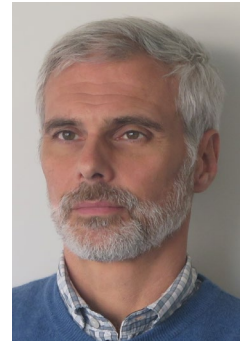


Prof. Dr. Andrea Emilio Rizzoli

- Professor SUPSI, Ticino
- 25 years in research, CSIRO Australia, Politecnico di Milano, IDSIA SUPSI
- Co-founder of AntOptima SA, a small software company devoted to optimisation for logistic problems
- PhD at Politecnico di Milano (I)



“Simulation is the crystal ball of the smart manager”

Teaching activities

Master of Science in Engineering (MSE): Modelling, Simulation and Optimisation

Bachelor of Engineering at SUPSI: introduction to computer science, discrete dynamic systems

Research area and research questions

How can the digitalisation offer new opportunities for the optimisation of logistic processes

Study and development of new algorithms for the solution of combinatorially complex logistic problems

Artificial Intelligence (AI) and Machine Learning (ML) techniques to predict demand trends

Fields of competences

Supply Chain optimisation: application of metaheuristics to logistics

Vehicle routing: development and design of algorithms to solve variants of the vehicle routing problem

People and goods logistics: how to optimally manage logistic flows

Simulation and optimisation: use of simulation models of different granularity and accuracy in a loop for testing and validation of optimal management policies

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**Scuola Universitaria
Professionale della
Svizzera Italiana**

Istituto Dalle Molle
di studi sull'Intelligenza
Artificiale
Via Cantonale 2/c
6928 Manno

Resources of Institute

Students: 19

Scientific employees: 25

Professors: 8

Selected Projects

- SocialCar. Integration of carpooling into existing mobility systems; by means of powerful planning algorithms and big data integration from public transport, carpooling systems, and crowdsourcing. EU H2020 2015–2018
- EcoLogTex. Life Cycle Assessment (LCA) is considered in each step of the supply chain in order to add the environmental perspective when designing an efficient supply chain. KTI 2011–2013
- WhatIF: a decision support system for planning and management of rail freight networks. KTI 2010–2012
- MOSCA: Decision Support System For Integrated Door-To-Door Delivery: Planning and Control in Logistic Chains. EU FP5 2001–2003
- DYVO: Dynamic vehicles routing and dispatching by using optimisation, forecasting and simulation. KTI 2001–2002
- PLATFORM: Computer-controlled freight platforms for a time-tabled rail transport system. EU FP5 1998–2000
- LSCT: An optimization methodology for intermodal terminal management. KTI 1996–1998

Selected Publications

- J. Jamal, R. Montemanni, D. Huber, M. Derboni, and A. E. Rizzoli, “A Multi-Modal and Multi-Objective Journey Planner for Integrating Carpooling and Public Transport,” *J. Traffic Logist. Eng.*, vol. 5, no. 2, pp. 68–72, 2017
- A. E. Rizzoli, R. Montemanni, A. Bettoni, and L. Canetta, “Software Support for Sustainable Supply Chain Configuration and Management,” in *ICT Innovations for Sustainability. Advances in Intelligent Systems and Computing*, no. August, L. Hilty and B. Aebischer, Eds. Springer, 2014, pp. 1–13
- A. E. Rizzoli, H. Zeller, M. Faist, R. Montemanni, M. Gioacchini, and N. Nembrini, “EcoLogTex: a software tool supporting the design of sustainable supply chains for textiles,” in *ICT4S 2013. Proceedings of the First International Conference on Information and Communication Technologies for Sustainability*, 2013, pp. 147–151
- A. E. Rizzoli, R. Montemanni, E. Lucibello, and L. M. Gambardella, “Ant colony optimization for real-world vehicle routing problems,” *Swarm Intell.*, vol. 1, pp. 135–151, 2007
- L. M. Gambardella, A. E. Rizzoli, and M. Zaffalon, “Simulation and planning of an intermodal container terminal,” *Simulation*, vol. 71, pp. 107–116, 1998