



PERSONAL DETAILS

<i>Nationality</i>	Italian
<i>Address</i>	Pod Vodarenskou Vezi 4, 18208, Prague, Czech Republic
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<i>Orcid</i>	0000-0003-0171-2504
<i>Profile ID</i>	WOS: T-3847-2019; Scopus: 57191625394
<i>h-index</i>	10 GS, 7 Scopus, 5 WoS
<i>Languages</i>	Italian (mother tongue), English (fluent), Spanish (fluent), Czech (basic)

CURRENT POSITIONS

Postdoctoral Researcher at the Institute of Information Theory and Automation (Czech Academy of Sciences); Research Fellow at the Faculty of Management (Prague University of Economics and Business). Subject expert at the University of Palermo, habilitated as an Associate Professor (ASN MIUR, Italy) and as an Assistant Professor (ANECA, Spain).

EDUCATION

PhD in Mathematics

2016-2019

Universitat Politècnica de València, Valencia, Spain

PhD in Mathematics with honors and international mention of merit. Doctoral thesis titled “Multi-criteria decision methods to support the maintenance management of complex systems” developed at the Institute for Multidisciplinary Mathematics under an international agreement of co-tutelle between two universities to achieve a double PhD degree. Mobility grant awarded for PhD thesis in co-tutelle by the Polytechnic University of Valencia through public contest.

PhD in Technological Innovation Engineering

2015-2019

Università degli Studi di Palermo, Palermo, Italy

PhD in Technological Innovation Engineering with maximum qualification and title of *Doctor Europaeus*. Developing the above-mentioned thesis in co-tutelle within the XXXI Cycle of Doctorate at the Engineering Department. PhD grant awarded for the whole duration of the doctorate by the Università degli Studi di Palermo through public contest.

Master Degree in Management Engineering

2010-2013

Università degli Studi di Palermo, Palermo, Italy

Master Degree in Management Engineering with honors. Experimental thesis titled “Organisational risk at the airport: comparing three evaluation methods”.

Bachelor Degree in Management Engineering

2006-2010

Università degli Studi di Palermo, Palermo, Italy

Bachelor Degree in Management Engineering. Experimental thesis titled “Maritime container transport: the case of the Trapani Hub”.

High School Diploma

2001-2006

Liceo Classico Leonardo Ximenes, Trapani, Italy

Diploma in Classical High School specializing in languages and scientific subjects.

RESEARCH EXPERIENCE

Postdoctoral Researcher

2020-present

Czech Academy of Sciences, Prague, Czech Republic

Developing scientific research at the Department of Decision-Making Theory at the Institute of Information Theory and Automation (UTIA) of the Czech Academy of Sciences. Fields of research: decision support systems, treatment of data uncertainty, multi-criteria decision-making methods, industrial process modelling and optimisation. Experience gained in independently applying as a principal investigator for project grants funded on the basis of competitive calls.

Research Fellow

2020-present

Prague University of Economics and Business, Jindřichův Hradec, Czech Republic

Leading research activities within the project titled “Managerial Decisions: Rationality of Paradoxical Behaviour” (GAČR project no. 19-06569S). Independently developing the theory of non-transitive preference relations at the Faculty of Management of the Prague University of Economics and Business (Vysoká Škola Ekonomická v Praze). Fields of research: manufacturing systems, service systems, risk analysis, supply chain risk management, complexity.

Research Fellow

2020

Università degli Studi di Palermo, Palermo, Italy

Grant awarded through public contest for leading research activities on the topic “Experiments and metrics definition for validating an IT platform for cultural heritage” within the project titled “Data processing innovation in the Cultural Heritage sector” (acronym IDEHA, CUP B66C18000330005). The project was aimed at creating an open IT platform for Cultural Heritage through the use of new learning technologies and studies on software quality.

Research Engineer

2019-2020

University of Sheffield, Sheffield, United Kingdom

Developing the research project titled “Evaluation of microbial risks assessment methods for drinking water distributions systems” at the Civil Structural Engineering Department within the UPV ERASMUS+ postdoctoral traineeship program (grant awarded). Elaborating innovative multi-criteria decision-making frameworks to deal with huge microbial datasets. Providing water utilities with efficient and innovative solutions for systems management.

Visiting Researcher

2019

Universidade Federal de Minas Gerais, Belo Horizonte, Brazil

Leading scientific research and educational activities at the Departamento de Engenharia Hidráulica e Recursos Hídricos (EHR). Focusing on water networks optimisation by means of optimal sensors placement. Developing decision support systems for planning/implementing preventive maintenance and continuously improving networks service.

Research Engineer

2017

University of Bath, Bath, United Kingdom

Leading the research project titled “Predicting the time evolution of the population of the UK using genetic algorithms” in collaboration with the Centre for Energy and the Design of Environment (EDeN) within the UPV ERASMUS+ doctoral traineeship program (grant awarded). Parallel computing and mathematical test functions development.

Research Engineer

2016

Universitat Politècnica de València, Valencia, Spain

Developing the project titled “Multicriteria decision making in dynamic contexts” at the Instituto Universitario de Matemática Multidisciplinar (IMM) within the UNIPA ERASMUS+ doctoral traineeship program (grant awarded). Consistency improvement in industrial decision making scenarios affected by uncertainty. Official admission as a member of the FluIng international research group and initialisation of the process of doctoral thesis in co-tutelle.

Research Fellow

2014-2015

Università degli Studi di Palermo, Palermo, Italy

Two different grants awarded through public contest for leading two stages of the project titled “Mechanical sweeper on a truck with intelligent remote diagnostics” (CUP G83F12000130004). The project was aimed at launching a novel street-cleaning vehicle endowed with an intelligent monitoring system to optimise maintenance operations. Developing reliability analyses of complex systems, failure risk assessment and predictive maintenance management.

An overview on scientific projects

2014-present

Details about my contribution to the projects herein mentioned are included in the attachment “Scientific projects”.

TEACHING EXPERIENCE AND QUALIFICATIONS

Habilitated as an Associate Professor by ASN MIUR

2022-2031

Abilitazione Scientifica Nazionale MIUR

National scientific qualification as associate in the Italian higher education system for the field 09/B2, industrial mechanical systems engineering, academic recruitment field: manufacturing, industrial and management engineering.

Habilitated as an Assistant Professor by ANECA

2020-present

Agencia Nacional de Evaluación de la Calidad y Acreditación

National scientific qualification as assistant in the Spanish higher education system for the disciplinary field of Technical Education through positive evaluation and formal certification of educational and research activities ID:2020-749.

Subject Expert

2019-present

Università degli Studi di Palermo, Palermo, Italy

Qualification required by the Italian higher education system to autonomously teach the subject "Production and Plants Management" (15 credits) of the bachelor degree course in "Innovation Engineering for Digital Enterprises", Engineering Department. Occasional online teaching and contributing to exam sessions as a member of commission.

Teaching Assistant

2015-2019

Università degli Studi di Palermo, Palermo, Italy

Integrating educational activities for the subject "Production and Plants management" through two modules: production management (7 credits) and plant management (8 credits). Lecturing dynamic classes both in English and Italian, personally attending to students, preparing educational materials, supervising works of thesis and exams.

Teaching Assistant

2016-2017

Universitat Politècnica de València, Valencia, Spain

Integrating educational activities for the subject "Mathematics II" of the double bachelor degree course in "Business Administration and Management + Telecommunication Technologies and Services Engineering". Lecturing occasional seminars for Bachelor degree and PhD students both in English and Spanish and developing educational articles.

Teacher trainer for companies

2012-2015

Companies belonging to diverse business sectors, Sicily, Italy

Leading teaching and joint-teaching activities on management engineering topics within programs of compulsory training courses for companies' workers according to the Italian regulation system. More than 160 hours training employees of companies belonging to various sectors (e.g. production, transportation, and health) have been certified.

An overview on courses taught

2012-present

Details about my experience in university as well as in industry are included in the attachment "Courses taught".

EXPERIENCE IN INDUSTRY AND RELATED FIELDS

Research Engineer

2019

Agua Bixquert SL, Xàtiva, Spain (sector: water supply)

Developing industrial scientific research by data collection and analyses to establish effective monitoring through the use of suitable key performance indicators. Scientific focus on the topic of IoT smart grid development environment.

Technical Consultant

2008-2018

Studio di Ingegneria Carpitella, Trapani, Italy (sector: engineering services)

Leading consulting and technical activities for industries operating in various sectors with relation to: optimal management of limited resources, improvement of safety and security conditions at work; industrial and organizational risk assessment; integrated systems implementation; process and layout optimization; maintenance management.

Research Engineer

2018

Ingeniousware GmbH, Karlsruhe, Germany (sector: customized software development)

Developing industrial scientific research to potentiate the process of data exchange in manufacturing technologies. Designing and programming an innovative website aimed at providing worldwide companies with a tool capable to enhance performance of real complex systems. Link to the website: <https://ahp.imaxweb.de/>.

Habilitated as an Industrial Engineer

2014-present

Università degli Studi di Palermo, Palermo, Italy

Professional engineering qualification. Enrolled in the Engineers Register of the Trapani District, No. 1811, Industrial Engineering Section A, Sector b for the period 2014-2020.

THESIS AND STUDENT SUPERVISOR

Lecturer of scientific internship

2022

Czech Academy of Sciences, Prague, Czech Republic

Lecturer of the 12 months program *Otevřená věda* (Open Science) for the scientific internship “Make the right decision to improve your business” attended by the Czech students Karolína Jelínková, Elena Musilová and Lída Kačenková.

Co-tutor of doctoral thesis

2021-present

Università degli Studi di Palermo, Palermo, Italy

Doctoral thesis entitled “Decision-making models for maintenance service support systems”, developed by the PhD candidate Umair Ahmed, XXXV cycle of doctorate in Technological Innovation Engineering (in progress).

Co-tutor of doctoral thesis

2019-present

Universitat Politècnica de València, Valencia, Spain

Doctoral thesis “Smarter water network operation and management”, developed by the PhD candidate Jorge Francés Chust with option to Industrial Thesis mention, doctorate in Water and Environment Engineering (in progress).

Advisor of doctoral thesis

2019-2020

Abdelmalek Essaâdi University, Tangier, Morocco

Doctoral thesis entitled “Study of the FMECA limitations and proposition of an improved method for risk assessment”, developed by Dr. Ilyas Mzougui within the doctoral program in Sciences and Engineering Techniques (defended). I was formally invited to take part as an external examiner to the evaluation tribunal for the PhD viva.

Director of bachelor degree theses

2019-2018

Università degli Studi di Palermo, Palermo, Italy

Director of the following works: “Evaluation of maintenance activities for an industrial water system”, Cristiano Bazzano (2019); “Maintenance management of systems and key performance indicators”, Antonio Tambuzzo (2018).

SCIENTIFIC PRODUCTION

Journal papers, book chapters, conference and educational articles

2016-present

Details about my production are included in the attachment “Publication list” and in my [Orcid record](#).

International dissemination of research results

2016-present

The list of conferences I attended as a speaker is reported in the attachment “Dissemination of results”.

Referee for high impact journals and Scopus conferences

2018-present

Details about my activity are available on my [Publons personal web page](#).

ACADEMIC AWARDS AND CERTIFICATES

Otto Wichterle award

2022

Czech Academy of Sciences, Prague, Czech Republic

Otto Wichterle Award granted as an excellent young scientist (under 35) at the Czech Academy of Sciences for the remarkable contributions to the advancement of scientific knowledge in the area of mathematics.

Prize to the doctoral thesis

2020

Fondazione Ing. Luigi De Januario, Milan, Italy

Four prizes awarded to the best master or doctoral theses defended in all the Italian Engineering Universities between September 2018 and December 2019. After formal evaluation carried out by a commission of professors, my doctoral thesis has been awarded with one of the two prizes dedicated to the area of Industrial Plant.

Extraordinary prize to the doctoral thesis

2020

Universitat Politècnica de València, Valencia, Spain

Twenty-five extraordinary prizes awarded to the best doctoral theses defended at the Polytechnic University of Valencia between the academic courses 2017/2018 and 2018/2019. After formal public contest and evaluation process, my thesis has been awarded with one of the four prizes dedicated to the area of Sciences.

Certificates in Advanced English and Advanced Spanish

2018-2017

Cambridge English Language Assessment - Instituto Cervantes

Certificate in Advanced English (Level C1) - Diploma de Español como Lengua Extranjera (Level C1).

CONFERENCE CHAIR

Simulation for Energy, Sustainable Development & Environment, Rome, Italy 2022
Chair of the track titled “Decision-making models for sustainable risk management”, promoting novel methodological perspectives for optimising decisions on sustainable risk management in the field of green manufacturing.

International workshop for PhD students, Telč, Czech Republic 2021
Chair of one of the sessions of the workshop titled “Velké říjnové soft-computingové rokování”, organised by the Czech Academy of Science and the Ostrava University, and dealing with several areas of uncertainty processing.

International Conference on Reliability and Quality in Design, virtual, online 2021
Conference Chair of session no.13 within the 26th ISSAT International Conference on Reliability and Quality in Design, held online. Titled of the coordinated session: Software Reliability & Risk Assessment.

INVITED LECTURES AND VISITS

Università degli Studi di Palermo, Palermo, Italy 2022
Conference titled “Decision-making models supporting production and service management”, held during the “Open Days” organised by the Engineering Department.

California State University Northridge, Los Angeles, United States 2022
Talk titled “Journey through international experiences to build a new and broad outlook” during the on-campus interview at the Department of Manufacturing Systems Engineering & Management.

Prague University of Economics and Business, Jindřichův Hradec, Czech Republic 2022
Giving the talk titled “International networking and dissemination of scientific results” as an invited speaker for a seminar organised by the Faculty of Management and dedicated to PhD students.

Czech Academy of Sciences, Prague, Czech Republic 2021
Giving the lecture titled “How to make consistent decisions under evaluation criteria often conflicting with each other?” as an invited speaker within a symposium organised by the Department of Decision-Making Theory.

Università degli Studi di Palermo, Palermo, Italy 2021
Giving the lecture titled “Innovating the relationship between academia and enterprise by promoting flexible research” for students of the Bachelor degree course in Innovation Engineering for Digital Enterprises.

University of Sheffield, Sheffield, United Kingdom 2020
Giving the talk titled “A novel perspective to manage the microbiology of drinking water distribution systems” within a seminar for professionals of international companies belonging to the water supply sector.

University of Sheffield, Sheffield, United Kingdom 2019
Giving the talk titled “Frameworks to solve business decision-making problems in the water sector” within a seminar for professors and PhD students of the Civil Structural Engineering Department.

Universidade Federal de Minas Gerais, Belo Horizonte, Brazil 2019
Giving the talk titled “Decision-making perspectives for maintenance optimisation” for professors, PhD and master students of the Department of Hydraulic Engineering and Water Resources.

Castillo de Xátiva, Xátiva, Spain 2019
Giving the talk titled “Multi-criteria selection of energy efficient pumping alternatives” within the III meeting of the FluIng research group on “Digitalisation for energy sustainability and water resources in water supply networks” for scholars and professionals in the water sector.

Universitat Politècnica de València, Valencia, Spain 2019
Giving the lecture titled “Applying the Analytic Hierarchy Process for industrial layout optimisation” for undergraduate students of the Instituto Universitario de Matemática Multidisciplinar.

École des Mines d’Albi-Carmaux, Albi, France 2018
Visiting the campus and attending the cycle of seminars titled “Multi-Criteria Decision-Making (MCDM) methods – The ELECTRE methods. The role of maintainability to improve software performance”.

Fraunhofer Research Institute, Karlsruhe, Germany

2018

Visiting the institute and attending the meeting with the top management organised within the I meeting of the FluIng research group to discuss about industry 4.0 and cutting-edge issues for the industrial reality.

Universitat Politècnica de València, Valencia, Spain

2016

Giving the talk titled “Techniques and functions of Multi-Criteria Decision-Making (MCDM) methods” for professors and PhD students of the Instituto Universitario de Matemática Multidisciplinar.

SCIENTIFIC EVENT ORGANISATION

International Mini-Symposium, Prague, Czech Republic

2022

Designing the program and chairing the international mini-symposium on “Modelling Techniques for Complex Networks and Managerial Insights”, organised in hybrid mode in cooperation with the Department of Decision-Making Theory of the Institute of Information Theory and Automation of the Czech Academy of Sciences ([link](#)).

II meeting FluIng international research group, West Sicily, Italy

2019

Coordinating a three-days meeting on “Decision-making challenges in a changing world: an international overview on academic and professional environments” with the participation of experts from worldwide Universities and Companies. Among them: Berliner Wasserbetriebe (Germany), University of Cambridge (UK), University of Cantabria (Spain), Federal University of Minas Gerais, Polytechnic University of Valencia (Spain). The program included a seminar for bachelor, master and PhD students in Palermo, and two industrial technical visits in the city close-by of Trapani. The seminar was broadcasted and followed live by other Italian universities ([link](#)).

XXIII Summer School Francesco Turco, Palermo, Italy

2018

Organising Committee member (Local Events and Logistics) of the XXIII edition of the Summer School F. Turco on “Innovative Management: Challenges and opportunities for industrial engineering”, September 12-14, organised by the University of Palermo and the Italian organisation of industrial plants professors (AIDI).

XXII Summer School Francesco Turco, Palermo, Italy

2017

Organising Committee member (Local Events and Logistics) of the XXII edition of the Summer School F. Turco on “Innovation and development in engineering applications”, held in September 13-15 in collaboration between the University of Palermo and the Italian organisation of industrial plants professors (AIDI).

SOCIETIES AND NETWORKING

IFAC (International Federation of Automatic Control)

2021-present

<https://www.ifac-control.org/>

AIDI (Italian organisation of industrial plants professors)

2016-present

<http://www.docenti-impianti-industriali.it/>

FluIng (International Research Group)

2016-present

<https://fluIng.upv.es/>

SIE (Italian society of ergonomics and human factors)

2017-2020

<http://www.societadiergonomia.it/>

PERSONAL DATA

I authorise the use of my personal data. I do hereby declare that particulars of information and facts stated in the present Curriculum Vitae are true, correct and complete to the best of my knowledge and belief. Supporting documents can be provided upon request.



Attachments

- SCIENTIFIC PROJECTS;
- COURSES TAUGHT;
- PUBLICATION LIST;
- DISSEMINATION OF RESULTS.

SCIENTIFIC PROJECTS

Projects admitted for funding on the basis of competitive calls and peer review processes

- 2020-2022 - Project title: Managerial Decisions: Rationality of Paradoxical Behaviour. Workplace: Faculty of Management of the Prague University of Economics and Business (Prague, Czech Republic). Project funded by Grantová Agentura České Republiky (GAČR), CRP Category: BC, project no. 19-06569S. Role taken: Research fellow according to the job classification established by the Wage Regulation of the Prague University of Economics and Business. Topic developed: theory of non-transitive preference relations. Output: two journal papers [20-21], one book chapter [1] and twelve conference papers [23-34] from my publication list. Working period: from November 2020 until June 2022.
- 2020 - Project title: Data processing innovation in the Cultural Heritage sector (acronym IDEHA). Workplace: Engineering Department of the University of Palermo (Palermo, Italy). Project funded by the Italian National Program for Research 2015-2020, CUP B66C18000330005, code PRJ-0055. Role taken: Research fellow as established by the public contest with code BS-RIC 155-2019. Grant assigned: 12.000€. Title of project phase developed: Definition of experiments and metrics for the validation of an IT platform for the Cultural Heritage sector. Output: a final technical report and journal paper [16] from my publication list. Working period: from March until May 2020.
- 2014-2015 - Project title: Mechanical sweeper on a truck with intelligent remote diagnostics. Workplace: Department of Chemistry, Management, Information Technology and Mechanics Engineering of the University of Palermo (Palermo, Italy). Project funded by PO FESR Regione Sicilia 2007-2013, CUP G83F12000130004. Role taken: Research fellow as established by two different public contests. Two grants assigned: 21.000€ and 10.500€. Titles of project phases developed: phase 9, In-depth study of the problems related to the design of a mechanical sweeper with particular reference to the reliability and maintenance scheme; phase 10, In-depth study of the problems related to the design of a mechanical sweeper with particular reference to the reliability and maintenance scheme, systems of diagnostics and control, sensors. Output: two final technical reports, three journal papers [1,13,18] from my publication list, and a dissemination video available [here](#) (my contribution is at 14'). Working period: from March 2014 until October 2015.

Projects developed within Erasmus mobility programs

- 2019-2020 - Project title: Evaluation of microbial risks assessment methods for drinking water distributions systems. Workplace: Civil Structural Engineering Department of the University of Sheffield (Sheffield, UK). Program: UPV ERASMUS+ per traineeship for postdocs. Role taken: Research engineer. Erasmus grant awarded by means of evaluation procedure. Output: journal paper [11] from my publication list, two technical seminars for results dissemination. Working period: from October 2019 until March 2020.
- 2017 - Project title: Predicting the time evolution of the population of the UK using genetic algorithms. Workplace: Centre for Energy and the Design of Environment of the University of Bath (Bath, UK). Program: UPV ERASMUS+ per traineeship for PhD students. Role taken: Research engineer. Erasmus grant awarded by means of evaluation procedure. Output: complementing chapter 3 of part I of my doctoral thesis and contributing to satisfy the requirements formally needed for achieving the title of *Doctor Europaeus*. Working period: from September 2017 until December 2017.
- 2016 - Project title: Multicriteria decision making in dynamic contexts. Workplace: Institute for Multi-disciplinary Mathematics of the Polytechnic University of Valencia (Valencia, Spain). Program: UNIPA ERASMUS+ per traineeship for PhD students. Role taken: Research engineer. Erasmus grant awarded by means of public contest. Output: three journal papers [2,3,4] from my publication list. Working period: from May until July 2016.

Experience in developing project proposals as a PI

Over the last years I have been gaining experience in independently applying for project grants as a principal investigator, having directly managed all the related bureaucratic issues beside the scientific contents of proposals. I developed and submitted two project proposals so far, both focused on management engineering topics, for public competition within the Junior Star category promoted by the Czech Science Foundation. This category is aimed at funding basic research for young researchers. Furthermore, I have contributed as a team member to the development of three projects within the standard category promoted by the Czech Science Foundation. My contribution aims to implement decision-making models for optimising a varied range of core business problems such as, for instance, supply chain management, risk and safety management.

COURSES TAUGHT

Supporting educational activities as a subject expert

- Academic Year 2021-2022 - Assisting Prof. Antonella Certa for the course: Production and Plants Management (15 credits) of the bachelor degree course in Innovation Engineering for Digital Enterprises at the Engineering Department of the University of Palermo (Palermo, Italy). Two modules: 1. Production management (7 credits) and 2. Plant management (8 credits).
- Academic Year 2020-2021 - Assisting Prof. Antonella Certa for the course: Production and Plants Management (15 credits) of the bachelor degree course in Innovation Engineering for Digital Enterprises at the Engineering Department of the University of Palermo (Palermo, Italy). Two modules: 1. Production management (7 credits) and 2. Plant management (8 credits).
- Academic Year 2019-2020 - Assisting Prof. Antonella Certa for the course: Production and Plants Management (15 credits) of the bachelor degree course in Innovation Engineering for Digital Enterprises at the Engineering Department of the University of Palermo (Palermo, Italy). Two modules: 1. Production management (7 credits) and 2. Plant management (8 credits).

Teaching assistant for university courses during my PhD

- Academic Year 2018-2019 - Assisting Prof. Antonella Certa for the course: Production and Plants Management (15 credits) of the bachelor degree course in Management and Computer Engineering at the Engineering Department of the University of Palermo (Palermo, Italy). Two modules: 1. Production management (7 credits) and 2. Plant management (8 credits).
- Academic Year 2017-2018 - Assisting Prof. Antonella Certa for the course: Production and Plants Management (15 credits) of the bachelor degree course in Management and Computer Engineering at the Engineering Department of the University of Palermo (Palermo, Italy). Two modules: 1. Production management (7 credits) and 2. Plant management (8 credits).
- Academic Year 2016-2017 - Assisting Prof. Antonella Certa for the course: Production and Plants Management (15 credits) of the bachelor degree course in Management and Computer Engineering at the Engineering Department of the University of Palermo (Palermo, Italy). One module: Plant management (8 credits).
- Academic Year 2016-2017 - Occasionally assisting Prof. Joaquín Izquierdo for the course: Mathematics II of the double bachelor degree course in Business Administration and Management + Telecommunication Technologies and Services Engineering, shared by the School of Telecommunications Engineering and the Faculty of Business Administration and Management of the Polytechnic University of Valencia (Valencia, Spain).
- Academic Year 2015-2016 - Assisting Prof. Antonella Certa for the course: Production and Plants Management (15 credits) of the bachelor degree course in Management and Computer Engineering at the Engineering Department of the University of Palermo (Palermo, Italy). One module: Plant management (8 credits).

Teaching and joint teaching trainer for companies

2015 Joint teaching the courses:

- Compulsory training for workers on safety and security, as established by the standard 81/08, art. 37. Company: CTA Life S.r.l., Castellammare del Golfo, Italy (duration: 8 hours). Sector: health service.
- Energy efficiency and savings: energy diagnosis, applications and business plans. Company: Donnafugata S.r.l., Marsala, Italy (duration: 8 hours). Sector: wine production and marketing.

2014 Teaching the courses:

- Compulsory training for workers on safety and security, as established by the standard 81/08, art. 37. Companies: Villa Letizia, Mazara del Vallo, Italy (duration: 4 hours); Cantina Sociale Casale S.coop., Marsala, Italy (duration: 4 hours); Sosalt S.p.a., Trapani, Italy (duration: 8 hours); Villa Sole reception center, Petrosino, Italy (duration: 12 hours); Salus S.r.l. and Life S.r.l., Trapani, Italy (duration: 8 hours); Sectors: health service; wine production; sea salt production; immigrant reception center; health service.

- Moving machinery operators: practical modules for hydraulic excavators and front loaders. Company: Sosalt S.p.a., Trapani, Italy (duration: 4 hours). Sector: sea salt production.

Joint teaching the course:

- Hygiene, inspection and maintenance of plants for energy saving purposes. Company: Donnafugata S.r.l., Marsala, Italy (duration: 4 hours). Sector: wine production and marketing.

2013 Teaching the courses:

- Quality, Safety, Environment (QSE) integrated management systems. Company: Cantina Sociale Primavera e Fazio Wines S.r.l., Fulgatore, Italy (duration: 20 hours). Sector: wine production and marketing.
- Compulsory training for workers on safety and security, as established by the standard 81/08, art. 37. Company: Sosalt S.p.a., Trapani, Italy (duration: 8 hours). Sector: sea salt production.

Joint teaching the courses:

- Training of Prevention and Protection Service staff. Company: Carlo Pellegrino S.p.a., Marsala, Italy (duration: 44 hours). Sector: wine production and marketing.
- Compulsory training for workers on safety and security, as established by the standard 81/08, art. 37. Company: Airgest S.p.a., V. Florio airport, Trapani, Italy (duration: 12 hours). Sector: air transportation.
- Training of fire personnel. Company: Carlo Pellegrino S.p.a., Marsala, Italy (duration: 4 hours). Sector: wine production and marketing.

2012 Teaching the course:



















- Principles of business organization, environmental improvement and sustainable reorganization. Company: Sosalt S.p.a., Trapani, Italy (duration: 12 hours). Sector: sea salt production.







Joint teaching the course:

- Compulsory training for workers on safety and security, as established by the standard 81/08, art. 37. Company: Cantina Sociale Primavera e Fazio Wines S.r.l., Fulgatore, Italy (duration: 4 hours). Sector: wine production and marketing.




PUBLICATION LIST

Journal papers

24.  De Anchieta, T.F.F., Meirelles, G., **Carpitella, S.**, Brentan, B., Izquierdo, J. Water Distribution Network Expansions from the Perspective of Complex Network Theory and Hydraulic Criteria. Submitted to Journal of Hydroinformatics (June 2022), under review.
23.  **Carpitella, S.**, Izquierdo, J., Plajner, M., Vomlel, J. Bayesian network approach to integrate the human factor in FMECA-based risk evaluation. Submitted to Mathematical Methods in the Applied Sciences (February 2022), under review.
22.  Mzougui, I., **Carpitella, S.**, Izquierdo, J. Implementing suitable contingency strategies based on COVID-19 supply chain risk assessment. Submitted to Supply Chain Forum: An International Journal (February 2022), under review.
21.  Benítez, J., **Carpitella, S.**, Izquierdo, J. Efficient sampling of pairwise comparisons in decision-making. Submitted to Journal of the Operational Research Society (May 2021), under review.
20.  **Carpitella, S.**, Inuiguchi, M., Kratochvíl, V., Pištěk, M. (2022) Multiple criteria decision analysis without consistency in pairwise comparisons. Computers & Industrial Engineering, 168, 108089, 1-11.
19.  Brentan, B., **Carpitella, S.**, Izquierdo, J., Luvizotto E., Meirelles, G. (2022) District metered area design through multi-criteria and multi-objective optimization. Mathematical Methods in the Applied Sciences, 45(6), 3254-3271.
18.  Ahmed, U., **Carpitella, S.**, Certa, A. (2021) An integrated methodological approach for optimising complex systems subjected to predictive maintenance. Reliability Engineering & System, 216, 108022, 1-16.
17.  **Carpitella, S.**, Mzougui, I., Izquierdo, J. (2021) Multi-criteria risk classification to enhance complex supply networks performance. OPSEARCH, online, 1-17.
16.  **Carpitella, S.**, Certa, A., Izquierdo, J., La Cascia, M. (2021) Multi-criteria decision-making approach for modular enterprise resource planning sorting problems. Journal of Multi-Criteria Decision Analysis, 28(5-6), 234-247.
15.  Brentan, B., **Carpitella, S.**, Barros, D., Meirelles, G., Certa, A., Izquierdo, J. (2021) Water quality sensor placement: a multi-objective and multi-criteria approach. Water Resources Management, 35(1), 225-241.
14.  **Carpitella, S.**, Mzougui, I., Benítez, J., Carpitella, F., Certa, A., Izquierdo, J., La Cascia, M. (2021) A risk evaluation framework for the best maintenance strategy: the case of a marine salt manufacture firm. Reliability Engineering & System Safety, 205, 107265, 1-14.
13.  Aiello, G., Benítez J., **Carpitella, S.**, Certa, A., Enea, M., Izquierdo, J., La Cascia, M. (2021) A decision support system to assure high performance maintenance service. Journal of Quality in Maintenance Engineering, 27(4), 651-670.
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8.  **Carpitella, S.**, Brentan, B., Montalvo, I., Izquierdo, J., Certa, A. (2019) Multi-criteria analysis applied to multi-objective optimal pump scheduling in water systems. Water Science & Technology Water Supply, 19(8), 2338-2346.
7.  Benítez, J., **Carpitella, S.**, Certa, A., Izquierdo, J. (2019) Management of uncertain pairwise comparisons in AHP through probabilistic concepts. Applied Soft Computing, 78, 274-285.

6.  Benítez, J., **Carpitella, S.**, Certa, A., Izquierdo, J. (2018) Characterisation of the consistent completion of AHP comparison matrices using graph theory. *Journal of Multi-Criteria Decision Analysis*, 26, 3-15.
5.  **Carpitella, S.**, Carpitella, F., Certa, A., Benítez, J., Izquierdo, J. (2018) Managing human factors to reduce organisational risk in industry. *Mathematical and Computational Applications*, 23(4), 67, 1-16.
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3.  Benítez, J., **Carpitella, S.**, Certa, A., Ilaya-Ayza, A.E., Izquierdo, J. (2018) Consistent clustering of entries in large pairwise comparison matrices. *Journal of Computational and Applied Mathematics*, 343, 98-112.
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1.  **Carpitella, S.**, Certa, A., Izquierdo, J., La Fata, C.M. (2018) A combined multi-criteria approach to support FMECA analyses: a real-world case. *Reliability Engineering & System Safety*, 169, 394-402.

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3.  **Carpitella, S.**, Certa, A., Izquierdo, J. (2022) Feedback-based algorithm for negotiating human preferences and making risk assessment decisions. *Applications in Reliability and Statistical Computing*, in Springer Series in Reliability Engineering, to be released.
2.  Mzougui, I., **Carpitella, S.**, Izquierdo, J. (2022) Promoting expert knowledge for comprehensive human risk management in industrial environments. *Applications in Reliability and Statistical Computing*, in Springer Series in Reliability Engineering, to be released.
1.  **Carpitella, S.**, Izquierdo, J. (2022) Preference-based assessment of organisational risk in complex environments. *Integrated Uncertainty in Knowledge Modelling and Decision Making*, in Springer Series in Lecture Notes in Artificial Intelligence, 13199, 40-52.

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36. **Carpitella, S.**, Certa, A., Marcon, G. (2022) How sustainability factors influence maintenance of water distribution systems feeding manufacturing industries. *Proceedings of the 10th International Workshop on Simulation for Energy, Sustainable Development Environment*, Rome, Italy, September 19-21, under review.
35. Ahmed, U., **Carpitella, S.**, Certa, A. (2022) Digital transformation in maintenance management. *Proceedings of the 27th Summer School "Francesco Turco"*, Riviera dei Fiori, Italy, September 7-9, accepted.
34. Brentan, B., **Carpitella, S.**, Zanfei, A., Souza, R.G., Menapace, A., Meirelles, G., Izquierdo, J. (2022) Clustering of rehabilitation alternatives for large intermittent water distribution systems. *Proceedings of the 24th Conference on Mathematical Modelling in Engineering and Human Behaviour*, Valencia, Spain, July 13-15, accepted.
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31. De Anchieta, T.F.F., Meirelles, G., Brentan, B., **Carpitella, S.** (2022) Hydraulic capacity recovery after demand expansion: complex network and preference-aided multicriteria analysis. *Proceedings of the EWRI World Environmental & Water Resources Congress*, Atlanta, Georgia, USA, June 5-8, 1015-1028.
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26. Ahmed, U., **Carpitella, S.**, Certa, A. (2021) Managerial decision making for complex service systems optimisation. Proceedings of the 26th ISSAT International Conference on Reliability and Quality in Design, virtual, online, August 5-7, 6-10.
25. **Carpitella, S.**, Mzougui, I., Izquierdo, J. (2021) Fuzzy cognitive maps for knowledge-oriented human risk management in industry. Proceedings of the 26th ISSAT International Conference on Reliability and Quality in Design, virtual, online, August 5-7, 134-138.
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22. Mzougui, I., **Carpitella, S.**, Izquierdo, J. (2021) Contingency plan selection under interdependent risks. Proceedings of the 23rd Conference on Mathematical Modelling in Engineering and Human Behaviour, Valencia, Spain, July 14-16, 111-116.
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19. **Carpitella, S.**, Izquierdo, J., Plajner, M., Vomlel, J. (2020) Integrating the human factor in FMECA-based risk evaluation through Bayesian networks. Proceedings of the 22th Conference on Mathematical Modelling in Engineering and Human Behaviour, Valencia, Spain, July 8-10, 24-29.
18. **Carpitella, S.**, Herrera, M., Certa, A., Izquierdo, J. (2019) Updating the OSPF routing protocol for communication networks by optimal decision-making over the k-shortest path algorithm. Proceedings of the 21th International Conference on Mathematical Modelling in Engineering and Human Behaviour, Valencia, Spain, July 10-12, 118-123.
17. Brentan, B., **Carpitella, S.**, Izquierdo, J., Luvizotto, E., Meirelles, G. (2019) A multi-objective and multi-criteria approach for district metered area design: water operation and quality analysis. Proceedings of the 21th International Conference on Mathematical Modelling in Engineering and Human Behaviour, Valencia, Spain, July 10-12, 110-117.
16. Francés-Chust, J., **Carpitella, S.**, Herrera, M., Izquierdo, J., Montalvo, I. (2019) Optimal placement of quality sensors in water distribution systems. Proceedings of the 21th International Conference on Mathematical Modelling in Engineering and Human Behaviour, Valencia, Spain, July 10-12, 124-130.
15. Benítez, J., **Carpitella, S.**, Certa, A., Izquierdo, J. (2019) Sampling of pairwise comparisons in decision-making. Proceedings of the 21th International Conference on Mathematical Modelling in Engineering and Human Behaviour, Valencia, Spain, July 10-12, 105-109.
14. **Carpitella, S.**, Certa, A., Izquierdo, J. (2018) DEMATEL-based consensual selection of suitable maintenance KPIs. Proceedings of the 24th ISSAT International Conference on Reliability and Quality in Design, Toronto, Canada, August 2-6, 270-274.

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12. **Carpitella, S.**, Brentan, B., Montalvo, I., Izquierdo, J., Certa, A. (2018) Multi-objective and multi-criteria analysis for optimal pump scheduling in water systems. Proceedings of the 13th International Hydroinformatics Conference HIC, Palermo, Italy, July 1-6, EPiC Series in Engineering 3, 364-371.
11. **Carpitella, S.**, Certa, A., Enea, M. (2018) The ELECTRE I method to support the FMECA. Proceedings of the 16th IFAC Symposium on Information Control Problems in Manufacturing INCOM, Bergamo, Italy, June 11-13, IFAC PapersOnLine 51(11), 459-464.
10. **Carpitella, S.**, Certa, A., Enea, M., Galante, G., Izquierdo, J., La Fata, C.M., Vella, F. (2017) Combined HACCP and TOPSIS-based approach to prioritize risks in the salmon manufacturing process: a case study. Proceedings of the 22th Summer School “Francesco Turco”, Palermo, Italy, September 13-15, 150-156.
9. Benítez, J., **Carpitella, S.**, Certa, A., Izquierdo, J., La Fata, C.M. (2017) Some consistency issues in multi-criteria decision making. Proceedings of the 22th Summer School “Francesco Turco”, Palermo, Italy, September 13-15, 411-418.
8. **Carpitella, S.**, Certa, A., Enea, M., Galante, G.M., Izquierdo, J., La Fata, C.M. (2017) Human Reliability Analysis to support the development of a software project. Proceedings of the 23th ISSAT International Conference on Reliability and Quality in Design, Chicago, Illinois, USA, August 4-6, 214-218.
7. **Carpitella, S.**, Ocana-Levario, S.J., Benítez, J., Certa, A., Enea, M., Izquierdo, J. (2017) The ELECTRE I method to optimise GPR data processing analyses for maintenance of water networks. Proceedings of the 23th ISSAT International Conference on Reliability and Quality in Design, Chicago, Illinois, USA, August 4-6, 6-10.
6. Benítez, J., **Carpitella, S.**, Certa, A., Ilaya-Ayza, A.E., Izquierdo, J. (2017) Some awkward issues on pairwise comparison matrices. Proceedings of the 19th International Conference on Mathematical Modelling in Engineering and Human Behaviour, Valencia, Spain, July 17-19, 43-48.
5. **Carpitella, S.**, Carpitella, F., Benítez, J., Certa, A., Izquierdo, J. (2017) Prioritization of maintenance actions in water distribution systems. Proceedings of Congreso de Métodos Numéricos en Ingeniería CMN, Valencia, Spain, July 3-5, 1656-1664.
4. Certa, A., **Carpitella, S.**, Enea, M., Micale, R. (2016) A multi criteria decision making approach to support the risk management: a case study. Proceedings of the 21th Summer School “Francesco Turco”, Naples, Italy, September 13-15, 242-246.
3. **Carpitella, S.**, Certa, A., Izquierdo, J., La Fata, C.M., Pérez-García R. (2016) Optimal design of k-out-of-n systems. Proceedings of the XII Seminario Euro Latinoamericano de Sistemas de Ingeniería, Lleida, Spain, September 5-7.
2. **Carpitella, S.**, Certa, A., Galante, G., Izquierdo, J., La Fata, C.M. (2016) The FTOPSIS method to support FMECA analyses. Proceedings of the 22th ISSAT International Conference on Reliability and Quality in Design, Los Angeles, California, USA, August 4-6, 398-402.
1. **Carpitella, S.**, Certa, A., Galante, G., Izquierdo, J. (2016) An equation to calculate the availability for the k-out-of-n system. Proceedings of the 18th International Conference on Mathematical Modelling in Engineering and Human Behaviour, Valencia, Spain, July 18-20, 34-39.

Educational articles

6. Izquierdo, J., **Carpitella, S.** (2022) Clasificaciones deportivas y búsquedas en internet. Asomándote a las redes complejas. [Link](#) to the article.
5. Izquierdo, J., **Carpitella, S.** (2022) Sistemas dinámicos lineales discretos. Una primera pincelada. [Link](#) to the article.
4. Benítez, J., **Carpitella, S.**, Izquierdo, J. (2021) Una clase inicial de motivación para el Álgebra Lineal. [Link](#) to the article.
3. Benítez, J., **Carpitella, S.**, Izquierdo, J. (2020) Ajuste y calibración, con la llegada de nuevos datos, de un modelo epidemiológico simple. [Link](#) to the article.

2. Benítez, J., **Carpitella, S.**, Izquierdo, J. (2019) Esquema de derivación consistente de prioridades en un marco de consenso. [Link](#) to the article.
1. Izquierdo, J., **Carpitella, S.** (2018) Funciones test para optimización mono-objetivo. [Link](#) to the article.

DISSEMINATION OF RESULTS

List of international conferences attended as a speaker

- 2022 Presenting the paper titled “Sustainable suppliers evaluation in the waste management sector: the case of a leading Sicilian enterprise” during the CSC Workshop Control for Smart Cities, virtual, online, June 27-30.
- 2022 Presenting the paper titled “Hydraulic capacity recovery after demand expansion: complex network and preference-aided multicriteria analysis” during the EWRI World Environmental & Water Resources Congress, Atlanta, Georgia, USA, June 5-8.
- 2022 Presenting the paper titled “Hybrid evaluation of the industrial global impact on Mexican aquifers under uncertain criteria evaluations” during the 12th Workshop on Uncertainty Processing WUPES, Kutná Hora, Czech Republic, June 1-4.
- 2022 Presenting the paper titled “Preference-based assessment of organisational risk in complex environments” during the 9th International Symposium on Integrated Uncertainty in Knowledge Modelling and Decision Making IUKM, virtual, online, March 18-20.
- 2021 Presenting the paper titled “Managing expert knowledge in water network expansion project implementation” during the 6th IFAC Hybrid Conference on Analysis and Control of Chaotic Systems CHAOS, Catania, Italy, September 27-29.
- 2021 Presenting the paper titled “A novel approach to handle intransitive judgements in industrial control problems” during the 20th MAS International Conference on Modelling and Applied Simulation, virtual, online, September 15-17.
- 2021 Presenting the paper titled “Flexible negotiation process to adhere to human preferences; a case on work equipment risk assessment” during the 26th ISSAT International Conference on Reliability and Quality in Design, virtual, online, August 5-7.
- 2021 Presenting the paper titled “Improved pairwise comparison transitivity using strategically selected reduced information” during the 23rd Conference on Mathematical Modelling in Engineering and Human Behaviour, Valencia, Spain, July 14-16.
- 2019 Presenting the paper titled “Updating the OSPF routing protocol for communication networks by optimal decision-making over the k-shortest path algorithm” during the 21th International Conference on Mathematical Modelling in Engineering and Human Behaviour, Valencia, Spain, July 10-12.
- 2018 Presenting the paper titled “Assessing organizational risk in industry by evaluating interdependencies among human factors through the DEMATEL methodology” during the 20th International Conference on Mathematical Modelling in Engineering and Human Behaviour, Valencia, Spain, July 16-18.
- 2018 Presenting the paper titled “Multi-objective and multi-criteria analysis for optimal pump scheduling in water systems” during the 13th International Hydroinformatics Conference HIC, Palermo, Italy, July 1-6.
- 2017 Presenting the paper titled “Some consistency issues in multi-criteria decision making” during the 22th Summer School “Francesco Turco”, Palermo, Italy, September 13-15.
- 2017 Presenting the paper titled “Some awkward issues on pairwise comparison matrices” during the 19th International Conference on Mathematical Modelling in Engineering and Human Behaviour, Valencia, Spain, July 17-19.
- 2017 Presenting the paper titled “Prioritization of maintenance actions in water distribution systems” during the Congreso de Métodos Numéricos en Ingeniería CMN, Valencia, Spain, July 3-5.
- 2016 Presenting the paper titled “A multi criteria decision making approach to support the risk management: a case study” during the 21th Summer School “Francesco Turco”, Naples, Italy, September 13-15.
- 2016 Presenting the paper titled “An equation to calculate the availability for the k-out-of-n system” during the 18th International Conference on Mathematical Modelling in Engineering and Human Behaviour, Valencia, Spain, July 18-20.