

# MATTEO CARDELLINI

## EDUCATION

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**Italian National Ph.D. in Artificial Intelligence**

*November 2021 - October 2024*

Work Faculty: University of Genova, Italy

Administrative Faculty: Polytechnic of Torino, Italy

Supervisors: M. Maratea, E. Giunchiglia, and M. Vallati

**University of Genova, Italy**

*September 2019 - July 2021*

Master's Degree on Computer Engineering

Curriculum in Artificial Intelligence and Human-Centered Computing

Final Grade: 110/110 cum Laude and "Dignità di Stampa"

**University of Genova, Italy**

*September 2016 - September 2019*

Bachelor's degree on Computer Engineering

Final Grade: 110/110

## JOURNAL PUBLICATIONS

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– **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

– **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

## CONFERENCE PUBLICATIONS

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– **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 2024)*

– **Symbolic Numeric Planning With Patterns.** M. Cardellini, E. Giunchiglia and M. Maratea - *Proceedings of the 38th Annual AAAI Conference on Artificial Intelligence (AAAI 2024)*

– **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 (IEEE ITS 2023)*

– **An ASP Framework for Efficient Urban Traffic Optimization.** M. Cardellini. *Electronic Proceedings of the 18th Doctoral Consortium on Logic Programming (ICLP DC 2022)*, 2022

– **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, (ICAPS 2021)*

– **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. Springer, (ICCS 2021)*

– **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. i6doc, 2021*

– **A Two-Phase ASP Encoding for Solving Rehabilitation Scheduling.** M. Cardellini, P. De Nardi, C. Dodaro, G. Galatà, A. Giardini, M. Maratea and I. Porro. In *Proceedings of RuleML+RR 2021. Springer, 2021*

- **Answer Set Programming in Healthcare: Extended Overview.** M. Alviano, R. Bertolucci, M. Cardellini, C. Dodaro, G. Galatá, M. Kamran Khan, M. Maratea, M. Mochi, V. Morozan, I. Porro, and M. Schouten. In Proceedings of IPS-RCRA@AI\*IA 2020. CEUR, 2020

## THESES

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- *Master's degree.* **Artificial Intelligence Techniques for Solving the In-Station Train Dispatching Problem** - M. Cardellini - Supervisors: M. Maratea
- *Bachelor's degree.* **Visual and Data Analytics for the Analysis of Trains' Flux in a Railway Network** - G. Boleto, M. Cardellini, G. Martino - Supervisors: L. Oneto, M. Maratea

## AWARDS

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- **Award AIxIA Leonardo Lesmo 2022.** Special mention for the best Italian Master's Degree Thesis in Artificial Intelligence

## SCHOLARSHIPS AND PROJECTS

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- Post-graduate scholarship on **Induction and Deduction for Railway Traffic Planning in Small and Medium-sized Stations** - July 2020 to November 2020 - 5k EUR - DIBRIS, University of Genova

## TEACHING ACTIVITIES

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- **Artificial Intelligence.** Teaching assistant, Prof. E. Giunchiglia. ING-INF/05, University of Genova (DIBRIS) - 2024
- **Fondamenti di Informatica.** Teaching assistant. Prof. E. Giunchiglia, ING-INF/05, University of Genova (DIBRIS) - 2023
- **Intelligent Systems.** Teaching assistant. Prof. M. Maratea, INF/01, University of Calabria (DeMaCS) - 2023
- **Databases.** Teaching assistant. Prof. A. Bocalatte, Prof. M. Maratea, ING-INF/05, University of Genova (DIBRIS) - 2022
- **Advanced Artificial Intelligence.** Invited presentations on applications of Planning and Scheduling techniques for real world domains. ING-INF/05, University of Genova (DIBRIS) - 2020, 2021, 2022

## INVITED TALKS AND SEMINARS

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- **University of Huddersfield.** Seminar. *An ASP Framework for Efficient Urban Traffic Optimization.* March 1, 2023
- **Fondazione Bruno Kessler.** Seminar. *Symbolic Pattern Planning.* February 16, 2024

## EXPERIENCES ABROAD

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- **University of Huddersfield.** *Visiting Researcher - From February to Mid May 2023.* Worked in the group of Prof. Mauro Vallati at the Centre for Planning, Autonomy and Representation of Knowledge (PARK)

## SUPERVISOR ACTIVITIES

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

## EVENTS

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- **Intelligenza Artificiale '24.** *Guest Reviewer*
- **ICAPS '23, '24.** *PC Member.* International Conference on Automated Planning and Scheduling
- **AAAI '23, '24.** *PC Member.* AAAI Conference on Artificial Intelligence
- **KEPS '23, '24.** *PC Member.* Workshop on Knowledge Engineering for Planning and Scheduling
- **ECAI '23.** *PC Member.* European Conference on Artificial Intelligence
- **LPNMR '22.** *Local Organizer.* 18th International Conference on Logic Programming and Non-monotonic Reasoning

## WORK EXPERIENCE

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### **SurgiQ SRL**

April 2021 - November 2021

*Researcher*

*Genova - IT*

- Built and optimised scheduling systems based on state-of-the-art artificial intelligence's technologies for the scheduling of physiotherapy sessions for the rehabilitation of patients in hospitals.

### **Secondhand Mobile SRL**

February 2018 - April 2021

*CTO e Co-founder*

*Genova - IT*

- Built a cloud based management system accessed daily by more than 140 customers all-over Italy.
- Built and published an iOS/Android App with 65k active downloads.
- Helped the company to grow to 14 employees and a yearly revenue of 5 million euros.
- Managed 4 software engineers using an Agile methodology continuously delivering improvements to the corporate code-base.