Curriculum Vitae of Emanuele Tresoldi

PERSONAL DETAILS

Nationality	Italian
Date of birth	[redacted]
ORCID ID	https://orcid.org/0000-0003-1529-3806
Scopus Preview	https://www.scopus.com/authid/detail.uri?authorId=35847828200
Google Scholar	https://scholar.google.com/citations?user=BNfEOSIAAAAJ&hl=en

CURRENT POSITIONS

✦ From September 2021
Senior Operations Research Analyst at M.A.I.O.R. s.r.l.
M.A.I.O.R. is a leading company in the public transportation sector designing and developing software solutions for service planning, resource scheduling and company performance analysis.
Via San Donato, 512, 55100 Lucca, LU, Italy
Supervisor Dott. Samuela Carosi (samuele.carosi@maior.it)

✦ From September 2021
Research volunteer at Department of Computer Science "Giovanni Degli Antoni" – Università degli Studi di Milano, Via Celoria 18 - 20133 Milan (MI) and Via Bramante 65 - 26013 Crema (CR), Italy.
Scientific director Prof. Giovanni Righini (giovanni.righini@unimi.it)

PREVIOUS POSITIONS

✦ From September 2021
Collaborator at ICOOR Interuniversity Consortium for Optimization and Operation Research
Development of a route planner for electric vehicles within the eCharge4Drivers EU project.
Università di Modena e Reggio Emilia, Via Amendola 2, pad. Morselli, 42122 Reggio Emilia, Italy
Scientific director Prof. Federico Malucelli (federico.malucelli@polimi.it)

✦ July 2018 – July 2021
Fixed-Term Researcher type A – INF/01, (Ricercatore a Tempo Determinato Tipo A) at Department of Computer Science "Giovanni Degli Antoni" – Università degli Studi di Milano, Via Celoria 18 - 20133 Milan (MI) and Via Bramante 65 - 26013 Crema (CR), Italy.
Scientific director Prof. Giovanni Righini (giovanni.righini@unimi.it)

✦ From January 2016 to June 2018
Post-Doc Research Fellow (Assegno di Ricerca) in Operations Research at Dipartimento di Elettronica, Informazione e Bioingegneria (DEIB) – Politecnico di Milano, Via Ponzio 34/5, Milano, Italy.
Scientific director Prof. Federico Malucelli (federico.malucelli@polimi.it)

✦ From January 2014 to January 2016
Post-Doc Research Fellow (Assegno di Ricerca) "Modello matematico e algoritmo di riotimmizzazione real-time per la turnazione di mezzi e personale in una azienda di trasporto collettivo" at Dipartimento di Elettronica, Informazione e Bioingegneria (DEIB) – Politecnico di Milano, Via Ponzio 34/5, Milano, Italy.
Scientific director Prof. Federico Malucelli (federico.malucelli@polimi.it)

✦ From January 2012 to January 2014
Post-Doc Research Fellow (Assegno di Ricerca) in Operations Research at Dipartimento di Fisica - Università degli Studi di Milano in partnership with CESI/RSE(Ricerca sul Sistema Energetico), Via R. Rubattino 54, Milano.
Supervisor Dott. Alberto Gelmini (alberto.gelmini@rse-web.it).

✦ From June 2008 to December 2008
Research Fellow (Borsa Laborlab Giovani Promettenti) at Dipartimento di Tecnologie dell'Informazione (DTI) – Università degli Studi di Milano, Via Bramante 65, 26013 Crema, Italy.
Scientific director Prof. Giovanni Righini (giovanni.righini@unimi.it)

✦ From November 2007 to April 2008
Trainee/Software Developer at ESA – European Space Operation Center (ESOC), Robert-Bosch-Str. 5 64293 Darmstadt, Germany.
Supervisor Dott. Erhard Rabenau (erhard.rabenau@esa.int)

EDUCATION AND TRAINING

✦ 2009 - 2012
PhD in Computer Science - DTI - Università degli Studi di Milano.
Thesis: *"Location and Routing Problems: a Unified Approach"*.
Link: https://air.unimi.it/retrieve/handle/2434/172439/170203/phd_unimi_R08166.pdf
Supervisors: Prof. Giovanni Righini (giovanni.righini@unimi.it) and Prof. Alberto Ceselli (alberto.ceselli@unimi.it).

✦ 2004 - 2007
Master Degree in Computer Science - DTI - Università degli Studi di Milano.
Thesis: *"Optimization algorithms for data transmission planning and scheduling problems in ESA's Mars express space mission"*.
Supervisor: Prof. Giovanni Righini (giovanni.righini@unimi.it)

✦ 2000 - 2004
Bachelor Degree in Computer Science - DTI - Università degli Studi di Milano.
Thesis: *"Confronto sperimentale tra diversi intorni in un algoritmo di ricerca tabu per il problema del commesso viaggiatore con operazioni miste di consegna e raccolta"*.
Supervisor: Prof. Giovanni Righini (giovanni.righini@unimi.it)

Training periods at foreign research centers and universities

✦ January 2010 - June 2010
Visiting student at the Lab. Informatique Paris Nord, UMR CNRS 7030, Université Paris XIII, Paris, France.
Supervisors: Prof. Roberto Wolfler Calvo (wolfler@lipn.univ-paris13.fr).

Summer schools and post-graduate specialization courses

✦ Pisa 2009
Ph.D. Course on "Column generation and related topics for hard combinatorial problems". Lectures given by J.M. Valério de Carvalho (Universidade do Minho)
✦ Bologna 2009
Ph.D. Course on "Semidefinite and Conic Programming".

- Paris 2010
  Ph.D. School on "Advanced Techniques for Mixed Integer Programming".
- Bertinoro 2010
  Ph.D. Summer School on "Integer Programming and Combinatorial Optimization".
- Sevilla 2011
  Workshop on "Mixed Integer Programming".
- Bologna 2014
  Ph.D. School on "Constraint Programming".

RESEARCH ACTIVITY

Area of interest

The main focus of my research activity is on models, exact and heuristic algorithms for combinatorial optimization problems and their applications, in particular:

- Public transportation systems (Vehicle Scheduling, Crew Scheduling, Crew Rostering).
- Routing problems (e.g. Traveling Salesman Problem, Vehicle Routing Problem, Orienteering Problem, School Bus Routing Problem).
- Network design problems (e.g. Bicycle network design, Walking-bus problem).
- Scheduling problems (e.g. Parallel Machine Scheduling, Vehicle Scheduling, Crew Scheduling, Production Planning, Scheduling with Conflicts, Timetabling Problems).
- On-line and Off-line management of public transport networks (e.g. Real-Time Delay and Disruption Management).

Recently I became interested in the use of machine learning techniques to speed up combinatorial optimization algorithms, in particular:

- Column classification and selection for column generation algorithms.
- Optimal parameters setting for metaheuristic algorithms.

Participation in financed research projects

- PRIN 2008 – "Analysis of mathematical models for deterministic and stochastic optimization"

  Financing entity: Ministero dell'Istruzione dell'Università e della Ricerca (MIUR).
  Scientific coordinator: Prof. Giovanni Righini (giovanni.righini@unimi.it, UNIMI).
  Project team: "Operational Research Group" - DTI, Università degli Studi di Milano.
  Link:
  http://prin2008.miur.it/suddivisionefondi/pdf_vis_modello.php?db=MIUR9&modello=A&PREF_X_TABELLE=SFCOF08&c=20&codice=5476354378022SBBH14241784735693898381 4&chiave=ASDSDADSADSADSA

- Project title: "UPPO/NUP, new algorithms for the day-ahead energy market" (2012 – 2013).

  Financing entity: GME - Gestore dei Mercati Energetici.
  Scientific coordinator: Dott. Alberto Gelmini (alberto.gelmini@rse-web.it, RSE).
  RSE team: Dott. Alberto Gelmini, Dott. Dario Siface, Dott. Emanuele Tresoldi.

  Collaboration between RSE (Ricerca sul Sistema Energetico) and GME (Gestore del Mercato Energetico, company wholly owned by the Ministry of Economy and Finance managing the energy market in Italy) to develop of Day-Ahead Electricity Market Models for the Market Coupling between Central Southern, Central Western and Northern Europe.

- Project title: "SINTESI, Sistema di gestione ed ottimizzazione real-time del trasporto pubblico" (2014 – 2015).
  Financing entity: Regione Toscana – Bando Unico R&S 2012.
  Partners: MAIOR, Università degli Studi di Pisa, Politecnico di Milano.

Scientific board: Prof. Federico Malucelli (federico.malucelli@polimi.it POLIMI). Prof Antonio Frangioni (UNIPI), Dott. Samuela Carosi (MAIOR).
POLIMI team: Prof. Federico Malucelli, Dott. Stefano Gualandi, Dott. Emanuele Tresoldi.

Development of tabu search algorithms for real time delay and disruption management in public transport systems.

Link: https://www.ttsitalia.it/newsletter/SINTESI_TTS.pdf

+ Project title: "DMA, disruption management algorithms for public transport" (2015 - 2017).

Financing entity: Azienda Trasporti Milanesi (ATM)
Partners: ATM, MAIOR, Politecnico di Milano
Scientific board: Prof. Federico Malucelli (federico.malucelli@polimi.it, POLIMI). Dott. Samuela Carosi (MAIOR).
POLIMI team: Prof. Federico Malucelli, Dott. Emanuele Tresoldi.

Development of column generation based math-heuristic algorithms for real time delay and disruption management in public transport systems.

Link: https://www.maior.it/it/referenze
http://www.optimization-online.org/DB_HTML/2018/10/6856.html

+ Project title: "POLI.S, Programma nazionale sperimentale di mobilità sostenibile casa-scuola e casa-lavoro" (2018).

Financing entity: Agenzia regionale per la prevenzione, l'ambiente e l'energia dell'Emilia-Romagna e Comune di Ferrara
Partners: Comune di Ferrara, Università degli Studi di Ferrara, Politecnico di Milano, Azienda Ospedaliera Universitaria di Ferrara, Istituto Comprensivo Statale "Dante Alighieri", ARPAE Sezione Provinciale di Ferrara, FERRARA TUA Srl, AMI Ferrara sr.
Scientific board: Prof. Federico Malucelli (federico.malucelli@polimi.it, POLIMI). Prof Maddalena Nonato (UNIFE maddalena.nonato@unife.it).
POLIMI team: Prof. Federico Malucelli, Dott. Emanuele Tresoldi.

Development of branch and cut algorithms and column generation math-heuristic algorithms for the walking bus problem.

Link: https://arpae.it/epraxi/1/PDTD/2019/0000102/20190214115042025762183492_2.PDF

+ Project title: "Sviluppo ed analisi sperimentale di modelli per la previsione del consumo di gas naturale dei clienti, al fine di pianificare in modo ottimale l'approvvigionamento della commodity" (2018).

Financing entity: ENERCOM Srl.
Partners: ENERCOM, Università degli Studi di Milano.
Scientific board: Prof. Alberto Ceselli (alberto.ceselli@unimi.it UNIMI), Dott. Gabriele Severgnini (ENERCOM)
UNIMI team: Prof. Alberto Ceselli, Dott. Emanuele Tresoldi, Dott. Marco Premoli.

Development of predictive models based on machine learning techniques for the forecast of natural gas demand.

Link: https://www.enercomlucegas.it/magazine/ricerca-innovazione-collaborazione-con-unimi/

+ Project title: "Longevity Health, sviluppo di modelli e metodi computazionali di analisi predittiva e prescrittiva dei dati per la valutazione e il contenimento del rischio individuale di malattie future" (2019 - 2021).

Financing entity: SoLongevity
Partners: SoLongevity, Università degli Studi di Milano.
Scientific board: Prof. Alberto Ceselli (alberto.ceselli@unimi.it UNIMI).
Project team: UNIMI team: Prof. Alberto Ceselli, Dott. Emanuele Tresoldi.

Development of predictive models based on machine learning techniques.

Link: https://www.solongevity.com/en/

+ Project title: "COD-19, sviluppo di sistemi di supporto alle decisioni per la gestione di situazioni di emergenza sanitaria" (2020)

Financing entity: Regione Lombardia
Partners: Ospedale Sacco, Università degli Studi di Milano, LinkUP and ACTOR/Spindox.
Scientific board: Prof. Giovanni Righini (giovanni.righini@unimi.it, UNIMI), Prof. Gian Vincenzo Zuccotti (UNIMI/Ospedale Sacco), Dott. Raffaele Maccioni (ACTOR).
Project team: members of the OptLab research lab, headed by Prof. Giovanni Righini - Dipartimento di Informatica ``Giovanni Degli Antoni", Università degli Studi di Milano (website: http://www.di.unimi.it/ecm/home/ricerca/laboratori/optlab-laboratorio-di-ricerca-operativa)

Development of mathematical models.

Link: https://www.openinnovation.regione.lombardia.it/it/b/572/da-sacco-e-unimi-il-progetto-centro-operativo-dimessi-covid-i-risultat

+ Project title: "Advanced Cosmetic Manufacturing (AD-COM)" (2014 – 2021)

Financing entity: Regione Lombardia (co-financed with POR FESR 2014-2020 funds)
Partners: REI – Reindustria Innovazione (Project Coordinator), Ancorotti Cosmetics, Lumson, Omnicos Group, Regi, Eurofins Biolab, Università degli Studi di Milano, Politecnico di Milano.
Scientific board: Prof. Giovanni Righini (giovanni.righini@unimi.it, UNIMI), Prof Alberto Leva (POLIMI), Prof Luca Fumagalli (POLIMI).
Project team: members of the OptLab research lab, headed by Prof. Giovanni Righini - Dipartimento di Informatica ``Giovanni Degli Antoni", Università degli Studi di Milano (website: http://www.di.unimi.it/ecm/home/ricerca/laboratori/optlab-laboratorio-di-ricerca-operativa)

Development of mathematical models and column generations based algorithms for Parallel Machine Scheduling with Conflicts problems.

Link: https://ad-com.net/

+ Project title: "eCharge4Drivers" (2021 – 2022)

Financing entity: co-funded by the EU under the H2020 Research and Innovation Programme (grant agreement No 875131)
Partners: see website.
Scientific board: Prof. Federico Malucelli (federico.malucelli@polimi.it, POLIMI), Prof. Ola Jabali (ola.jabali@polimi.it, POLIMI), Prof. Mauro Dell'Amico (dellamico@icoor.it).

Participation in the project as ICOOR collaborator to develop a route planner for electric vehicles.

Link: https://echarge4drivers.eu/
Link: https://planner.evway.net/

Scientific collaborations

During my research activity I have set up scientific collaborations with, among others:

- professor Giovanni Righini – Department of Computer Science "Giovanni Degli Antoni", Università degli Studi di Milano, Milano, Italy;
- professor Alberto Ceselli – Department of Computer Science "Giovanni Degli Antoni", Università degli Studi di Milano, Milano, Italy;
- professor Maddalena Nonato - Dipartimento di Ingegneria, Università degli Studi di Ferrara.
- professor Roberto Wolfler Calvo – LIPN:AOC – Université Paris 13 Nord, Paris, France;
- professor Juan José Salazar González - Departamento de Matemáticas, Estadística e Investigación Operativa Sección de Matemáticas - Facultad de Ciencias - Universidad de La Laguna, Tenerife, Spain;
- professor Federico Malucelli - Dipartimento di Elettronica, Informazione e Bioingegneria, Politecnico di Milano, Milano , Italy ;
- professor Valentina Cacchiani - Dipartimento di Ingegneria dell'Energia Elettrica e dell'Informazione "Guglielmo Marconi", Università di Bologna.
- Dott. Samuela Carosi - Operations Research Team Manager, MAIOR, Lucca, Italy.

Prizes and awards

1. Premio di Laurea Specialistica AIRO 2008: in 2008 my master's degree thesis "Optimization Algorithms for data transmission planning and scheduling problems in ESA's Mars Express space mission" has been rewarded by Associazione Italiana Ricerca Operativa as best Italian master's degree thesis in Operational Research.
2. In 2009, Ph.D. grant at Università degli Studi di Milano.
3. AIRO Best Application-Oriented Paper 2016: in 2016 I have received the Best application-oriented paper award by Associazione Italiana di Ricerca operative for the "disruption management algorithms for public transport project". Collaboration with ATM (Azienda Trasporti Milanesi) and MAIOR.
4. Second place in the MINO Challenge 2016: "The Total Waste Water Network Design and Operation Problem". The competition was organized by ORTEC, the Mixed Integer Nonlinear Optimization initial training network (MINO), and Royal Dutch Shell.
5. First prize in the MINOA 2020 Challenge: solving the (non-periodic) Integrated Time-Table and Vehicle Scheduling Problem. Competition organized by MAIOR and MINOA Consortium. https://minoa-itn.fau.de/?p=1614

Scientific publications

I - Referred international journals

1. Giovanni Righini, Emanuele Tresoldi, "A mathematical programming solution to the Mars Express memory dumping problem". IEEE Transactions on Systems, Man, and Cybernetics—Part C: Applications and Reviews, May 2010, Volume 40, Issue 3, pg. 268-277. DOI: https://doi.org/10.1109/TSMCC.2009.2034838.
2. Giovanni Righini, Emanuele Tresoldi, Nicola Policella, Alessandro Donati, Erhard Rabenau. "An automatic planning and scheduling system for the Mars Express uplink scheduling problem". IEEE Transactions on Systems, Man, and Cybernetics—Part C: Applications and Reviews, November 2011, Volume 41, Issue 6, pg. 942-954. DOI: https://doi.org/10.1109/TSMCC.2011.2114880.
3. Alberto Ceselli, Giovanni Righini, Emanuele Tresoldi, "Modeling and solving profitable location and distribution problems". Optimization Letters, October 2013, Volume 7, Issue 7, pp 1471-1480. DOI: https://doi.org/10.1007/s11590-012-0550-0.
4. Alberto Ceselli, Giovanni Righini, Emanuele Tresoldi, "Combined Location and Routing Problems for Drug Distribution". Discrete Applied Mathematics, March 2014, Volume 165, Pages 130–145. DOI: https://doi.org/10.1016/j.dam.2013.07.016.
5. Alberto Ceselli, Giovanni Righini, Emanuele Tresoldi, "Vehicle Routing Problems with Different Service Constraints: a Branch-and-Cut-and-Price Algorithm", Networks, Volume 64, Issue 4, pages 282–291, December 2014. DOI: https://doi.org/10.1002/net.21584.

6. Emanuele Tresoldi, Federico Malucelli, Stefano Gualandi and Samuela Carosi, "Delay Management in Public Transportation: Service Regularity Issues and Crew Re-scheduling", Transportation Research Procedia, Volume 10, 2015, Pages 483–492, September 2015. DOI: https://doi.org/10.1016/j.trpro.2015.09.002.
7. Federico Malucelli, Maddalena Nonato, Emanuele Tresoldi, "Optimization based planning of Pedibus lines: an arc based approach", Transportation Research Procedia, Volume 27, 2017, Pages 760-767, ISSN 2352-1465, https://doi.org/10.1016/j.trpro.2017.12.049.
8. Federico Malucelli, Maddalena Nonato, Emanuele Tresoldi, "Designing Pedibus Lines: a Path Based Approach". Electronic Notes in Discrete Mathematics, Volume 69, 2018, Pages 149-156, August 2018. DOI: https://doi.org/10.1016/j.endm.2018.07.020.
9. Federico Malucelli, Emanuele Tresoldi, "Delay and disruption management in local public transportation via real-time vehicle and crew re-scheduling: a case study", Public Transport, February 2019. DOI: https://doi.org/10.1007/s12469-019-00196-y.
10. Emanuele Tresoldi, Alberto Ceselli. "Rolling-Horizon Heuristics for Capacitated Stochastic Inventory Problems with Forecast Updates". In: Paolucci M., Sciomachen A., Uberti P. (eds) Advances in Optimization and Decision Science for Society, Services and Enterprises. AIRO Springer Series, vol 3, January 2020. Springer, Cham. DOI: https://doi.org/10.1007/978-3-030-34960-8_13.
11. Emanuele Tresoldi, Federico Malucelli, Maddalena Nonato, "A personalized walking bus service requiring optimized route decisions: A real case", European Journal of Operational Research, Volume 289, Issue 3, March 2021, Pages 855-866. DOI: https://doi.org/10.1016/j.ejor.2019.07.046.
12. Emanuele Tresoldi, "Solution Approaches for the Capacitated Scheduling Problem with Conflict Jobs", In: Ceruli, R., Dell'Amico, M., Guerriero, F., Pacciarelli, D., Sforza, A. (eds) Optimization and Decision Science. AIRO Springer Series, vol 7. Springer, Cham. https://doi.org/10.1007/978-3-030-86841-3_11
13. Nicola Bianchessi, Emanuele Tresoldi. "A stand-alone branch-and-price algorithm for parallel machine scheduling with conflicts", Computers & Operations Research, Volume 136, December 2021. https://doi.org/10.1016/j.cor.2021.105464

III- Technical reports and thesis

1. Federico Malucelli, Emanuele Tresoldi, "Delay and disruption management at ATM: technical details", Optimization Online 2018, http://www.optimization-online.org/DB_HTML/2018/10/6856.html.
2. Emanuele Tresoldi, "Location and Routing Problems: a Unified Approach", Ph.D. Thesis in Computer Science, DTI, Università degli Studi di Milano, Italy, 2012
   Link: https://air.unimi.it/retrieve/handle/2434/172439/170203/phd_unimi_R08166.pdf .

IV – Other publications

1. A. Ceselli, G. Righini, E. Tresoldi. "Combined Location and Routing Problems for Drug Distribution in Case of Emergency". Proceedings of 10-th Cologne-Twente Workshop (CTW), Villa Mondragone, Frascati, June 14-16, 2011. http://ctw2011.dia.uniroma3.it/ctw_proceedings.pdf
2. Alberto Ceselli, Giovanni Righini, Emanuele Tresoldi, "Optimal Routing Of Planetary Surface Exploration Vehicles". ESA's Acta Futura, January 2012, Issue 5, pg 17-27. DOI: https://dx.doi.org/10.2420/ACT-BOK-AF03.

V – Conference proceedings

1. "Location and Routing Problems for Drug Distribution" A. Ceselli, G. Righini, E. Tresoldi. At TRISTAN VII, Rica Ishavshotel, Tromsø, Norway, June 20-25 2010.
2. "Exact and Heuristic algorithms for the multi-color TSP" S. Borne, E. Tresoldi, R. Wolfler Calvo, G. Laporte, F. Semet. At AIRO2010, Villa San Giovanni, Italy. September 7-10 2010.
3. "Combined Location and Routing Problems for Drug Distribution in Case of Emergency". A. Ceselli, G. Righini, E. Tresoldi. 10-th Cologne-Twente Workshop (CTW), Villa Mondragone, Frascati, June 14-16, 2011

4. "Le problème du voyageur de commerce multicolore". S. Borne, E. Tresoldi, R. Wolfler Calvo, G. Laporte, F. Semet. 12ème congrès de la Société Française de Recherche Opérationnelle et d'Aide à la Décision (ROADEF2011), Mars 2011, Saint-Etienne, France.
5. "A Branch-And-Price Algorithm for optimal routing of explorer vehicles". A. Ceselli, G. Righini, E. Tresoldi. International Joint Conference on Artificial Intelligence (IJCAI), Barcelona, Spain. July 16-22 2011.
6. "Location and Routing Problems: A Unified Approach". A. Ceselli, G. Righini, E. Tresoldi. AIRO2011, Brescia, Italy. September 6-9, 2011.
7. "Location and Routing Problems: A Unified Approach". A. Ceselli, G. Righini, E. Tresoldi. CG2k12, Bromont, Québec, Canada. June 10 - 13, 2012
8. "Location and Routing Problems: A Unified Approach". A. Ceselli, G. Righini, E. Tresoldi. AIRO2012, Vietri sul Mare (SA), Italy. September 4-7, 2012.
9. "A Branch and Price and Cut approach to the Multi-Depot Vehicle Routing Problem with Private fleet and Common carriers." A. Ceselli, G. Righini, E. Tresoldi, D. Vigo. EURO/INFORMS 2013, Roma, Italy. July 1-4, 2013.
10. "Disruption Management in Local Public Transport: Service Regularity Issues" S. Gualandi, F. Malucelli, E. Tresoldi. AIRO 2014, September 2-5, 2014.
11. "A two-step Day-Ahead Electricity Market Model for the Market Coupling between Central Southern, Central Western and Northern Europe", D. Siface, E. Maltempi, E. Tresoldi, A. Gelmini. IFORS 14, Barcelona, Spain.
12. "Disruption Management in Local Public Transport: Service Regularity Issues", E. Tresoldi, F. Malucelli, S. Gualandi and S. Carosi, 2015 TSL Workshop, 6-8 July 2015.
13. "Delay Management in Public Transportation: Service Regularity Issues and Crew Re-scheduling", E. Tresoldi, F. Malucelli, S. Gualandi and S. Carosi, EWGT 2015, 14-16 July 2015.
14. "Real-time Delay Management in Local Public Transportation via Vehicle and Crew Re-scheduling: a Case Study" E. Tresoldi, F. Malucelli and S. Carosi. AIRO 2016, 6-9 September 2016.
15. "Optimization based planning of PEDIBUS lines: an arc based approach", F. Malucelli, M. Nonato, E. Tresoldi. EWGT 2017, 4-6 September 2017.
16. "Recovery from disruption in a subway network", E. Tresoldi, F. Malucelli, V. De Maria. ODS 2017, 4-7 September 2017.
17. "Designing Pedibus Lines: a Path Based Approach", E. Tresoldi, F. Malucelli, M. Nonato. EURO/ALIO 2018, 25-26 June 2018.
18. "A primal stabilization approach for column generation applied to vehicle scheduling problems", B. Pratelli, S. Carosi, A. Frangioni, L. Galli, L. Girardi, E. Tresoldi. ODS 2018, 10-13 September 2018
19. "Rolling-Horizon Heuristics for Capacitated Stochastic Inventory Problems with Forecast Updates", E. Tresoldi, A. Ceselli. ODS 2019, 4-7 September 2019.
20. "The Multi-color Traveling Salesman Problem", E. Tresoldi, J.J. Salazar González and R. Wolfler Calvo. 18th Cologne-Twente Workshop on Graphs and Combinatorial Optimization, 14-16 September 2020
21. "Solution approaches for the Capacitated Scheduling Problem with Conflict Jobs", E. Tresoldi, ECCO2021, Madrid (Online), 10-11 June 2021.

Referee activity

Served as referee for the following international journals:

1. Omega.
2. Public transport.
3. Transportation Research Part B: Methodological.
4. Transportation Research Part E: Logistics and Transportation Review.

TEACHING ACTIVITY

Academic teaching activity

- From a.y. 2008/2009 to a.y. 2017/2018: tutor of the course "Algorithms and Data Structures", B.Sc. in Security in Informatics Systems and Networks (SSRI) – on-line edition – Facoltà di Scienze MM.FF.NN. (Faculty of Mathematical, Physical and Natural Sciences), Università degli Studi di Milano (150 hours per a.y.).
- From a.y. 2014/2015 to a.y. 2017/2018: exercise sessions of the course "Foundations of Operations Research" (English course), Dipartimento di Elettronica, Informazione e Bioingegneria (DEIB) – Politecnico di Milano (12 hours per a.y.).
- From a.y. 2014/2015 to a.y. 2017/2018: exercise sessions of the course "Fondamenti di ricerca Operativa" Dipartimento di Elettronica, Informazione e Bioingegneria (DEIB) – Politecnico di Milano (12 hours per a.y.).
- From a.y. 2014/2015 to a.y. 2017/2018: exercise sessions of the course "Foundations of Operations Research" (English course), Dipartimento di Elettronica, Informazione e Bioingegneria (DEIB) – Politecnico di Milano (12 hours per a.y.).
- From a.y. 2014/2015 to a.y. 2017/2018: laboratory sessions of the course "Fondamenti di ricerca Operativa" Dipartimento di Elettronica, Informazione e Bioingegneria (DEIB) – Politecnico di Milano (10 hours per a.y.).
- From a.y. 2015/2016 to a.y. 2016/2017: laboratory sessions of the course "Graph Optimization" (English course), Dipartimento di Elettronica, Informazione e Bioingegneria (DEIB) – Politecnico di Milano (10 hours per a.y.).
- From. a.y. 2018/2019: "Computer Programming – Laboratory", B.Sc. in Security in Informatics Systems and Networks – Department of Computer Science "Giovanni Degli Antoni" – Università degli Studi di Milano (48 hours per a.y).

Tutoring activity

+ Co-Supervisor for master's degree Thesis in computer science engineering: Valerio De Maria "Recovery from disruption in a subway network : a case study" 2016, https://www.politesi.polimi.it/handle/10589/132470

+ Co-Supervisor for master's degree thesis,in Mathematics: Elena Zucchetti "Modelli per la previsione a breve termine del consumo di gas naturale" 2019.

+ Co-Supervisor for master's degree thesis in Mathematics: Chiara Cavagnoli "Modelli e metodi per l'ottimizzazione di acquisti e forniture di gas naturale" 2019.

+ Co-Supervisor for master's degree Thesis in Computer Science: Sepideh Sheikholeslami "A computational comparison of classical and ensemble models for predicting diabetes" 2021.

Technical and Computer skills:

- Optimization Tools and Solvers: SCIP, CPLEX, GUROBI, GLPK, CBC, LP_SOLVE, DICOPT, CONOPT, IPOPT.
- Modeling system for mathematical programming problems: AMPL, GAMS, COMET.
- Programming Languages: C/C++/C#, Python, R and Java.

Quanto dichiarato nel presente curriculum vitae corrisponde al vero ai sensi degli artt. 46 e 47 del D.P.R. 445/2000

Milan, 26th of April 2022

Emanuele Tresoldi