

Curriculum



Nome Name:	Mattia
Cognome Surname:	D'EMIDIO

ORCID:	0000-0001-7833-9520
Scopus Author ID:	57207254487
WOS Author ID:	n.d.
Sito WEB WEB site:	www.mattiademidio.com

POSIZIONE PROFESSIONALE ATTUALE / CURRENT PROFESSIONAL POSITION:

Posizione attuale Current position:	In servizio
Qualifica Qualification:	Professore Associato (L. 240/10)
Ateneo/Ente/Azienda University/Institution/Company:	Università degli Studi dell'AQUILA
Nazione Ateneo/Ente/Azienda University/Institution/Company Country:	ITA
Anno inizio Start Year:	2024
Anno fine End Year:	n.d.

PRECEDENTI ESPERIENZE LAVORATIVE (ULTIMI 10 ANNI) / PREVIOUS WORK EXPERIENCE (LAST 10 YEARS):

Qualifica Qualification:	Ricercatore a t.d. - t.pieno (art. 24 c.3-b L. 240/10)
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Ateneo/Ente/Azienda University/Institution/Company	Università degli Studi dell'AQUILA
Posizione Sede Lavorativi (indicare Nazione e Città) Workplace Location (specify Country and City):	L'Aquila, AQ, Italia
Anno inizio Start Year:	2021
Anno fine End Year:	2024
Descrizione Description:	

Qualifica Qualification:	Ricercatore a t.d. - t.pieno (art. 24 c.3-a L. 240/10)
Ateneo/Ente/Azienda University/Institution/Company	Università degli Studi dell'AQUILA
Posizione Sede Lavorativi (indicare Nazione e Città) Workplace Location (specify Country and City):	L'Aquila, AQ, Italia
Anno inizio Start Year:	2017
Anno fine End Year:	2020
Descrizione Description:	

LINGUE / LANGUAGES:

Lingua Language:	Inglese
Scrittura Writing:	C2
Comunicazione Communication:	C2

Lingua Language:	Italiano
Scrittura Writing:	madrelingua
Comunicazione Communication:	madrelingua

AREA/SETTORE SCIENTIFICO-DISCIPLINARE / AREA/SECTOR SCIENTIFIC-DISCIPLINARY

Area scientifico-disciplinare	Ingegneria industriale e dell'informazione
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Area scientific-disciplinary:	
Area scientifico-disciplinare codice Area scientific-disciplinary code:	09
Settore scientifico-disciplinare codice Sector scientific-disciplinary code:	-Sistemi di elaborazione delle informazioni
Settore scientifico-disciplinare codice Sector scientific-disciplinary code:	-IINF-05/A

Area scientifico-disciplinare Area scientific-disciplinary:	Scienze matematiche e informatiche
Area scientifico-disciplinare codice Area scientific-disciplinary code:	01
Settore scientifico-disciplinare codice Sector scientific-disciplinary code:	-Informatica
Settore scientifico-disciplinare codice Sector scientific-disciplinary code:	-INFO-01/A

**DESCRIZIONE DEI PRINCIPALI RISULTATI SCIENTIFICI
CONSEGUITI NEGLI ULTIMI 10 ANNI (CON ANNESSO ELENCO DI
MASSIMO 10 PUBBLICAZIONI) / DESCRIPTION OF THE MAIN
SCIENTIFIC RESULTS ACHIEVED IN THE LAST 10 YEARS (WITH
ATTACHED LIST OF MAXIMUM 10 PUBLICATIONS):**

Descrizione Description:	<p><i>Mattia D'Emidio is an Italian computer scientist and engineer, Associate Professor of Computer Engineering at the University of L'Aquila. His work centers on algorithm engineering, focusing on the design, analysis, and efficient implementation of algorithms for large-scale and dynamic graphs, distributed systems, and autonomous agents. His research blends strong theoretical foundations with experimental validation to address real-world computational problems. He earned his Ph.D. in Computer Science at the University of L'Aquila, with a visiting period at Inria Sophia Antipolis (France), specializing in combinatorial optimization and algorithm design. He later worked as a postdoctoral researcher at the University of L'Aquila and the Gran Sasso Science Institute on modern network algorithms. He became Assistant Professor (RTD-A) in 2017, Tenured Assistant Professor (RTD-B) in 2021, and Associate Professor in 2024. Mattia has contributed to several major research projects, including SCHEDULE (algorithms for smart intersections with autonomous vehicles), EMERGE (connected and secure vehicles), ASSIOMI (industrial machine monitoring), and DarkSide (dark matter detection experiments). Beyond research, he co-founded TEEMA, a spin-off company offering cloud-based platforms for modeling and analyzing complex systems. He teaches courses in Big Data: Models and Algorithms and Algorithm Engineering and is involved in the governance of several Master's programs and the Ph.D. Program in Information</i></p>
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	<p>and Communication Technology at the University of L'Aquila. Mattia holds the Italian National Scientific Habilitation for Associate Professor in both Computer Science (INF/01) and Computer Engineering (ING-INF/05). He is a member of ACM (Association for Computing Machinery), EATCS (European Association for Theoretical Computer Science), GNCS-IndAM, CINI, GRIN, and GII. His research is published in leading journals and conferences. He actively participates in the organization of international conferences, serving on program committees for events such as SEA (Symposium on Experimental Algorithms), ECAI (European Conference on Artificial Intelligence), ASONAM (Advances in Social Networks Analysis and Mining), and ATMOS (Algorithmic Approaches for Transportation Modeling and Optimization). Recent publications include new algorithmic approaches to digraph coloring games and techniques for mining dynamic graphs to find k shortest paths, reinforcing his focus on efficient computation for large, evolving systems.</p>
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PUBBLICAZIONI / PUBLICATIONS:

Anno della pubblicazione Year of publication:	2024
Citazione Citation:	Andrea D'Ascenzo, Mattia D'Emidio, Michele Flammini, Gianpiero Monaco (2024). Digraph k -Coloring Games: New Algorithms and Experiments. THE JOURNAL OF ARTIFICIAL INTELLIGENCE RESEARCH, vol. 81, p. 163-202, ISSN: 1076-9757, doi: 10.1613/JAIR.1.16174

Anno della pubblicazione Year of publication:	2024
Citazione Citation:	David Coudert, Andrea D'Ascenzo, Mattia D'Emidio (2024). Indexing Graphs for Shortest Beer Path Queries. In: (a cura di): Paul C. Bouman and Spyros C. Kontogiannis, 24th Symposium on Algorithmic Approaches for Transportation Modelling, Optimization, and Systems, ATMOS 2024, September 5-6, 2024, Royal Holloway, London, United Kingdom. vol. 123, p. 1-18, Schloss Dagstuhl - Leibniz-Zentrum für Informatik, ISBN: 978-3-95977-350-8, doi: 10.4230/OASICS.ATMOS.2024.2

Anno della pubblicazione Year of publication:	2024
Citazione Citation:	Gianlorenzo D'Angelo, Mattia D'Emidio, Esmail delfarazpahlevanloo, Gabriele Di Stefano (2024). Improved Algorithms for the Capacitated Team Orienteering Problem. In: (a cura di): Paul C. Bouman and Spyros C. Kontogiannis, 24th Symposium on Algorithmic Approaches for Transportation Modelling, Optimization, and Systems, {ATMOS} 2024, September 5-6, 2024, Royal Holloway, London, United Kingdom. vol. 123, p. 1-17, Schloss Dagstuhl - Leibniz-Zentrum für Informatik, ISBN: 978-3-95977-350-8, doi: 10.4230/OASICS.ATMOS.2024.7

Anno della pubblicazione Year of publication:	2025
Citazione Citation:	D'Ascenzo Andrea, D'Emidio Mattia (2025). On Mining Dynamic Graphs for k Shortest Paths. In: (a cura di): Aiello Luca Maria and Chakraborty Tanmoy and Gaito Sabrina, Social Networks Analysis and Mining. p. 320-336, Springer Nature Switzerland, ISBN: 978-3-031-78541-2, doi: 10.1007/978-3-031-78541-2_20

Anno della pubblicazione Year of publication:	2019
Citazione Citation:	Gianlorenzo D'Angelo, Mattia D'Emidio, Daniele Frigioni (2019). Fully dynamic 2-hop cover labeling. ACM JOURNAL OF EXPERIMENTAL ALGORITHMS, vol. 24, p. 1-36, ISSN: 1084-6654, doi: 10.1145/3299901

Anno della pubblicazione Year of publication:	2020
Citazione Citation:	Gianlorenzo D'Angelo, Mattia D'Emidio, Shantanu Das, Alfredo Navarra, Giuseppe Prencipe (2020). Leader Election and Compaction for Asynchronous Silent Programmable Matter. In: (a cura di): Amal El Fallah Seghrouchni and Gita Sukthankar and Bo An and Neil Yorke-Smith, Proceedings of the 19th International Conference on Autonomous Agents and Multiagent Systems, {AAMAS} '20, Auckland, New Zealand, May 9-13,2020. p. 276-284, International Foundation for Autonomous Agents and Multiagent Systems, ISBN: 978-1-4503-7518-4

Anno della pubblicazione Year of publication:	2017
Citazione Citation:	Cionini, Alessio, D'ANGELO, GIANLORENZO, D'EMIDIO, MATTIA, FRIGIONI, DANIELE, Giannakopoulou, Kalliopi, Paraskevopoulos, Andreas, Zaroliagis, Christos (2017). Engineering graph-based models for dynamic timetable information systems. JOURNAL OF DISCRETE ALGORITHMS, vol. 46-47, p. 40-58, ISSN: 1570-8667, doi: 10.1016/j.jda.2017.09.001

Anno della pubblicazione Year of publication:	2020
Citazione Citation:	D'Angelo G., D'Emidio Mattia, Das Shantanu, Navarra A., Prencipe Giuseppe (2020). Asynchronous Silent Programmable Matter Achieves Leader Election and Compaction. IEEE ACCESS, vol. 8, p. 207619-207634, ISSN: 2169-3536, doi: 10.1109/ACCESS.2020.3038174

Anno della pubblicazione Year of publication:	2023
Citazione Citation:	Andrea D'Ascenzo, Mattia D'Emidio (2023). Top-k Distance Queries on Large Time-Evolving Graphs. IEEE ACCESS, vol. 11, p. 102228-

	102242, ISSN: 2169-3536, doi: 10.1109/ACCESS.2023.3316602
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Anno della pubblicazione Year of publication:	2020
Citazione Citation:	Basciani, Francesco, DEmidio, Mattia, Di Ruscio, Davide, Frigioni, Daniele, Iovino, Ludovico, Pierantonio, Alfonso (2020). Automated Selection of Optimal Model Transformation Chains via Shortest-Path Algorithms. IEEE TRANSACTIONS ON SOFTWARE ENGINEERING, vol. 46, p. 251-279, ISSN: 0098-5589, doi: 10.1109/TSE.2018.2846223

DESCRIZIONE DEI PRINCIPALI PROGETTI DI RICERCA E PREMI CONSEGUITI NEGLI ULTIMI 10 ANNI (CON ANNESSO ELENCO DI MASSIMO 10 RISULTATI, INCLUDENDO, A TITOLO DI ESEMPIO, PRINCIPAL INVESTIGATOR O COORDINATORE LOCALE DI PROGETTI DI RICERCA COMPETITIVI NAZIONALI O INTERNAZIONALI, SIGNIFICATIVI PREMI CONSEGUITI PER LA PROPRIA ATTIVITÀ DI RICERCA)/ DESCRIPTION OF THE MAIN RESEARCH PROJECTS AND AWARDS AWARDED IN THE LAST 10 YEARS (WITH ATTACHED LIST OF MAXIMUM 10 ACHIEVEMENTS, INCLUDING, FOR EXAMPLE, PRINCIPAL INVESTIGATOR OR LOCAL COORDINATOR OF NATIONAL OR INTERNATIONAL COMPETITIVE RESEARCH PROJECTS, SIGNIFICANT AWARDS AWARDED FOR YOUR RESEARCH ACTIVITY):

Descrizione Description:	- Project SCHEDULE 2024 - 2025. Local Unit Leader of Project SCHEDULE (Smart interseCtions withH connEcted and aUtonomous vehicLEs) funded by the European Union through NextGenEU Programme, partnership w/ Hipert srl and Gran Sasso Science Institute - Project "Scalable Algorithms for Very Large Systems of Linear Equations". Principal Investigator, Progetto di Ateneo per la ricerca di base e avvio alla ricerca 2024 (senior researcher track). University of L'Aquila, Italy. - Co-Founder of TEEMA (Tools for Efficient ElectroMagnetic Analysis), spin-off of the University of L'Aquila. - Project EMERGE. 2021 - 2024. Member of Project EMERGE (EMERGE initiative: Connected, geo-localized and cybersecure vehicles), funded by Italian Ministry of Economic Development (MISE) and Regione Abruzzo. More at www.mattiademidio.com
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Descrizione Description:	- Project SCHEDULE 2024 - 2025. Local Unit Leader of Project SCHEDULE (Smart interseCtions withH connEcted and aUtonomous vehicLEs) funded by the European Union through NextGenEU Programme, partnership w/ Hipert srl and Gran Sasso Science Institute - Project
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	<p>"Scalable Algorithms for Very Large Systems of Linear Equations". Principal Investigator, Progetto di Ateneo per la ricerca di base e avvio alla ricerca 2024 (senior researcher track). University of L'Aquila, Italy. - Co-Founder of TEEMA (Tools for Efficient ElectroMagnetic Analysis), spin-off of the University of L'Aquila. - Project EMERGE. 2021 - 2024. Member of Project EMERGE (EMERGE initiative: Connected, geo-localized and cybersecure vehicles), funded by Italian Ministry of Economic Development (MISE) and Regione Abruzzo. More at www.mattiademidio.com - Unit Leader of Project SCHEDULE (Smart interseCtions with connEctED and aUtonomous vehicLEs) funded by the European Union through NextGenEU Programme, partnership w/ Hipert srl and Gran Sasso Science Institute within Framework MoveOver (https://www.fondazione-restart.it/projects/f15-moveover/). - Member of Centre of Excellence EX-EMERGE, University of L'Aquila, Italy - Co-Founder of TEEMA (Tools for Efficient ElectroMagnetic Analysis), spin-off of the University of L'Aquila. http://www.teema.studio - Contributor to Project EMERGE (EMERGE initiative: Connected, geo-localized and cybersecure vehicles), funded by Italian Ministry of Economic Development (MISE) and Regione Abruzzo. - Representative of "University of L'Aquila" within the National Interuniversity Consortium for Informatics (CINI), National Laboratory on Data Science - Principal investigator of Project "Scalable Algorithms for Very Large Systems of Linear Equations. ", funded by University of L'Aquila w/ 13k eur 2024 - Principal investigator of Project "New algorithmic frameworks for processing and analyzing massive networks", funded w/ 5k eur by University of L'Aquila</p>
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DESCRIZIONE DEI PRINCIPALI RISULTATI CONSEGUITI NEGLI ULTIMI 10 ANNI IN TERMINI DI SVILUPPO DI RETI E RELAZIONI SCIENTIFICHE NAZIONALI E INTERNAZIONALI (CON ANNESSO ELENCO DI MASSIMO 5 RISULTATI, INCLUDENDO, A TITOLO DI ESEMPIO, PARTECIPAZIONE O ORGANIZZAZIONE DI CONVEGNI NAZIONALI E INTERNAZIONALI; CONTRIBUTI A CONSORZI DI RICERCA) / DESCRIPTION OF THE MAIN RESULTS ACHIEVED IN THE LAST 10 YEARS IN TERMS OF DEVELOPMENT OF NATIONAL AND INTERNATIONAL SCIENTIFIC NETWORKS AND RELATIONS (WITH ATTACHED LIST OF MAXIMUM 5 RESULTS, INCLUDING, FOR EXAMPLE, PARTICIPATION OR ORGANIZATION OF NATIONAL AND INTERNATIONAL CONFERENCES; CONTRIBUTIONS TO RESEARCH CONSORTIA):

<p>Descrizione Description:</p>	<p>- Member of DarkSide Collaboration: Two phase argon TPC for Dark Matter Direct Detection. INFN, L'Aquila, Italy. https://en.wikipedia.org/wiki/DarkSide - Visiting Professor and Scientific Collaborator of GSSI (Gran Sasso Science Institute) - Active collaborations w/ INRIA Sophia-Antipolis, COATI (Combinatorics, Optimization, and Algorithms for</p>
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	<i>Telecommunications) Team, joint project-team between the Inria centre at Université Côte d'Azur and the I3S laboratory (France, Director: Prof. D. Coudert).</i>
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Descrizione Description:	- Member of DarkSide Collaboration: Two phase argon TPC for Dark Matter Direct Detection. INFN, L'Aquila, Italy. https://en.wikipedia.org/wiki/DarkSide - Visiting Professor and Scientific Collaborator of GSSI (Gran Sasso Science Institute) - Active collaborations w/ INRIA Sophia-Antipolis, COATI (Combinatorics, Optimization, and Algorithms for Telecommunications) Team, joint project-team between the Inria centre at Université Côte d'Azur and the I3S laboratory (France, Director: Prof. D. Coudert). - Member of the Program Committee of the 25th Symposium on Algorithmic Approaches for Transportation Modelling, Optimization, and Systems (ATMOS 2025). - Chair of the Program Committee of the 22nd Symposium on Algorithmic Approaches for Transportation Modelling, Optimization, and Systems (ATMOS 2022). - Member of the Program Committee of the 23rd Symposium on Experimental Algorithms (SEA 2025). - Member of the Program Committee of the 28th European Conference on Artificial Intelligence (ECAI 2025). - Member of the Program Committee of the 16th International Conference on Advances in Social Networks Analysis and Mining (ASONAM 2024).
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DESCRIZIONE DEI PRINCIPALI RISULTATI CONSEGUITI NEGLI ULTIMI 10 ANNI IN TERMINI DI SUPPORTO ALLA COMUNITÀ SCIENTIFICA (CON ANNESSO ELENCO DI MASSIMO 5 RISULTATI, INCLUDENDO, A TITOLO DI ESEMPIO, RESPONSABILITÀ DI DIREZIONE DI COMITATI EDITORIALI; INCARICHI DI VALUTAZIONE DELLA RICERCA PRESSO ISTITUZIONI NAZIONALI O INTERNAZIONALI; RESPONSABILITÀ ISTITUZIONALI ALL'INTERNO DELL'ISTITUZIONE DI APPARTENENZA O DI ALTRE ISTITUZIONI) / DESCRIPTION OF THE MAIN RESULTS ACHIEVED IN THE LAST 10 YEARS IN TERMS OF SUPPORT TO THE SCIENTIFIC COMMUNITY (WITH ATTACHED LIST OF MAXIMUM 5 RESULTS, INCLUDING, FOR EXAMPLE, MANAGEMENT RESPONSIBILITIES OF EDITORIAL COMMITTEES; RESEARCH EVALUATION ROLES AT NATIONAL OR INTERNATIONAL INSTITUTIONS; INSTITUTIONAL RESPONSIBILITIES WITHIN THE INSTITUTION OF AFFILIATION OR OTHER INSTITUTIONS):

Descrizione Description:	<i>Regolare attività di revisore per journal e conferenze internazionali. Lista disponibile qui: http://www.mattiademidio.com/academia.php Partecipazione a consorzi e associazioni di networking e supporto alla comunità scientifica, e.g. ACM, Italian National Research Group for</i>
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	<p><i>Scientific Computing, Istituto Nazionale di Alta Matematica, EATCS. Lista completa:</i> http://www.mattiademidio.com/resume.php</p>
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<p>Descrizione Description:</p>	<p>Regolare attività di revisore per journal e conferenze internazionali. Lista disponibile qui: http://www.mattiademidio.com/academia.php Partecipazione a consorzi e associazioni di networking e supporto alla comunità scientifica, e.g. ACM, Italian National Research Group for Scientific Computing, Istituto Nazionale di Alta Matematica, EATCS. Lista completa: http://www.mattiademidio.com/resume.php Membro e responsabile della commissione per la selezione di studenti internazionali per l'istituzione di appartenenza. Membro e responsabile della commissione per la selezione di assegnisti di ricerca presso l'istituzione di appartenenza. Advisor di studenti di dottorato presso varie istituzioni. Valutatore di proposte di tesi dottorali. Maggiori dettagli at: http://www.mattiademidio.com/index.php</p>
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DESCRIZIONE DEI PRINCIPALI RISULTATI CONSEGUITI NEGLI ULTIMI 10 ANNI IN TERMINI VALORIZZAZIONE DELLE CONOSCENZE (CON ANNESSO ELENCO DI MASSIMO 3 RISULTATI, RELATIVI ALLA PARTECIPAZIONE DEL CANDIDATO ALLE ATTIVITÀ DI VALORIZZAZIONE DELLE CONOSCENZE) / DESCRIPTION OF THE MAIN RESULTS ACHIEVED IN THE LAST 10 YEARS IN TERMS OF KNOWLEDGE VALORIZATION (WITH ATTACHED LIST OF MAXIMUM 3 RESULTS, RELATING TO THE CANDIDATE'S PARTICIPATION IN KNOWLEDGE VALORIZATION ACTIVITIES):

<p>Descrizione Description:</p>	<p><i>Co-Founder of TEEMA (Tools for Efficient ElectroMagnetic Analysis), spin-off of the University of L'Aquila</i></p>
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<p>Descrizione Description:</p>	<p>Co-Founder of and active contributor to TEEMA (Tools for Efficient ElectroMagnetic Analysis), spin-off of the University of L'Aquila</p>
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Informazioni aggiornate alla data di candidatura 07-05-2025

Mattia D'EMIDIO

Il presente curriculum costituisce allegato e parte integrante dell'incarico sottoscritto