability theory, information theory  
 Technology: Java

Hermes – A distributed-messaging tool for NLP  
<http://hermes.rnd.unicredit.it:9603>  
 Skills: NLP, graph analytics  
 Technology: Scala, Spark, Kafka, Redis, ElasticSearch, Hbase

MSPtool – Mass Spectra Preprocessing tool  
<http://polifemo.deis.unical.it/~gtradigo/jnlp/msptool/>  
 Skills: bioinformatics, mining of biological data, time-series analysis  
 Technology: Java, JFreeChart, Java Web Start, J2EE

TSCtool – Time Series Clustering tool  
 Skills: time-series analysis, mining of spatio/temporal data  
 Technology: Java, JFreeChart

## TECHNICAL SKILLS (NON-EXHAUSTIVE)

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GENERAL-PURPOSE PROGRAMMING LANGUAGES: Java, Python, Scala, C/C++

DOMAIN-SPECIFIC LANGUAGES:

MATLAB (matrix programming), SQL (relational DB querying), HTML (web-page markup), XML (machine-readable doc markup), Bash (shell scripting), LaTeX (typesetting), Markdown (text formatting), Prolog, Datalog (logic programming)

VERSIONING TECHNOLOGY: Git, SVN

BUILD-AUTOMATION TECHNOLOGY: SBT, Apache Maven

DATABASES:

MySQL, PostgreSQL (RDBMSs), Neo4j (graph DBs), Redis, Couchbase Server (non-relational DBs)

VIRTUALIZATION TECHNOLOGY: Docker

CLOUD-COMPUTING SUITES: Google Cloud Platform, Microsoft Azure

MACHINE-LEARNING FRAMEWORKS: PyTorch, PyTorch Geometric

KNOWLEDGE-GRAPH-EMBEDDING FRAMEWORKS: PyKEEN, OpenKE

DISTRIBUTED-COMPUTING TECHNOLOGY: Apache Hadoop, Apache Spark, Apache HBase, Apache Hive

STREAM-PROCESSING TECHNOLOGY: Apache Kafka

DATA-MANAGEMENT PLATFORMS: Palantir Foundry

SEARCH ENGINES: Elasticsearch

INTERACTIVE-COMPUTING TECHNOLOGY: Jupyter Notebook

WEB-APPLICATION TECHNOLOGY: Java EE, Java servlet, JavaServer Pages (JSP), Jboss, Apache Tomcat

SOFTWARE LIBRARIES:

Stanford CoreNLP, Weka, JDBC, JavaMail, JFreeChart (Java); spaCy, NumPy, SciPy, pandas, NetworkX, OpenCV, scikit-learn, Hugging Face Transformers (Python)

OPERATING SYSTEMS: macOS, Windows, Unix/Linux

QUANTUM COMPUTING: IBM Qiskit SDK

## SELECTED PUBLICATIONS (HIGH-RANKED VENUES)

### JOURNALS

- [1] B. Lakha, J. Layne, E. Serra, F. Gullo, S. Jajodia. CAPTOR: Cyber Attack Protection via Temporal Online Graph Representation Learning. *IEEE Transactions on Big Data (TBDATA)*, 2025 (DOI: <https://doi.org/10.1109/TBDATA.2025.3621145>).
- [2] A. D'Angelo F. Gullo, G. Stilo. The forget-set identification problem. *Machine Learning (MACH)*, Vol. 114, Article No. 247, 2025 (DOI: <https://doi.org/10.1007/s10994-025-06897-9>).
- [3] F. Gullo, D. Mandaglio, A. Tagarelli. Neural Discovery of Balance-aware Polarized Communities. *Machine Learning (MACH)*, Vol. 113: 6611-6644, 2024 (DOI: <https://doi.org/10.1007/s10994-024-06581-4>).
- [4] A. Anagnostopoulos, V. Arrigoni, F. Gullo, G. Salvatori, L. Severini: General-purpose Query Processing on Summary Graphs. *Social Network Analysis and Mining (SNAM)* 14(1): 157, 2024 (DOI: <https://doi.org/10.1007/s13278-024-01314-w>).
- [5] O. Balalau, F. Bonchi, T-H. Hubert Chan, F. Gullo, M. Sozio, H. Xie. Finding Subgraphs with Maximum Total Density and Limited Overlap in Weighted Hypergraphs. *ACM Transactions on Knowledge Discovery from Data (TKDD)*, 18(4): 1-21, 2024 (DOI: <https://doi.org/10.1145/3639410>).
- [6] F. Gullo, D. Mandaglio, A. Tagarelli. A Combinatorial Multi-Armed Bandit Approach to Correlation Clustering. *Data Mining and Knowledge Discovery (DAMI)*, 37(4): 1630-1691, 2023 (DOI: <https://doi.org/10.1007/s10618-023-00937-5>).
- [7] J. Layne, J. Carpenter, E. Serra, F. Gullo. Temporal SIR-GN: Efficient and Effective Structural Representation Learning for Temporal Graphs. *Proceedings of the VLDB Endowment (PVLDB)*, 16(9):2075-2089, 2023 (DOI: <https://dx.doi.org/10.14778/3598581.3598583>).
- [8] E. Galimberti, M. Ciaperoni, A. Barrat, F. Bonchi, C. Cattuto, F. Gullo. Span-core Decomposition for Temporal Networks: Algorithms and Applications. *ACM Transactions on Knowledge Discovery from Data (TKDD)*, 15(1): 2:1-2:44, 2021 (DOI: <https://dx.doi.org/10.1145/3418226>).
- [9] I. Bordino, F. Gullo, G. Legnaro. Advancing Receivable Financing via a Network-based Approach. *IEEE Transactions on Network Science and Engineering (TNSE)*, 8(2):1328-1337, 2021 (DOI: <http://dx.doi.org/10.1109/TNSE.2020.3005612>).
- [10] I. Bordino, A. Ferretti, F. Gullo, S. Pascolutti. GarNLP: A Natural Language Processing Pipeline for Garnishment Documents. *Information Systems Frontiers (ISFI)*, 23(1):101-114, 2021 (DOI: <http://dx.doi.org/10.1007/s10796-020-09997-0>).
- [11] M. Ciaperoni, E. Galimberti, F. Bonchi, C. Cattuto, F. Gullo, A. Barrat. Relevance of temporal cores for epidemic spread in temporal networks. *Scientific Reports (SciRep)*, 10, Article number: 12529, 2020 (DOI: <https://dx.doi.org/10.1038/s41598-020-69464-3>).
- [12] E. Galimberti, F. Bonchi, F. Gullo, T. Lanciano. Core Decomposition in Multilayer Networks: Theory, Algorithms, Applications. *ACM Transactions on Knowledge Discovery from Data (TKDD)*, 14(1):11:1-11:40, 2020 (DOI: <http://dx.doi.org/10.1145/3369872>).
- [13] A. Khan, F. Bonchi, F. Gullo, A. Nufer. Conditional Reliability in Uncertain Graphs. *IEEE Transactions on Knowledge and Data Engineering (TKDE)*, 30(11):2078-2092, 2018 (DOI: <http://dx.doi.org/10.1109/TKDE.2018.2816653>).
- [14] A. Tagarelli, A. Amelio, F. Gullo. Ensemble-based Community Detection in Multilayer Networks. *Data Mining and Knowledge Discovery (DAMI)*, 31(5):1506-1543, 2017 (DOI: <https://doi.org/10.1007/s10618-017-0543-1>).

<http://dx.doi.org/10.1007/s10618-017-0528-8>).

- [15] F. Gullo, G. Ponti, A. Tagarelli, S. Greco. An Information-Theoretic Approach to Hierarchical Clustering of Uncertain Data. *Information Sciences*, 402:199-215, 2017 (DOI: <http://dx.doi.org/10.1016/j.ins.2017.03.030>).
- [16] X. Bai, B. Barla Cambazoglu, F. Gullo, A. Mantrach, F. Silvestri. Exploiting Search History of Users for News Personalization. *Information Sciences*, 385-386:125-137, 2017 (DOI: <http://dx.doi.org/10.1016/j.ins.2016.12.038>).
- [17] P. Parchas, F. Gullo, D. Papadias, F. Bonchi. Uncertain Graph Processing through Representative Instances. *ACM Transactions on Database Systems (TODS)*, 40(3):20:1-20:39, 2015 (DOI: <http://dx.doi.org/10.1145/2818182>).
- [18] N. Barbieri, F. Bonchi, E. Galimberti, F. Gullo. Efficient and Effective Community Search. *Data Mining and Knowledge Discovery (DAMI)*, 29(5):1406-1433, 2015 (DOI: <http://dx.doi.org/10.1007/s10618-015-0422-1>).
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