

# MATTEO CARDELLINI

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## EDUCATIONAL, PROFESSIONAL AND ACADEMIC BACKGROUND

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- 2025-2028** Researcher at DIBRIS, University of Genoa.  
**2025** Appointed Scientific Coordinator of the Joint DiDiLab Laboratory between the University of Genoa and ParvaSoft S.p.a.  
**2024-2025** Postdoctoral Research Fellow at DIBRIS, University of Genoa, one-year grant titled "Artificial Intelligence for Railway Dispatching".  
**2023** Visiting Researcher from February to May 2023 at the University of Huddersfield, UK.  
**2022** Special Mention of the AIxIA Leonardo Lesmo Award for the best Italian Master's thesis in Artificial Intelligence  
**2021-2024** PhD (awarded with honors) in the National PhD in Artificial Intelligence (Administrative site: Polytechnic University of Turin, Working site: University of Genoa) with a grant titled "Planning and Scheduling Based on Artificial Intelligence Methodologies in the Railway Domain".  
**2020** Post-graduate fellowship of EUR5k titled "Induction and Deduction for Railway Traffic Planning in Small and Medium-Sized Stations", University of Genoa.  
**2019-2021** Master's Degree (110/110 with Honors and Publication Dignity) in Computer Engineering (LM-32), curriculum in Artificial Intelligence and Human-Centered Computing, University of Genoa.  
**2016-2019** Bachelor's Degree (110/110) in Computer Engineering (L-8), University of Genoa.  
**2019** High School Diploma in Scientific Studies – Liceo Scientifico Convitto C. Colombo, Genoa.

## PHD

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I obtained my PhD in the National PhD in Artificial Intelligence (Administrative site: Polytechnic University of Turin, Working site: University of Genoa) with a grant titled "Planning and Scheduling Based on Artificial Intelligence Methodologies in the Railway Domain". I was awarded the title with honors on January 9, 2025, with the thesis "Symbolic Pattern Planning".

## TEACHING ASSIGNMENTS

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- 2025** AI-Based Planning. 12h. 3CFU. PhD in Security, Risk and Vulnerability. University of Genoa.  
**2025** Artificial Intelligence for Robotics II. 20h. 5CFU. ING-INF/05. Master's Degree in Robotics Engineering (LM-32). University of Genoa.  
**2025** Artificial Intelligence. 8h. 1CFU. ING-INF/05. Master's Degree in Computer Engineering (LM-32). University of Genoa.  
**2025** Fundamentals of Computer Science. 70h. 7CFU. ING-INF/05. Bachelor's Degree in Electrical Engineering (L-9) and Chemical and Process Engineering (L-9). University of Genoa.

## TUTORING

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- 2024** Fundamentals of Computer Science. 30h. ING-INF/05. Naval Engineering.  
**2023** Fundamentals of Computer Science. 30h. ING-INF/05. Naval Engineering.  
**2022** Databases. 20h. ING-INF/05. Computer Engineering

## THESIS SUPERVISOR OR CO-SUPERVISOR

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- 2022** A. Formica. Master's Degree in Computer Engineering. "In-Station Train Dispatching via Artificial Intelligence Techniques: Optimisation, Rescheduling and Visualisation". Co-supervisor. University of Genoa.
- 2022** C. Ansaldo and N. Chiesa. Bachelor's Degree in Computer Engineering. "Artificial Intelligence Techniques for Solving the Shift Scheduling Problem". Co-supervisor. University of Genoa.

## POST-DOC RESEARCH GRANTS

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- 2024** One-year post-doc research grant titled "Artificial Intelligence for Railway Dispatching". SSD ING-INF/05 From 04/11/2024 to 03/11/2025

## PERIODS AT FOREIGN UNIVERSITIES AND RESEARCH CENTERS

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- 2023** University of Huddersfield. Visiting Researcher. From 01/02/2023 to 15/05/2023. Worked in Prof. Mauro Vallati's group at the Centre for Planning, Autonomy and Representation of Knowledge (PARK).

## PARTICIPATION IN RESEARCH PROJECTS WITH PRIVATE ENTITIES

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- 2025-2028** Scientific Coordinator of the Joint DiDiLab Laboratory between the University of Genoa and ParvaSoft S.p.a. aimed at research and training on artificial intelligence applied to integrated logistics management.
- 2024-2025** Project titled "Artificial Intelligence for Railway Dispatching" within the RaidLab, a joint laboratory between Hitachi Rail and the University of Genoa.
- 2021-2024** Project titled "Planning and Scheduling Based on Artificial Intelligence Methodologies in the Railway Domain" within the RaidLab, a joint laboratory between Hitachi Rail and the University of Genoa.
- 2019-2021** Project titled "Artificial Intelligence Techniques for the Train Dispatching Problem in Stations" within the RaidLab, a joint laboratory between Hitachi Rail and the University of Genoa.
- 2016-2019** Project titled "Induction and Deduction for Railway Traffic Planning in Small and Medium-Sized Stations" within the RaidLab, a joint laboratory between Hitachi Rail and the University of Genoa.

## PARTICIPATION IN INTERNATIONAL RESEARCH PROJECTS

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I carried out research activities within the following international projects:

- 2022-2025** EU Horizon Europe. European Lighthouse on Secure and Safe AI (ELSA)

## PARTICIPATION IN NATIONAL RESEARCH PROJECTS

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I carried out research activities within the following national projects:

- 2024-2024** Extended Partnership. Future Artificial Intelligence Research (FAIR)
- 2023-2028** Extended Partnership. SEcurity and RIghts In the CyberSpace (SERICS)

## TALKS AT INTERNATIONAL CONFERENCES

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- 2025-08-20** International Joint Conference on Artificial Intelligence (IJCAI). Montreal, Quebec, Canada.
- 2025-02-28** Association for the Advancement of Artificial Intelligence (AAAI). Philadelphia, Pennsylvania, USA.
- 2024-10-15** International Conference on Logic Programming (ICLP). Dallas, Texas, USA.
- 2024-02-24** Association for the Advancement of Artificial Intelligence (AAAI). Vancouver, British Columbia, Canada.
- 2022-08-02** Doctoral Consortium of the International Conference on Logic Programming (ICLP). Haifa, Israel.
- 2021-08-11** International Conference on Automated Planning and Reasoning (ICAPS). Virtual.

## TALKS AT NATIONAL CONFERENCES

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- 2021-09-08** Italian Conference on Computational Logic (CILC). Parma, Italy.
- 2022-10-28** Doctoral Consortium at the Conference of the Italian Association for Artificial Intelligence (AIxIA). Udine, Italy.
- 2023-11-07** Italian Workshop on Planning and Scheduling (IPS) at the Conference of the Italian Association for Artificial Intelligence (AIxIA). Rome, Italy.

## AWARDS AND RECOGNITIONS

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- 2022** Special Mention of the Leonardo Lesmo Award for the best Italian Master's thesis in Artificial Intelligence, awarded by the Italian Association for Artificial Intelligence.

## ARTICLES IN INTERNATIONAL JOURNALS

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- J3 Optimising Dynamic Traffic Distribution for Urban Networks with Answer Set Programming.** M. Cardellini, C. Dodaro, M. Maratea and M. Vallati - Theory and Practice of Logic Programming, Volume 24, Issue 4, July 2024, pp. 825-843 - Scimago: Q2 on Artificial Intelligence
- J2 Solving Rehabilitation Scheduling Problems via a Two-Phase ASP approach.** M. Cardellini, P. De Nardi, C. Dodaro, G. Galatà, A. Giardini, M. Maratea, I. Porro. Theory and Practice of Logic Programming, Volume 24, Issue 2, March 2024, pp. 344-367 - Scimago: Q2 on Artificial Intelligence
- J1 Rescheduling Rehabilitation Sessions with Answer Set Programming.** M. Cardellini, C. Dodaro, G. Galatà, A. Giardini, M. Maratea, N. Nisopoli and I. Porro. Journal of Logic and Computation, Volume 33, Issue 3, April 2023, pp. 837-863 - Scimago: Q2 on Logic

## CONTRIBUTIONS TO INTERNATIONAL CONFERENCES

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- C12 Pushing the Envelope in Numeric Pattern Planning.** Matteo Cardellini, and Enrico Giunchiglia. Proceedings of the 22nd International Conference on Principles of Knowledge Representation and Reasoning (KR). 2025 - GGS: A<sup>+</sup>, CORE: A<sup>++</sup>
- C11 Constraint-based In-Station Train Dispatching.** Andreas Schutt, Matteo Cardellini, Jip J. Dekker, Daniel Harabor, Marco Maratea, and Mauro Vallati. Proceedings of the 31st International Conference on Principles and Practice of Constraint Programming (CP). 2025 - GGS: A, CORE: A
- C10 Rolling in Classical Planning with Conditional Effects and Constraints.** M. Cardellini, and E. Giunchiglia. Proceedings of the 34th International Joint Conference on Artificial Intelligence (IJCAI). IJCAI, 2025 - GGS: A<sup>++</sup>, CORE: A<sup>++</sup>
- C9 Initial Condition Retrieving for Hybrid and Numeric Planning Problems.** M. Cardellini, M. Maratea, F. Percassi and M. Vallati. Proceedings of the 35th International Conference on Automated Planning and Scheduling (ICAPS). AAAI Press, 2025 - GGS: A, CORE: A<sup>++</sup>

- C8 **Temporal Numeric Planning with Patterns.** M. Cardellini and E. Giunchiglia. Proceedings of the 39th Annual AAAI Conference on Artificial Intelligence (AAAI). AAAI Press, 2025 - GGS: A<sup>++</sup>, CORE: A<sup>++</sup>
- C7 **Taming Discretised PDDL+ through Multiple Discretisations.** M. Cardellini, M. Maratea, F. Percassi, E. Scala and M. Vallati. Proceedings of the 34th International Conference on Automated Planning and Scheduling (ICAPS). AAAI Press, 2024 - GGS: A, CORE: A<sup>++</sup>
- C6 **Symbolic Numeric Planning With Patterns.** M. Cardellini, E. Giunchiglia and M. Maratea. Proceedings of the 38th Annual AAAI Conference on Artificial Intelligence (AAAI). AAAI Press, 2024 - GGS: A<sup>++</sup>, CORE: A<sup>++</sup>
- C5 **A Framework for Risk-Aware Routing of Connected Autonomous Vehicles via Artificial Intelligence.** M. Cardellini, C. Dodaro, M. Maratea, and M. Vallati. In Proceedings of the 26th IEEE International Conference on Intelligent Transportation Systems (ITSC). IEEE, 2023 - MA: A<sup>-</sup>
- C4 **A Two-Phase ASP Encoding for Solving Rehabilitation Scheduling.** M. Cardellini, P. De Nardi, C. Dodaro, G. Galatá, A. Giardini, M. Maratea and I. Porro. 2021. In Proceedings of the 5th International Joint Conference RuleML+RR. Springer, 2021 - CORE: B
- C3 **In-Station Train Movements Prediction: from Shallow to Deep Multi Scale Models.** G. Boleto, L. Oneto, M. Cardellini, M. Maratea, M. Vallati, R. Canepa, D. Anguita. In Proceedings of the 29th European Symposium on Artificial Neural Networks (ESANN). i6doc, 2021 - GGS: B, CORE: B
- C2 **An Efficient Hybrid Planning Framework for In-Station Train Dispatching.** M. Cardellini, M. Maratea, M. Vallati, G. Boleto, and L. Oneto. Proceedings of the 21st International Conference on Computational Science (ICCS). Springer, 2021 - GGS: B, CORE: A
- C1 **In-Station Train Dispatching: A PDDL+ Planning Approach.** M. Cardellini, M. Maratea, M. Vallati, G. Boleto, and L. Oneto. Proceedings of the 31st International Conference on Automated Planning and Scheduling. AAAI Press, 2021 - GGS: A, CORE: A<sup>++</sup>

## PHD THESIS

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T1 PhD Thesis titled "Symbolic Pattern Planning". Defended on January 9, 2025.

## MEMBER OF PROGRAM COMMITTEES

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<b>2025</b>	Reviewer. European Conference of Artificial Intelligence
<b>2025</b>	Reviewer. Journal of Applied Logic
<b>2023-2025</b>	Reviewer. International Conference on Automated Planning and Scheduling
<b>2023-2025</b>	Reviewer. International AAAI Conference on Artificial Intelligence

## CONFERENCE ORGANIZATION

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- 2024** Organizer of the "Constraint And Satisfiability-based Planning: an Exploratory Research Workshop" during the International Conference on Planning and Scheduling (CORE: A<sup>++</sup>, GGS: A) in Melbourne, Victoria, Australia, November 9–14, 2025.
- 2022** Local Organization of the International Conference on Logic Programming and Non-monotonic Reasoning. Genoa, Italy.

## SEMINARS AND INVITED TALKS

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- 2025-01-25** University of Genoa. Seminar on "Symbolic Pattern Planning".
- 2024-07-16** University of Oxford. Seminar on "Symbolic Pattern Planning".
- 2024-02-16** Bruno Kessler Foundation. Seminar on "Symbolic Pattern Planning".
- 2023-03-01** University of Huddersfield. Seminar on "An ASP Framework for Efficient Urban Traffic Optimization".

**BIBLIOMETRIC VALUES** (UPDATED SEPTEMBER 5, 2025)

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	Google Scholar	SCOPUS
Number of Articles in 5 years	20	16
Number of Citations in 10 years	120	76
H-Index in 10 years	6	5