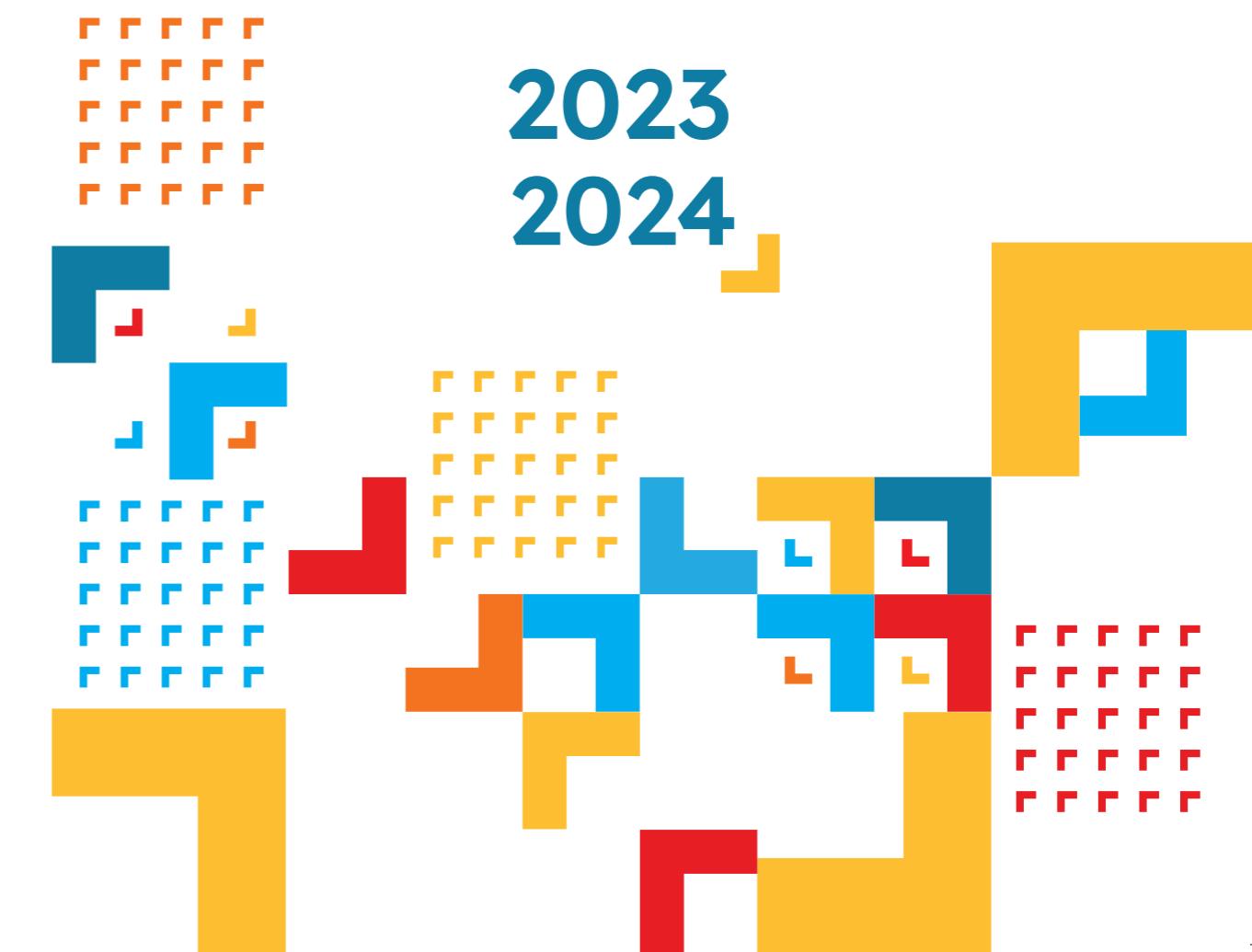
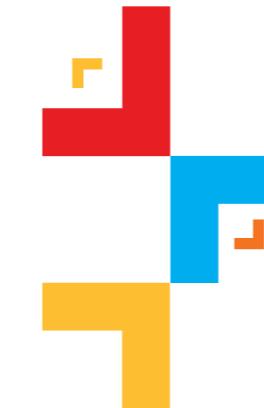
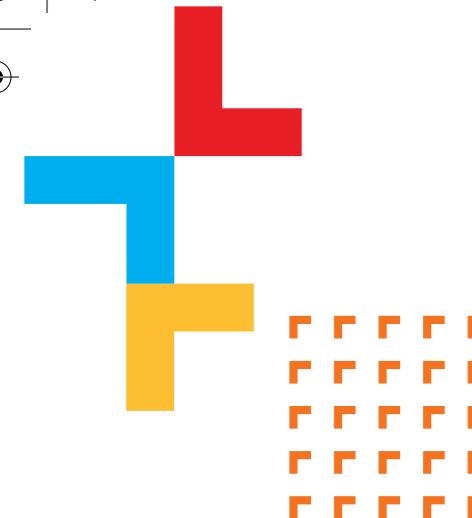


# Biennial Report

2023  
2024



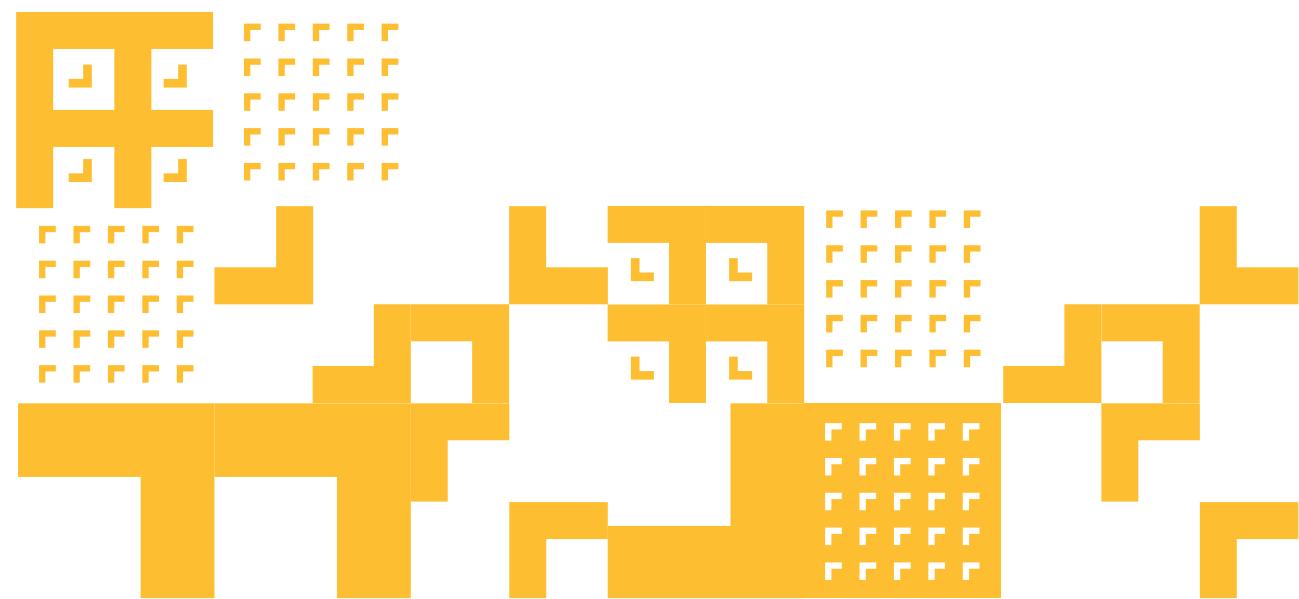
# Biennial Report

2023  
2024

# Biennial Report

2023

2024



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# President's Foreword

**Tânia Ramos**

It has been a privilege to serve as President of CEGIST and to lead its vibrant and dedicated community over the past two years.

CEGIST is a leading multidisciplinary research centre at the interface between management and engineering, hosted by Técnico, the largest and most renowned engineering school in Portugal. We are driven by real-world problems, linking management science and engineering approaches to deliver impactful research on global challenges such as climate change, digitalization, and sustainable development,

in collaboration with industry and other stakeholders.

Higher education institutions and their research centres play a vital role in addressing complex societal and technological challenges. At CEGIST, we embrace this responsibility with a commitment to advancing scientific knowledge and developing innovative solutions to complex managerial and organizational issues. Establishing strong scientific leadership to drive the growth of a truly excellent research centre has been a key strategic priority over the years.

The last two years were marked by an intense period of preparation for the FCT Units Evaluation. While CEGIST was already operating at what we believed to be an Excellent level, our collective efforts during this time focused on ensuring that our achievements and impact were clearly visible - with the goal of elevating CEGIST's classification from Very Good to Excellent. This objective became a catalyst for critical reflection, strengthening our alignment with the highest standards of scientific rigour, societal relevance, and institutional development. A major highlight of this biennium was the in-person visit of our Scientific Advisory Board in April 2023. We were honoured to welcome Gregory Parnell (University of Arkansas), Roy Thurik (Erasmus University Rotterdam), and Elena Fernández (University of Cádiz), with Heriberto Cabezas (University of Miskolc) joining online. This two-day event was instrumental in shaping CEGIST's future: the first day focused on our strategic plan for 2024-2028, while the second day featured a PhD Pitch event and a round-table discussion on strategies to position CEGIST as a leading international research centre.

Our pursuit of research excellence is evident in the increasing number of scientific papers published in top-tier journals. Several of these works were distinguished with Best Paper awards from renowned scientific societies and journals. Close to half of our publications involved international co-authors, including

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collaborators from renowned institutions such as MIT, Carnegie Mellon University, Imperial College London, and LSE.

Our international standing is also reflected in individual accolades: three CEGIST researchers were ranked among the World Top 2% most-cited scientists (Stanford-Elsevier, 2023); one was appointed as the Portuguese representative to the European Commission's Circularity Working Group on critical raw materials; and one currently serves as President of the International Society on Multiple Criteria Decision Making. During 2023-2024, CEGIST coordinated several

national and international projects and led impactful industry partnerships. New projects such as CHARADE and Digitalisation in the Portuguese Labour Market, tackle pressing energy and employment challenges. Ongoing efforts like AGE and Future Pharma continue to reinforce our interdisciplinary reach, while completed projects such as the Circular Economy Action Plan for Portugal and the Partnership for Health System Sustainability and Resilience exemplify our ability to deliver research with impact on public policy. Our CEGIST Seminar Series has become a key platform for academic dialogue, featuring 18 international and 9 national speakers, strengthening our global and local connections.

We also reaffirmed our commitment to nurturing the next generation of researchers, as evidenced by the significant number of master's and PhD theses supervised. The launch of the Brown Bag Seminars - a student - led initiative - exemplifies the dynamism and autonomy we encourage within our research community.

Beyond research, we expanded our visibility and public engagement. The launch of our first public Biennial Report, covering 2021–2022, marked a significant step in our commitment to transparency and knowledge dissemination. Our outreach activities grew through media appearances, science communication events, and participation in initiatives like the European Researchers' Night and GIRLSTEAM. Our researchers actively contributed to public

dialogue through interviews, seminars, podcasts, blogs, and public science forums.

Internally, we strengthened our institutional culture through initiatives like CEGIST Away Day, fostering our sense of community and shared purpose. We invested in young researchers, expanded infrastructure – our new Laboratory for Research, Teaching and Societal Impact for Logistics and Operations, LOG. lab, was inaugurated in May 2024, reinforced our Pre-Award office with a full-time officer, and launched an internal European Research Council (ERC) program including round tables with evaluators and awardees, pitch sessions, individual mentoring and proposal development support. We promoted interdisciplinarity across our research areas, deepened ties with industry, and launched new strategies to promote internationalization and collaboration.

Looking ahead, we remain committed to advancing knowledge, fostering innovation, and addressing society's most urgent challenges. We are confident that our collective efforts - guided by scientific integrity, and academic freedom - will continue to grow in impact and relevance. I am deeply grateful to all researchers, staff, students, and partners whose dedication and excellence have made these achievements possible. Because excellence in research is not just about results – it is also about the people who make them happen!

Tânia Rauos



# About CEGIST

## Our Mission

We explore the links between management science and engineering approaches to stimulate creativity in problem-solving while actively collaborating with industry, public institutions and other stakeholders to transfer technology, add value to society, and support the development of public policies. Through our research, we aim to address pressing global challenges and contribute to sustainable development.

## Our Vision

To be a leading international research centre at the interface between Management Science and Engineering and to be the first choice for partners looking to make a lasting impact on society via cutting-edge approaches operating in the interface between engineering, technology, and management science.

# Organization and Governance

## Executive Board



Hugo Castro Silva  
Board Member



Bill Williams  
Board Member

Tânia Ramos  
President



Daniel Santos  
Vice-President



Sofia Machaqueiro  
Administrative Support

## External Advisory Board



Elena Fernández  
University of Cádiz



Gregory Parnell  
University of Arkansas



Heriberto Cabezas  
University of Miskolc



Nilay Shah  
Imperial College London



Roy Thurik  
Erasmus University Rotterdam

## Integrated members

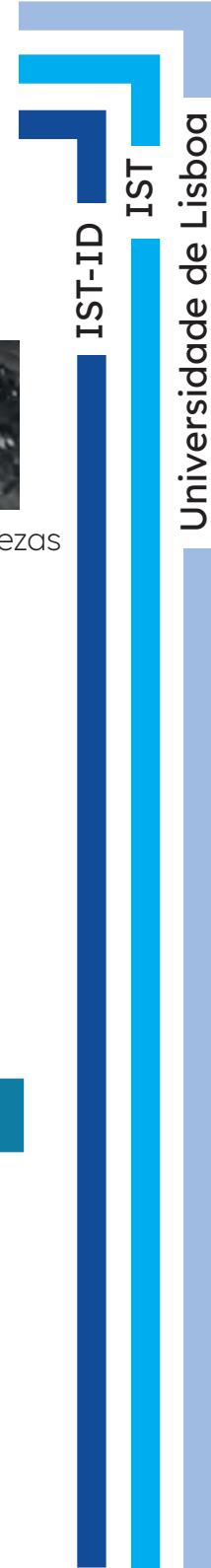
## Pre-Award Office



Mariana Santa-Marta  
Head



Mariana Batista Santos  
Officer



## Principal Investigators Committee



Ana Barbosa-Póvoa  
OpLog



Rui Baptista  
SEI



Mónica Oliveira  
DECISING



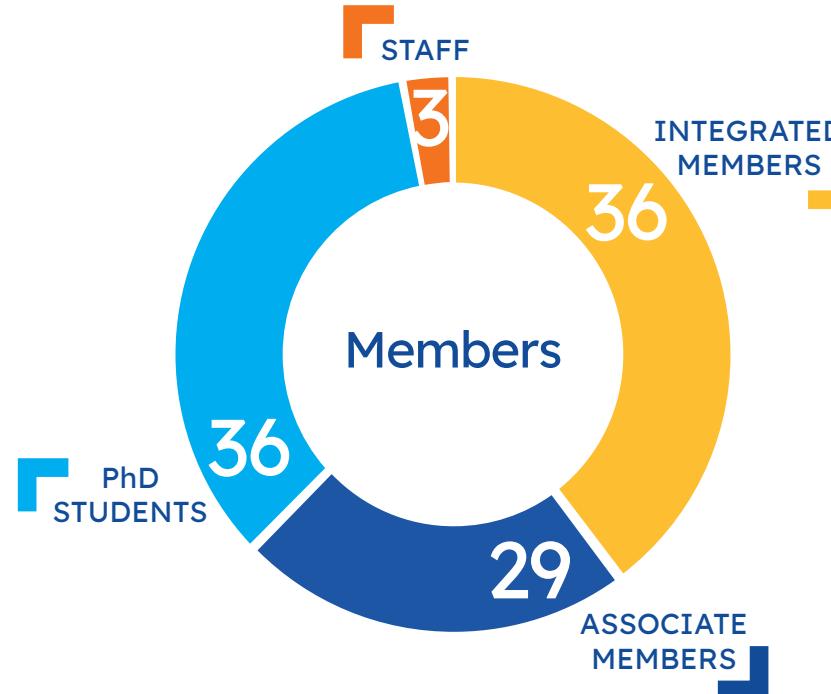
José Rui Figueira  
MOSAIC



Ana Isabel Carvalho  
SUSTAINS

## Scientific Council

# Facts and Numbers



## Nationalities

15

Portugal	83	Cuba	1
Brazil	7	Germany	1
Spain	2	Iran	1
Angola	1	Ireland	1
Chile	1	Italy	1
Colombia	1	Japan	1
		Netherlands	1
		Pakistan	1
		Turkey	1



54%  
FEMALE



46%  
MALE

Note: Team members at 31.12.2024

## Subject areas of publications (Scopus)



79 2023

71 ARTICLES

8 BOOK CHAPTERS



98 2023

93 MSc

5 PhD



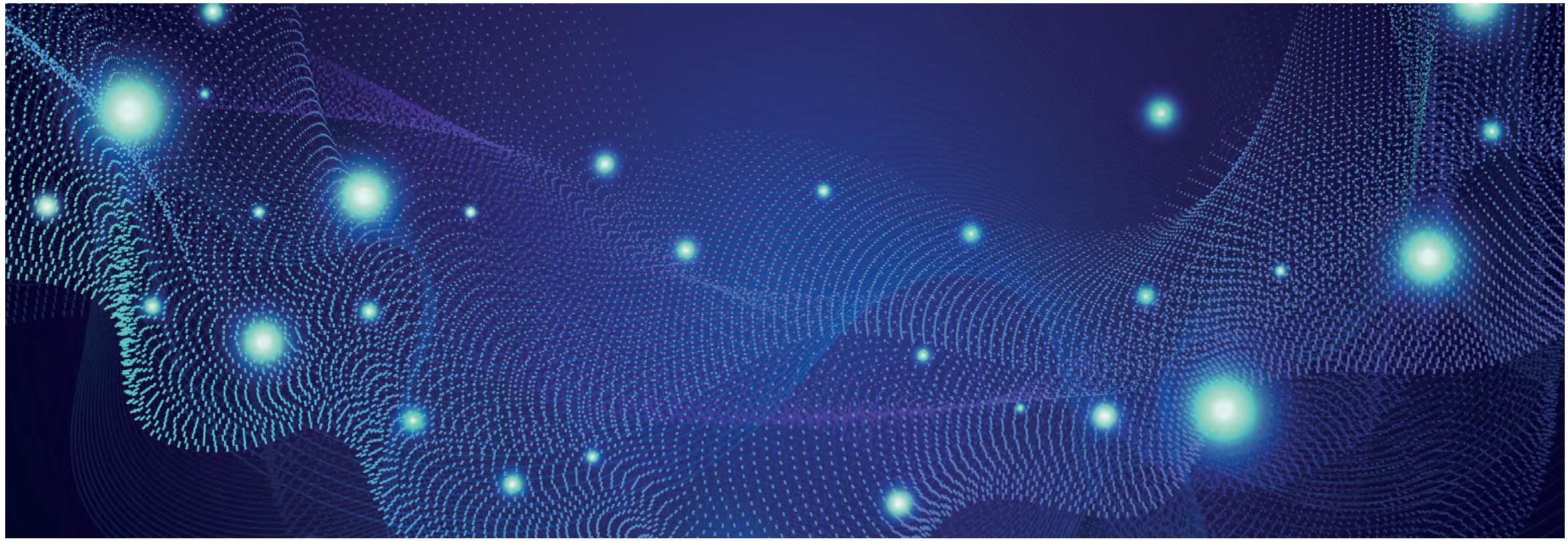
57 ARTICLES

8 BOOK CHAPTERS



96 MSc

3 PhD



# Research Areas

CEGIST's core research is on the design and application of innovative models, methods, and tools in the engineering and management of systems and organizations, spread into five complementary research areas, developing research in:

- Decision Science and Management Engineering

(DECISING): methods, models, and decision-support tools to assist engineering management practice in complex contexts involving diverse stakeholders, multiple objectives, and uncertainty sources.

- Systems Modelling and Methods of Operations Research and Analytics (MOSAIC): modelling

and solving real-world complex problems through innovative mathematical programming methods and algorithms.

- Operations, Logistics and Supply Chain Management (OpLog): management challenges faced by industry and services organizations regarding their operations, logistics, and supply chains.
- Strategy, Entrepreneurship

and Innovation (SEI): corporate strategy, economics, entrepreneurship and innovation, and their relationship with industry dynamics, labor markets, and economic development.

- Sustainable Solutions and Assessment for Circular Economy Systems (SUSTAINS): sustainability assessment tools and practices from a circular economy perspective.

# DECISING DECISION science and management engineerING

## Mónica Oliveira



Mónica Oliveira is Full Professor in Decision Sciences at the Engineering and Management Department of IST and coordinates DECISING. She has enhanced and applied management science techniques in multiple organizations and lead national and international projects. Impact of her work has been recognized by the 2023 INFORMS/SDP Decision Practice award.

Driven by real world challenges on the frontiers of engineering and management, and grounded in the principles of decision-making and decision-aiding theory, the Decision Science and Management Engineering (DECISING) branch of CEGIST is a multimethodological area that develops methods, models, decision-support tools and knowledge to assist engineering management practice in complex contexts that involve diverse stakeholders, multiple objectives and several sources of uncertainty. At DECISING we follow a collaborative learning constructivist paradigm integrating socio-technical processes to design sustainable solutions to problems of performance appraisal and value measurement, evaluation and prioritization, resource allocation and budgeting, risk analysis, project management, policy design and strategic choice. Our mission is driven by industry innovation, multidisciplinary research and spin-off partnerships, and is currently focused on (although not limited to) health, energy, and environmental settings, always exploring cross-fertilization with the other areas of CEGIST and international collaborations.

## Achievements

In the 2023–24 period, DECISING's main achievements included:

- a) Leading the Partnership for Health Systems Sustainability and Resilience in Portugal—an initiative by the World Economic Forum, London School of Economics, and AstraZeneca—engaging 40 stakeholders in designing impactful, media-covered policy recommendations discussed throughout 2023.
- b) Actively organizing national and international events, including the 5th International Conference on Health Care Systems Engineering (Lisbon) and the 8th Annual Conference “Developing Knowledge and Tools for Patient-Centric Care” of the Lisbon University Health Network.
- c) Participating in governmental commissions on Portugal’s genomic medicine strategy and on assessing national medical education needs.
- d) Collaborating with European health technology agencies and Portuguese hospitals to develop pioneering methodologies for evaluating medical devices and assist real decision-makers, including tools to assess genomic panel contracting strategies (Afonso et al., 2023) and distinct medical devices (Freitas et al., 2023), and to build composite indices from qualitative judgments (Bana e Costa et al., 2023).
- e) Providing consultancy services, such as designing consensus-building methods for managing type-2 inflammation patients (ISBE/SANOFI), resulting in a peer-reviewed publication (Costa et al., 2024).
- f) Launching innovative pedagogical initiatives, notably the MOOC “Regulation of Health Technologies” (with the Pharmacy School, INFARMED, and industry partners), and contributing to HEI4FUTURE (EIT Urban Mobility) to design new education for health professionals.
- g) Winning the 2023 INFORMS Decision Analysis Practice Award (Decision Analysis Society and Society of Decision Professionals) for work on participatory decision analysis and collaborative value modelling.
- h) Receiving international recognition, including Carlos Bana e Costa’s inclusion among the 2024 World’s Top 2% Scientists for lifetime achievements.

## Methods

MACBETH and other multicriteria modelling techniques and tools

Decision conferencing and Delphi participatory processes

Project and portfolio decision analysis

Foresight and risk modelling

Problem structuring methods and behavioral operational research

## Highlights

DECISING research has been assisting real decision-makers with multimethodologies in several industries.

The DECISING collaborative value modelling framework has been adopted in international large-scale policy-making processes and has been a seed for policy, research, and educational partnerships.

Area applications include quality management, risk evaluation in the oil industry, health technology assessment, engineering education, policy evaluation and environmental sustainability.

Recent research includes behavioral operational research and foresight studies, developing virtual decision conferencing and Delphi processes, and tools to enhance the MACBETH approach.

# MOSAIC

## Systems modelling and Methods of Operations reSearch And analytICs



### José Rui Figueira



José Rui Figueira is currently a Full Professor at Instituto Superior Técnico – University of Lisbon, with previous lecturing experiences at University of Évora, University of Coimbra and Nancy's School of Mines (where he obtained a Full Professor position).



The systems modelling and Methods of Operations reSearch And analytICs (MOSAIC) research area of CEGIST is devoted to modelling and solving real-world complex problems, mainly through the design of single and multi-objective mathematical programming innovative tools (methodologies, methods, algorithms, and software), enabling organizations to convert challenges into advantageous opportunities, helping to make better decisions in a vast range of areas of engineering and sciences. MOSAIC's mission is thus grounded in the principles of interdisciplinarity, integration and internationalization. Its main objectives are: to foster interdisciplinary activity on modeling and solving optimization problems covering the various areas; to provide a platform for integrating people and promote cross-fertilization mainly for the development of mathematical programming tools and their application in practice; and to promote the development of necessary theory to meet the needs of complex optimization problems by establishing international cooperation.

## Achievements

The MOSAIC research area achieved significant milestones during 2023–2024. In 2024, José Rui Figueira was elected President of the International Society on Multiple Criteria Decision Making. He was internationally recognized in 2023 as one of the World's Top 2% Scientists (Stanford ranking). Miguel Alves Pereira received the APDIO IO2024 Award for the best PhD thesis in Operational Research defended between 2021 and 2023.

Over this period, MOSAIC published over 30 papers in leading peer-reviewed journals. Noteworthy contributions include the development of three new algorithms designed to address the complexity of presenting Pareto fronts in multi-objective optimization, focusing on cardinality, coverage, and uniformity. These algorithms demonstrated state-of-the-art performance in generating representative solution sets (Mesquita-Cunha et al., 2023). Another highlight was the introduction of a fast and effective greedy heuristic, augmented by a cooperative coevolutionary genetic programming-based hyper-heuristic, for job shop lot-sizing and scheduling, yielding near-optimal solutions in under one second

## Methods

Design and implementation of methods for single and multi-objective optimization

Analytics, machine learning, simulation and optimization

Robustness and stochastic analysis

Data Envelopment Analysis

Meta-heuristics and hyper-heuristics for optimization

Combinatorial and mixed integer linear programming

## Highlights

José Rui Figueira was elected President of the International Society on Multiple Criteria Decision Making in 2024.

Over 30 articles were published in top-tier peer reviewed journals, advancing methodologies in multi-objective optimization, scheduling, composite indicators, and healthcare analytics.

Miguel Alves Pereira won the APDIO IO2024 Award for the best PhD thesis in Operational Research.

Innovative algorithms and ultra-fast heuristics achieved state-of-the-art optimization across academic and industrial settings.

Impactful science outreach through major events like Técnico Open Day, promoting Operational Research with interactive activities.

(Zeitrag et al., 2024). Further advances include a multi-objective model and a two-stage solution method for thesis defense scheduling, which proved effective across diverse university scenarios (Almeida et al., 2024). A methodology for constructing composite indicators applicable across various domains marked a breakthrough in operations research and analytics (Figueira et al., 2023). Additional contributions involved a fuzzy BoD-based reassessment of the Healthcare Access and Quality Index and the development of a categorization framework for evaluating public hospitals using Electre Tri-nC with criteria interactions (Pereira et al., 2024a, 2024b).

MOSAIC has been actively involved in outreach activities. Over the past two years, it participated in Técnico Open Day's Science Fair, the XXth and XXIth Mathematics Fairs, APIST Summer Camp, with activities including "Come Build a Tangram," "To Cut or Not To Cut: That is the Question," and "Efficiency League: Choose the Champion Club".

# OpLog

## Operations, Logistics and Supply Chain Management



### Ana Barbosa-Póvoa



Ana Barbosa-Póvoa is a Full Professor in Operations and Logistics at the Engineering and Management Department of Instituto Superior Técnico (IST), University of Lisbon. Her research focuses on developing a deep and comprehensive understanding of complex problems in supply chains and operations management, supported by innovative engineering systems models and techniques. Her contributions have been recognized with numerous national and international awards. She serves in several editorial boards. She is a Vice President of EURO, the European Association of Operational Research Societies, and a founding member of the EURO Working Group on Sustainable Supply Chains.



OpLog research area at CEGIST conducts multidisciplinary research driven by the challenges faced by industry and service organizations in managing their operations, logistics, and supply chains. Our research is focused on advancing the integrated knowledge of these disciplines, ranging from strategic to operational decision-making, and is grounded in the conceptual and analytical foundations of Systems Engineering. We strengthen the theoretical foundations necessary for supporting sound decision making, which is further applied to improve industrial practice. Our research outcomes include developing decision-support products and processes that foster effectiveness, efficiency and sustainability. To broaden our reach, we engage in national and international collaborative research to develop innovative solutions to complex issues faced by various industries. Our applied research targets sectors such as (but not limited to) agri-food, health, manufacturing, process-based industries, energy, transportation, logistics, retail, waste management, and social services.

### Achievements

In the 2023-24 period, OpLog's major achievements span from: 1) being leading partner and coordinator for research funding involving diverse projects developed in close collaboration with other research partners and industry, resulting in integrated modelling approaches/tools to assist organisations in their path towards effectiveness, efficiency, and sustainability excellence; 2) proven global academic leadership through an increased number of high-quality, peer-reviewed publications with a strong citation impact; Ana Póvoa (OpLog's PI) achieved international acclaim in 2023, ranking as the World's Top 2% Scientist for her career achievements and contributions; invited international plenary lectures; keynotes; participation in Ph.D. examination committees worldwide; participation in international evaluation panels worldwide (EU-ERC; Academy of Finland; FWO; NRG; NOW; ESF, etc.); leadership roles in national and international societies such as Portuguese Association of Operational Research (APDIO), European Association of Operational Research Societies (EURO), International Working Groups (EURO Working Group in Sustainable Supply Chains); awarded recognitions to three OpLog members as being within the 12 Best Young Women working in Operations Research (WISDOM Forum - EURO Society); awarded

### Methods

Single and Multi-objective Optimization  
Stochastic and Robust Optimization  
Case-Study Analysis and Action Research  
Data Analytics and Forecasting  
Environmental Life Cycle Assessment

### Highlights

Operational Research based tools to provide effective decision-support in operations and supply chain management.

Develop studies targeting sustainability in operations and supply chains.

Production of diversified, high-quality research with strong academic and societal relevance.

Active collaboration with international research institutions across multiple countries and domains.

Strong partnerships with industry, translating research into actionable solutions and innovation.

the "Best EJOR Paper 2023" in the category of Innovative Applications in Operational Research; and the "Best Process System Engineering Paper 2024" of the Portuguese Operations Research Portuguese Society; organization of the 5th international Health Care Systems Engineering conference in 2023 with over 40 participants and 15 healthcare practitioners; 3) being national service providers for industry, through research-driven projects funded by industry partners, resulting in novel, actionable insights for both research and practice - such as the Valorpneu App, which uses optimization models for network design to help Valorpneu, a non-profit organization managing used tire collection, assess current logistics mileage and identify optimal collection center locations to minimize travel distance and CO<sub>2</sub> emissions; 4) being very active in outreach activities(e.g. first time at the European Research Night 2023 with the hands-on activity "How to Manage the Chocolate Supply Chain"); 5) inauguration of the new Laboratory for Research, Teaching and Societal Impact for Logistics and Operations, LOG.lab, in direct collaboration with a Portuguese retailer company.



## Rui Baptista



Rui Baptista is Full Professor in Entrepreneurship and Innovation at Instituto Superior Técnico (IST). Previous academic posts include Carnegie Mellon University, Indiana University, Brunel Business School, and the Max Planck Institute. He is Editor of Small Business Economics, Associate Editor of the Journal of Small Business Management, and member of the Editorial Board of Eurasian Business Review.



The Strategy, Entrepreneurship and Innovation (SEI) branch of CEGIST conducts applied research in topics related with entrepreneurship, corporate strategy, technology and innovation, market research, and their relationship with industry dynamics, labor markets, and economic development. Furthermore, we address firms' decisions and government policies on sustainable and competitive practices and technologies, with an emphasis on healthcare and the environment.

Our research programs use quantitative empirical methods to examine the impacts of technological change, human capital, firms' decisions, and government policies on issues such as entrepreneurial success, competitiveness and internationalization, productivity and wages, industry evolution, labor markets, and regional development. We aim to offer new insights into the roles played by technology, knowledge and human resources in promoting sustainability, employment, and the formation of innovative firms and competitive regions, contributing to the formulation and assessment of policies in industry, science, the environment, healthcare, and higher education.

## Achievements

In the 2023-24 period, researchers in the SEI area published over two dozen articles in international peer reviewed journals indexed in Clarivate Web of Science and Scopus, many of them in the first quartile Impact Factor/ CiteScore and presented at multiple research conferences and seminars. Researchers in the area received, managed, and completed several projects awarded competitively in topics such as the impact of AI and digitalization on employment and productivity; the impact of ageing and firm demographics on entrepreneurship; and the socio-economic and equity impacts of the EU Emissions Trading System. SEI's research on these topics has received funding from both public and private sources, including FCT and Fundação Francisco Manuel dos Santos.

## Methods

Advanced econometrics using micro and macro data  
Game theory and experimental economics  
Qualitative-comparative analysis using fuzzy sets  
Qualitative methods and case studies

## Highlights

- Diversified high-quality research.
- Public policy implications.
- Advanced training and supervision of multiple research students.
- Collaboration with a variety of international research partners.

Throughout this period, SEI researchers played important roles as editors and reviewers of international academic journals, as well as leadership roles in professional and academic associations – for instance, Eduardo Costa was president of the Portuguese Association of Health Economics (APES) in 2023-24.

SEI researchers also played important expert roles in government policy and business strategy, including production of policy paper briefs on the impact of AI; digitalization, and routinization on occupations and employment; consultancy activity on firms' pro- and anti-competitive behaviors; and membership of the Health Technology Assessment Commission and the National Commission for Reference Centers in the NHS.

Outreach activities included numerous media appearances and newspaper articles communicating about the impact of AI and automation on employment and productivity; efficiency and sustainability of public health care spending; energy access, decarbonization, and eco-innovation; as well as contributions to institutional blogs, newsletters, and bulletins.

# SUSTAINS SUSTainable solutions and Assessment for cIrcular ecoNomy Systems



## Ana Isabel Carvalho



Ana Isabel Carvalho is Associate Professor at Instituto Superior Técnico – University of Lisbon. Coordinator of the BSc and MSc of Environmental Engineering of University of Lisbon and University of Shanghai and Co-founder of Social Innovation Lab at Técnico.



SUSTAINS is a branch of CEGIST dedicated to research on sustainability practices in a circular economy perspective and sustainability assessment tools, conducting theoretical and practical research in three main topics: 1) Developing sustainable operations and supply chains solutions towards circular economy systems; 2) Economic, Environmental and Social evaluation through Life Cycle Assessment methodologies; and 3) Development of decision support tools for sustainability implementation and monitoring. We see our role in developing theory, models and tools, which help the diagnosis of current activities, propose more sustainable solutions in a long run and assess the sustainability improvements across time. We conduct participatory action research, and use qualitative and quantitative approaches, to promote the aforementioned research.

## Achievements

In 2023-2024 the PI of SUSTAINS has been nominated as Portuguese representative on the Circularity Working Group that advises on EU policy regarding Critical Raw Materials. SUSTAINS started the coordination (in collaboration with CERENA) of the ISLANDS Atlantic implementation phase (2,2M\$ financed by GEF and managed by United Nations Environment Programme: UNEP) being responsible to create circular economy systems in a sustainable life cycle management in Guinea Bissau, São Tomé and Príncipe and Cabo Verde for Waste of Electric and Electronic Equipment and end of life vehicles. SUSTAINS has participated in seven European Projects, being responsible for the Social Life Cycle Assessment (LCA) of the projects and support the Environmental LCA through a strong collaboration with ARDITEC, which is an association that targets sustainable development, protection & conservation of our cultural heritage, and social & societal responsibility (Examples of projects: Novum: Production of new cellulose based materials, Aquabioprofit: Circular economy systems for valorization of aquaculture waste and Lignicoat- Development of new bio-based coatings). SUSTAINS joined the FCT-funded BioCFiber project, being responsible for the sustainability assessment of the new bio-based carbon fibers developed in the project. SUSTAINS also coordinated a project with a coat painting

## Methods

[Circular Economy Business models](#)  
[Case-Study Analysis and Action Research](#)  
[Life Cycle Costing](#)  
[Environmental Life Cycle Assessment](#)  
[Social Life Cycle Assessment](#)

## Highlights

Ana Carvalho has been nominated as Portuguese representative on the Circularity Working Group that advises on EU policy regarding Critical Raw Materials.

Coordination of a 2,2M\$ project on implementation of circularity systems for WEEE and ELV in Atlantic Islands (financed by GEF and implemented by UNEP).

Technological development of a recycling machine for community support in increasing recycling.

Participatory methodologies and Life Cycle Assessment methods have been applied has main methodologies in many European and Industrial projects.

Outreach activities about recycling with the creation of a recycling machine and activities in schools and open days.

company SIKA, where they have performed the LCA of new materials. During this period SUSTAINS has coordinated a project financed by the municipality of Oeiras to develop a recycling machine. The machine involves new technologies for the identification of residues and an interaction with an app with gamification to promote people living in Oeiras to increase recyclability. This project has involved students from Técnico, through the collaboration with Junitec, and alumni with a collaboration of a Spin-Off of Técnico called Trash4Goods. SUSTAINS is co-responsible for the Social Innovation Lab (SILAB@Tecnico) and did outreach activities about recycling in schools and open days and the “Sustainability Dilemmas” Game at the European Researchers’ Night. Several publications in top journals have been published and participation in conferences have been performed, some presentations were invited keynotes. Also, SUSTAINS has participated in Ph.D. examination committees and in national and international evaluation panels worldwide.

# Education



One of CEGIST's main vehicles for knowledge transfer to society is through higher education. Our researchers have substantial experience in advanced training and active coordination and participation, both in teaching and in supervising students, in several MSc and PhD Programs offered by IST. All programs are multidisciplinary in nature and focused on technology, and provide students with knowledge in a wide range of academic fields.



## PhD Programs

### PhD Program in Engineering and Management

The PhD Program in Engineering and Management equips students with the mastery of a variety of methods within the field of Management Science, across a broad range of themes. The approaches adopted are applicable to decision and analysis problems in the fields of business management, public policy, and wherever the interaction between technology, economy and society is required. Graduates combine technological knowledge, management scientific methods, and organizational factors, and play an increasingly important role in business development both in the industry and services, government, and produce independent scientific research with international impact.

### PhD Program in Engineering and Public Policy

The PhD program in Engineering and Public Policy prepares students to develop research in public policy and management of technology by addressing real world issues where technology, business and legal aspects are equally important. This program focuses on networked infrastructures and offers specializations in telecom policy and energy policy. It also provides strong preparation in decision analysis applied to real world problems. The program trains public policy analysts able to tackle complex, ill-defined and unstructured, real world problems of large scale and to develop information and knowledge to effective manage such systems.



## MSc Programs

### Master's in Industrial Engineering and Management — MEGI

MEGI graduates are engineers with an interdisciplinary vision of business problems, with a solid background in the basic sciences, fundamental technologies, economics and management. The strong interdisciplinary component allows future masters to apply their knowledge to problem solving, even in new or unfamiliar situations, evidence of a professional systems approach integrating scientific, technological and management knowledge. The skills acquired in the MEGI allow engineers to collect, select and interpret relevant information to evaluate solutions as well as justify their proposed solutions. The graduates develop skills for a professional intervention in a wide scope of organizations, whether in the industry, the services or in research.

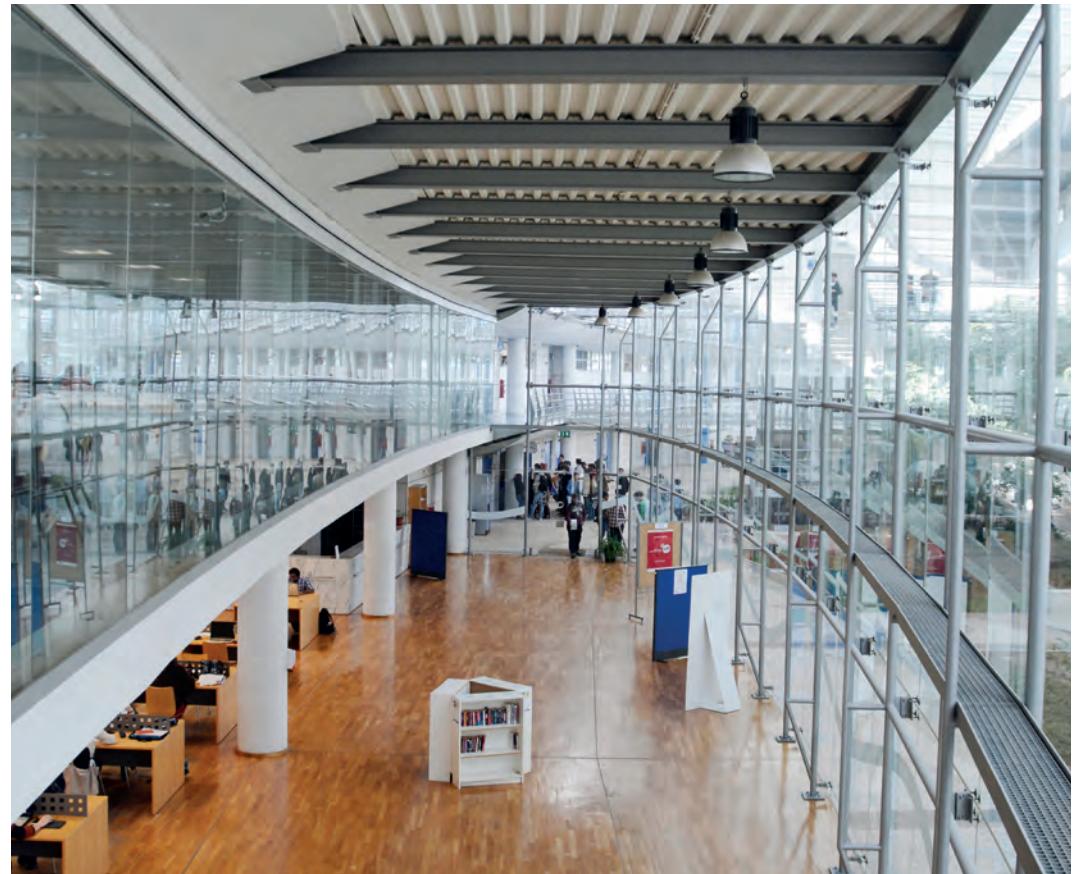
### Master's in Biomedical Engineering — MEBIOM

Biomedical Engineering (EBM) is an engineering area where the theoretical and experimental tools of engineering are used to analyze and solve the complex problems of health, with emphasis on applications in medicine, biology, psychology and even social Sciences. The typical problems addressed in this course are as varied and comprehensive as cell movement, nervous system physiology and how its electrical and metabolic activity can be observed and measured, mechanisms of muscle contraction, biocompatibility of materials and how they can be used in implant design, genetic engineering and tissue regeneration, reconstruction of medical and biological imaging, paradigm design and data analysis in neurosciences and the manipulation of sensitive medical data in databases used in management of hospital units and in decision support problems.

## Master's in Engineering and Management of Innovation and Entrepreneurship — MEGIE

The Masters in Engineering and Management of Innovation and Entrepreneurship (MEGIE) main objective is to train qualified professionals and equip them with tools in innovation management, design thinking and development of new products and services, entrepreneurship and commercialization of technology, and multi-level technological and sectoral policies, contributing to the formulation and implementation of innovative business

strategies and public policies, as well as the creation of new technology-based companies. MEGIE intends to train human resources that, positioned in industry and services, public institutions, universities, R&D units, organizations dedicated to the commercialization and transfer of technology, or in other areas of the Scientific and Technological System, can contribute to enhance the role played by Science and Technology in promoting business competitiveness and employment, as well as sustainable and socially responsible economic development.



## Master's in Energy Engineering and Management — MEGE

The MSc in Energy Engineering and Management offers a cross-cutting program in the energy field, combining technical specialized knowledge, grounded on a solid scientific basis, with a broader perspective of the interactions with economics, environment and innovation in the energy area. The Master in Energy Engineering and Management aims at training the new generation of skilled professionals to be active in the energy sector. With this goal, the program offers cross training in the energy field, ensuring specialized technical knowledge, grounded on a solid scientific basis, complemented with a broad knowledge in the areas of economics, environment and innovation. The Master In Energy and Management combines the academic experience and the industry connections of the various departments

**104** Master's in Industrial Engineering and Management — MEGI

**22** Master's in Biomedical Engineering — MEBIOM

**18** Master's in Engineering and Management of Innovation and Entrepreneurship — MEGIE

**41** Others Master's in Energy Engineering and Management — MEGE

Number of MSc Dissertations supervised by CEGIST's researchers in 2023 and 2024

at IST with the different international partnerships of prestigious European schools in which IST participates to offer a multidisciplinary program in the field of energy.

# Seminars



CEGIST regularly promotes the dissemination of scientific knowledge from its members and guests, in areas relevant to its research, through the initiative CEGIST Seminar Series. CEGIST also launched the Brown Bag Seminars initiative: meetings with doctoral students, organized by themselves, to discuss and develop ideas that can contribute to their research path and career development.



## CEGIST Seminar Series

Speaker: Paulo Abreu (CEGIST), [Data-Driven Forecasting for Operational Planning of Emergency Medical Services](#), January 26th

Speaker: Valentina Bonomi (University of Brescia, Italy), [Fairness in Healthcare: Investigating the Impact of Conflicting Stakeholder's Goals Through Multi-Objective Formulations](#), February 10th

Speaker: Robin Buter (University of Twente), [Strategic Placement of Public-Access Defibrillators for Effective Response to Cardiac Arrests](#), March 17th

Speaker: Sérgio Batista (New York University Abu Dhabi), [On the Modeling of Urban Congestion Using Aggregated Models Based on the Macroscopic Fundamental Diagram](#), May 5th

Speaker: José Luis García Lapresta (PRESAD, Universidad de Valladolid), [Aggregating Linguistic Assessments in Multi-Criteria Decision-Making](#), May 9th

Speaker: Alice Aubert (Zurich University of Applied Sciences), [Engaging Citizens in OR-Supported Decision-Making With Online Preference Elicitation Tools](#), May 26th

Speaker: José Palma-Oliveira (Faculdade de Psicologia, Universidade de Lisboa), [The History of Limited Rationality of Waste Management in Portugal: or how the 'Italianization' \(exporting\) is near](#), June 23rd

Speaker: Martin Murmann (BFH, Switzerland), [Retaining Employees when Startups Professionalize](#), July 7th

Speaker: Marcos Estellita Lins (UFRJ, Brazil), [Structuring Complex Social Problems – Theory of Mind, Metacognitive Maps, and Decision Support Models](#), July 24th

Speaker: Ana Lanham (DEB-IST and iBB), [Opportunities for Management and Engineering Cross-Links in Biological Wastewater Treatment and Resource Recovery Systems](#), October 27th

Speaker: Diogo Gonçalves (CEGIST), [Behavioral Science and Nudging as a Tool for Organizational Effectiveness](#), November 24th



## CEGIST Seminar Series

Speaker: Elisete Zagheni (Joinville School of Technology, UFSC, Brazil), [Distribution Logistics and the Last Mile](#), January 22nd

Speaker: Nazanin Nami (Alliance Manchester Business School), [Circular Economy Application in Pharmaceutical Supply Chains in the UK: A Holistic Evolutionary Game Approach](#), February 9th

Speaker: Cádia Cerqueira (NIPE/UMinho), [Digitalization: The Edge of First Movers](#), February 23rd

## Brown Bag Seminars

Career Opportunities in Academia and Industry, February 9th

CEGIST Research Groups | Brainstorming Session, April 27th

Session with Students from Università degli Studi di Firenze, May 29th

PhD Pitch Sessions, July 27th

Creation of a Welcome Guide for PhD students in CEGIST | Discussion and Brainstorming, November 15th

Speaker: Petr Ekel (PUC-MG, Brazil), [Multicriteria Decision Making Under Conditions of Uncertainty and Its Applications](#), March 8th

Speaker: Celso Matos (CEGIST), [Marketing and Sustainability: Current Research and Opportunities](#), April 5th

Speaker: Filippo Visintin (University of Florence), [Closing the Loop: Circular Business Models, Sustainable-Oriented Innovation, and Transformative Supply Chains in the Textile and Fashion Industry](#), April 10th

Speaker: Eduardo Costa (CEGIST), [Beyond Branded vs. Generic: Exploring the role of pharmacies on Out-of-Pocket payments in Generic Drug Markets](#), May 17th



Speaker: Dirk Franco (UHasselt), **Energy Transition, a Holistic Approach: A Case Study of a New Type of Energy Efficiency Services**, May 20th

Speaker: Lea Franze (FernUniversität Hagen), **Optimal Design of Socially Sustainable Raw Material Supply Chains**, June 7th

Speaker: Fernando Viana (University of Fortaleza), **Transition to a Circular Economy: Paths for the European Plastic Industry Supply Chain, with Insights from Portugal**, June 20th

Speaker: Effie Kesiou (Leeds University Business School), **Are There Synergies or Trade-Offs Between the Net Zero and Digital Innovation Transitions? Evidence From UK SMEs**, June 28th

Speaker: Carina Gargalo (PROSYS), **LCA in Action at PROSYS: From Waste to Value**, July 2nd

Speaker: Srinivas Talluri (Michigan State University), **Meet the Editor of Decision Sciences Journal – Session with Prof. Srinivas Talluri**, July 12th

Speaker: Bartosz Sawik (AGH University of Krakow), **Optimization Approach for Assignment of Robots for Elderly Care**, September 13th

Speaker: Diana Jorge (CEGIST), **Optimizing Towards Sustainable Last-Mile Logistics**, October 11th

Speaker: Valentina Bonomi (CEGIST), **Reimagining Last-Mile Delivery: Solutions for Superior Customer Experience and Sustainability**, November 8th

### Brown Bag Seminars

**Discussing Academia and Industry Career Opportunities with Duarte Dinis and Miguel Vieira**, March 22nd

**Welcoming new PhD students | A tour of your PhD**, October 8th

# Community and Outreach

2023

[Newsletter article] Bruno Gonçalves and Miguel Vieira, **O Desafio na Gestão Industrial**. Boletim APDIO n.º 67, Dec 2022/Jan 2023

[Newsletter article] Daniel Santos, Ana Barbosa-Póvoa, Mariana Oliveira, Maria Meneses, Paulo Abreu, Maria Lopes, **Contribuições para a melhoria dos sistemas de saúde explorando técnicas de Investigação Operacional**. Boletim APDIO n.º 67, Dec 2022/Jan 2023



[Workshop] Mariana Santa-Marta, **How to approach the Section 3- Implementation of RIA/IAs Horizon Europe proposals?**, Ciclo de Formação Horizonte Europa 1.º ed., IST, Lisbon, January 21

[Workshop] Mariana Santa-Marta, **Career Perspectives for Public Health Physicians – Career development and Opportunities**, INSPIRA, Associação Nacional dos Médicos de Saúde Pública (ANMSP), Porto, February 2

[Webinar] Ana Vieira | **How can policymakers incorporate uncertainty (as modelled through foresight) into policy evaluation?**, EUPHA Webinars, about Contemporary Public Health Challenges and the promotion of the field of Foresight within Public Health, February 22

[News | Expresso Newspaper] Mónica Oliveira | PHSSR Report, Feb 28 <https://expresso.pt/iniciativasprodutos/projetos-expresso/2023-02-24-Da-teoria-a-pratica-peritos-juntam-se-para-debater-o-futuro-da-saude-em-Portugal-0781cc82>



■ [Blog article] Margarida Catalão-Lopes, **“E as elasticidades? Impactos (assimétricos) de alterações no IVA”**, Técnico+ February 23 <https://blog.tecnicomais.pt/e-as-elasticidades-impactos-assim%C3%A9tricos-de-altera%C3%A7%C3%A7%C3%B5es-no-iva>

■ [Activity] Participation in the event GIRLSTEAM at Taguspark, with the activity **“How to Manage the Chocolate Supply Chain”**. April 27



■ [Activity] Técnico Open Day | CEGIST participated with four activities: **“How to Manage the Chocolate Supply Chain”**, **“How to minimize waste when cutting wood”**, **“How to build a Tangram and use it to solve an Operations Research problem”** and **“How does the human mind work? Cognitive biases in our decisions”**. May 20



■ [Seminar] Mónica Oliveira, Invited Seminar: MSc in Pharmaceutical Sciences, Presentation: **Health based upon evidence: Decision support models and participatory approaches**, Faculdade de Farmácia da Universidade de Lisboa, May

■ [Seminar] Tânia Ramos, **A “engenharia” da Gestão de Projetos**, II Workshop de Gestão de Projetos Científicos em Saúde, Instituto de Medicina Preventiva e Saúde Pública, May 23



■ [Seminar] Mónica Oliveira, Course **“Health Outcomes Research”**, ENSP, Invited Seminar MULTIPLE-CRITERIA DECISION ANALYSIS (MCDA) AND POTENTIAL IMPACT IN HTA, June

■ [News | Expresso Newspaper] Mónica Oliveira | **PHSSR Report**, June 20 <https://expresso.pt/iniciativasprodutos/projetos-expresso/2023-06-20-Alvaro-Beleza-O-maior-problema-da-saude-em-Portugal-e-o-acesso-aos-cuidados-d478fb9a>

■ [Newsletter article] Cátia Silva, **Integração de estratégias de monetização no projeto e planeamento de cadeias de abastecimento sustentáveis**. Boletim APDIO n.º 68, June 2023

■ [Workshop] Mariana Santa-Marta, **“How to approach the Section 3- Implementation of RIA/IAs Horizon Europe proposals?”**, Ciclo de Formação Horizonte Europa 2ª ed., IST, Lisbon, June 6

■ [Newspaper article] Miguel Alves Pereira, **“Números, para que vos quero?”**, Público, June 10 <https://www.publico.pt/2023/06/10/p3/cronica/numeros-quero-2049013>

■ [Activity] Participation in Verão ULisboa - Taguspark with the activity **“Beer Game - Supply Chain Management Game”**. Verão ULisboa is an initiative of the University of Lisbon targeting high-school students (10th to 12th grades). July 10 - 14



■ [Seminar] Ana Paula Barbosa Póvoa | **“Combining excellent teaching and research - virtuous synergies”**; Program Shaping the Future for new Faculty members at IST, Lisbon. September 4

■ [Seminar] Tânia Ramos | **“The impact of a sabbatical abroad”**; Program Shaping the Future for new Faculty members at IST, Lisbon. September 4

■ [Round table] Mónica Oliveira, participant in **“O Papel do Engenheiro Biomédico em Ambiente hospitalar”**, Associação Portuguesa para o Desenvolvimento Hospitalar (APDH), em parceria com a Associação Nacional de Estudantes de Engenharia Biomédica (ANEEB), September 19



■ [Round table] Mónica Oliveira, participant in **“Rethinking the Innovation Pathway”**, Global Health Forum, Cascais, September 29

■ [Activity] Participation in the European Researchers' Night, at the Museum of Natural History and Science, with the activities **“How to Manage the Chocolate Supply Chain”** and **“How does the human mind work? Cognitive biases in our decisions”**. September 29



**[Seminar]** Mariana Santa-Marta, Invited Speaker, Workshop on financing research projects, **“How to survive in the competitive research financing ecosystem”**, PMPIC - Promotion of Best Practices in Scientific Research, Cape Verde, October 2-7

**[Workshop]** Mariana Santa-Marta, Trainer at the Scientific Grant Writing Workshop, **1st Workshop on financing research projects**, PMPIC - Promotion of Best Practices in Scientific Research, Cape Verde, October 2-7

**[Newspaper article]** Cátia Silva, **“Doutoramento no Técnico: a ousadia de sonhar mais alto”**, ionline, October 17 [https://ionline.sapo.pt/artigo/807452/doutoramento-no-tecnico-a-ousadia-de-sonhar-mais-alto?seccao=Opiniao\\_i](https://ionline.sapo.pt/artigo/807452/doutoramento-no-tecnico-a-ousadia-de-sonhar-mais-alto?seccao=Opiniao_i)



**[Activity]** Participation at the X Mathematics Fair with the activity **“How to minimize waste when cutting wood”**. November 10

**[Activity]** 23rd anniversary of IST TagusPark Campus | Open Day, Oeiras. Participation with the activities **“How to minimize waste when cutting wood”** and **“How to build a Tangram and**

**use it to solve an Operations Research problem”**, November 11



**[Podcast]** **“Bill Williams from IST Portugal on Research”** | Bill Williams participated in the European Engineering Educators Podcast #17, Season 3, Ep. 3, Series: European Engineering Educators, Host: European Society for Engineering Education (SEFI), November 20 [https://shows.acast.com/european-engineering-educators/episodes/17-bill-williams-from-ips-portugal-on-research?sender\\_campaign=av72K0&sender\\_ctype=email&sender\\_customer=xrmR8P](https://shows.acast.com/european-engineering-educators/episodes/17-bill-williams-from-ips-portugal-on-research?sender_campaign=av72K0&sender_ctype=email&sender_customer=xrmR8P)

**[Newspaper article]** Miguel Alves Pereira, **“Urgências, consultas, e cirurgias: o drama holístico da ineficiência hospitalar”**, Público, December 11 <https://www.publico.pt/2023/12/11/p3/cronica/urgencias-consultas-cirurgias-drama-holistico-ineficiencia-hospitalar-2072869>



2024

**[Book]** António Alvarenga (2024), **Como colocar as coisas no seu devido lugar errado**. Ed. Poets & Painters. ISBN: 978-989-33-6974-6

**[Newspaper articles]** Eduardo Costa, Coverage on the report on the **Sustainability of ADSE** at Expresso (january 3rd, 2024), Público (january 24th, 2024), Eco (january 24th, 2024), Jornal de Negócios (january 24th, 2024). Available at: <https://expresso.pt/economia/administracao-publica/2024/01/03-Estudo-de-sustentabilidade-da-ADSE-ja-foi-entregue-ao-Governo-f6b5575d> <https://www.publico.pt/2024/01/24/economia/noticia/adse-nao-entrara-defice-inicio-proxima-decada-2077978> <https://eco.sapo.pt/2024/01/24/adse-entra-em-defice-em-2030-e-almofada-so-da-para-mais-11-anos/> <https://www.jornaldenegocios.pt/economia/saude/detalhe/estudo-da-intervalo-de-mais-de-20-anos-para-primeiro-defice-da-adse>



**[Others]** Ana Barbosa-Póvoa, **Driving Supply Chain Sustainability: The Crucial Role of Engineering and Management to Achieve Sustainable Practices**, Master Talk, IST, Lisbon, Portugal. January 18 2024

**[Newspaper articles]** Eduardo Costa, **Estudo conclui que médicos valorizam mais autonomia e formação do que salário** (february 15th, 2024). Available at: <https://expresso.pt/economia/trabalho/2024-02-15-Estudo-conclui-que-medicos-valorizam-mais-autonomia-e-formacao-do-que-salario-463c26d3>

**[Newspaper articles]** Eduardo Costa, **Dual practice in the Portuguese NHS**, (printed edition, february 22)

**[TV interview]** Eduardo Costa, Interview at “Fact Check” program from S+ TV Channel, **Health Topics** (10.30pm february 12th)

**[TV interview]** Eduardo Costa, Interview at Porto Canal, **Sustainability of Dialysis Financing Models**, (march 7th, Edição das 8h)



**[TV interview]** Eduardo Costa, Interview at “Checkup” program from S+ TV Channel, **Current Health Policy Topics** (11pm february 9th)

■ [Newspaper articles] Eduardo Costa, Opinion article at Saúde Online, **Sustainability of dialysis financing models**. (March 18th, 2024). Available at: [https://www.sapo.pt/noticias/saude/faz-sentido-repensar-o-financiamento-doda\\_65f81f41e1eaab4a84f651a6](https://www.sapo.pt/noticias/saude/faz-sentido-repensar-o-financiamento-doda_65f81f41e1eaab4a84f651a6)

■ [Others] Eduardo Costa, Round table, **The relation of the Public and Private sector in healthcare**. Economia Viva 2024 - Nova School of Business and Economics, Carcavelos, Portugal. 2024, April 3.



■ [Activity | Fair] Bruna Mota, Mariana Cunha, Vânia Veloso, **Chocolate Tablet Supply Chain Management**. Técnico Open Day, Science Fair. (2024, April 20)

■ [Activity | Fair] Miguel Alves Pereira, **Efficiency league**. Técnico Open Day, Science Fair. (2024, April 20)

■ Rafael Miranda, Edgar Mascarenhas, Ana Flávia Santos, **Cognitive Biases**. Técnico Open Day, Science Fair. (2024, April 20)

■ [Activity | Fair] Bruna Mota, **Chocolate Tablet Supply Chain Management**. GIRLSTEAM, Oeiras. (2024, April 24)



■ [Newspaper articles] Eduardo Costa, Interview at Antena 1, **Recent crisis in the NHS Executive Board** (Noticiário Nacional 11h, april 24th)

■ [Newspaper articles] Eduardo Costa, Analysis at Jornal de Notícias, **The evolution of the health sector 50 years after democracy in Portugal** (printed edition, april 25th)

■ [Others] Mónica Oliveira and Carlos Bana e Costa, **Fostering participation and knowledge construction processes in real settings through decision analysis and collaborative value modeling**, plan APP presentation, Lisbon, May 2024

■ [Newspaper articles] Eduardo Costa, Analysis at Público, **The impact of No Shows in NHS hospital appointments** (printed edition, May 13th)

■ [Newsletter] Miguel Alves Pereira, **Multi-criteria decision-aiding for public hospitals: The role of interactions among pairs of access and quality criteria**. EWG-MCDA Newsletter, page 17. (2024, Spring).



■ [Podcast] "90 Seconds of Science/90 Segundos de Ciência" Hugo Castro Silva **"Which Jobs are most vulnerable to the technological revolution"** (June 28 2024) <https://www.90segundosdecienca.pt/episodes/ep-1820-hugo-silva/>

■ [Newspaper articles] Eduardo Costa, Coverage at Health News, **Participation of "Innovation Talks" from Plataforma Saúde em Diálogo** (June 20th)

■ [Bulletin] Miguel Alves Pereira, **Driving the efficient future of the SNS**. APDIO Bulletin, pages 13-14. (2024, July)

■ [Activity] Tânia Ramos, **Beer Game - The Supply Chain Management Game**. ULisboa Summer Camp - Taguspark (1st - 5th July, 2024).

■ [Newsletter] Inês Carrilho-Nunes, (2024). **Can Energy Accessibility Reduce Inequality and Foster Innovation?** International Association for Energy Economics (IAEE) Newsletter, Energy Forum, 3rd/4th Quarter 2024, 10-12. ISSN 1944-3188. Available at: <https://www.iaee.org/newsletter/issue/118>

■ [Activity] Susana Relvas and Tânia Ramos, **Warehouse Management@LOG.lab**. ULisboa Summer Camp - Taguspark (8th - 12th July, 2024).



■ [Newspaper articles] Eduardo Costa, Analysis at Público, **Private health insurance and out-of-pocket expenditures** (printed edition, July 8th)

■ [TV interview] Eduardo Costa, Interview at RTP1, **Private health insurance and out-of-pocket expenditures** (Telejornal 8pm July 8th)

■ [TV interview] Eduardo Costa, Interview at RTP3, **Population ageing and health expenditures** (18/20 news July 12th)

■ [TV interview] Eduardo Costa, Interview at "Checkup" program from S+ TV Channel, **Current health policy topics** (11pm July 12th)

■ [TV interview] Eduardo Costa, Interview at NOW with Rui Rio and Pedro Escada, **The challenges faced by the NHS** (10pm July 24th)

■ [Activity] Miguel Alves Pereira, **Efficiency league**. APIST Summer Camp. (2024, September 6th)

■ [Activity] Erika Celestino and Joana Simões, **Separate to recycle**. APIST Summer Camp. (2024, September 6th)



■ [Activity] Daniel Santos, **How to Build a Tangram**. APIST Summer Camp. (2024, September 6th)

■ [Others] Eduardo Costa, Round table at APIFARMA Conference (Lisbon, Portugal): **“Financing models for pharmaceutical drugs in the NHS”** (September 25th)

■ [Activity | Fair] Celso Matos, Participation in the European Researchers' Night, at the Museum of Natural History and Science, with the activity **“The Dilemmas of Sustainability/Os Dilemas da Sustentabilidade”** September 27 2024, Lisbon, Portugal

■ [Newspaper articles] Eduardo Costa, Analysis at Observador, **Prevention strategies for cardiovascular diseases** (October 31st)

■ [Activity] João Almeida, Participation at the VALSAMAT 24 (Mathematics Fair at Colégio Valsassina) with the activity **“How to minimize waste when cutting wood”**. November 7 2024



■ [Opinion Article] Ana Barbosa-Póvoa, **Sustainable Supply Chains in Retail: Driving the Future of the Industry, 2050**. BRIEFING

■ [Others] Mónica Oliveira, Grupo de Trabalho para a Avaliação das Necessidades Formativas em Medicina (2024) **Relatório Avaliação das Necessidades Formativas em Medicina**, Março 2024 [https://wwwcdn.dges.gov.pt/sites/default/files/relatorio\\_do\\_grupo\\_de\\_trabalho\\_para\\_a\\_avaliacao\\_das\\_necessidades\\_formativas\\_em\\_medicina.pdf](https://wwwcdn.dges.gov.pt/sites/default/files/relatorio_do_grupo_de_trabalho_para_a_avaliacao_das_necessidades_formativas_em_medicina.pdf) Ministério da Saúde, e Ministério da Ciência, Tecnologia e Ensino Superior

■ [Others] Mónica Oliveira, et al. (2024) **Estratégia Nacional para a Medicina Genómica PT\_MedGen**, Novembro 2024, Relatório, Responsável pelo Grupo de Trabalho Economia da Saúde.

# External Competitive Funding

## A Period of Firsts and Strategic Expansion

■ 2023-2024 marked a transformational period in CEGIST's journey toward strengthening its position in international competitive funding. Through strategic partnerships, internal capacity building, and a growing culture of ambition, this period introduced several "firsts" that set the stage for long-term growth.

### Emerging Culture of High-Impact Individual Applications

For the first time, CEGIST researchers submitted proposals to some of the most competitive European funding schemes:

■ Three ERC Starting Grant proposals were submitted — a milestone that signals growing institutional alignment with frontier research agendas.

■ One out of two MSCA Postdoctoral Fellowship proposals, submitted under the 2024 call, was successfully funded and will start in 2025, establishing a foundation for future MSCA participation.

### New Leadership Roles in Collaborative Projects

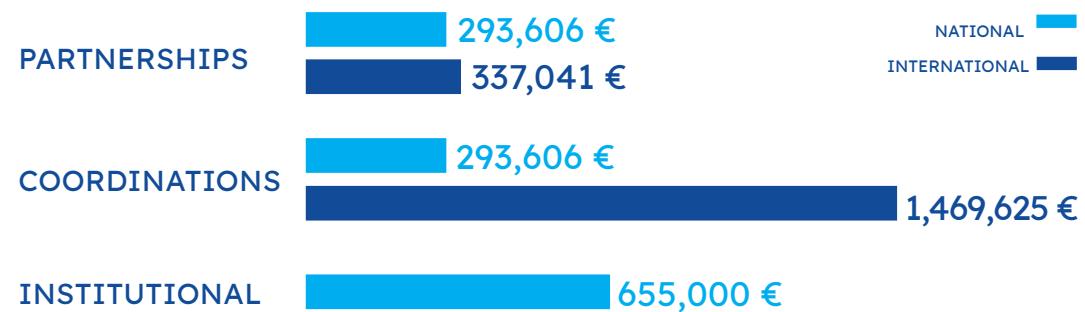
2023-2024 also saw CEGIST step into new leadership roles within international collaborations:

■ First Horizon Europe Cluster 2 project coordinated by CERENA in partnership with CEGIST successfully secured and set to begin in 2025, marking a significant step in reinforcing our contribution to social sciences and humanities research.

■ A major coordination funded by UNEP was secured, enhancing global visibility and thematic reach.

■ CEGIST also submitted its first EIC Pathfinder Open and COST Action as coordinator. Both received excellent evaluations, underscoring the potential for future success in these schemes.

CEGIST research is supported by a growing range of national and international competitive funding sources, as well as industry and public contracts that, while not competitive, align with our mission and goals. During 2023–2024, CEGIST secured and implemented 17 competitively funded projects, including 2 institutional Core Support, 7 coordinated by CEGIST researchers, and 8 partnerships. In addition, 6 industry and public contracts were signed in the same period. The 7 coordinated projects reflecting our expanding leadership in research across various fields are highlighted below.



Total secured funding of active projects

## European Commission (EC)

### Sustainable Intelligent Management of Indoor Air Quality for the Culture and Creative Industries (SIMIACCI)

SIMIACCI supports the climate transition of Cultural and Creative Industries by developing energy-efficient indoor air quality (IAQ) solutions for galleries, libraries, archives, and museums (GLAMs). It integrates advanced technologies—like MOFs and predictive modelling—to cut energy use by up to 50% and extend artifact conservation. Life Cycle Assessment (LCA) will evaluate the environmental sustainability of the solutions. Twenty prototypes will be demonstrated in 6 GLAMs, and a dedicated SIMIACCI label will support broader sectoral adoption.

HORIZON; CL2; GA:101178095

PI: Moisés Pinto (CERENA)

& Ana Carvalho (CEGIST)

Coordinator



### Biomimicry and carbon adsorbent ecomaterials for a climate-neutral economy (CSTONE)

The CSTO2NE project harnesses natural processes to extract carbon dioxide, developing materials that absorb atmospheric carbon for recycling with a net-positive impact. It fosters interdisciplinary scientific collaboration, a shared culture of innovation, and the co-creation of ideas and entrepreneurial ventures to advance ecological technologies and materials for sustainable cities.

HORIZON; MSCA-SE; GA:101086302

PI: Dina Pereira (CEGIST)

Coordinator

## United Nations Environment Programme (UNEP)

### ISLANDS - Atlantic Regional Project

ISLANDS strengthens the capacity of government bodies and stakeholders to manage hazardous chemicals and waste. It promotes green public procurement and conducts Life Cycle Assessments in key sectors like electronics, vehicles, agriculture, and tourism. It also designs and implements circular economy logistics for safer waste treatment and resource recovery.

GEF 10848

PI: Ana Carvalho (CEGIST)

Coordinator

## Fundação Francisco Manuel dos Santos

### Digitalisation in the Portuguese Labour Market: Potential Transformative and Destructive Effects

This project studies how digitalisation—especially computerisation and AI—is transforming jobs, occupations, and industries in Portugal, a country with an aging, low-skilled, and low-wage workforce. It aims to understand the specific impacts of these technologies on the labour market and economy.

PI: Rui Baptista (CEGIST)

Coordinator

## Fundação para a Ciência e Tecnologia (FCT)

### Towards a Smart Waste Collection

Route Planning System (WSmart Route+)

WSmart Route+ project studies a new

paradigm on smart waste management where it explores an Engineering Systems approach, that combines data analytics methods with Operational Research techniques to build a tool that can support decision-making in waste management systems. The aim is to improve waste collection operations by supporting the implementation of a smart waste collection based on dynamic routes, as opposed to traditional blind collection based on static routes.

PI: Tânia Ramos (CEGIST)

2022.04180.PTDC

### Challenges for energy access in a decarbonized economy (CHARADE)

CHARADE aims to provide answers and find solutions to the problems associated with energy accessibility, energy poverty, and income inequality by applying econometrics and employing models with a myriad of economic and energy variables. In our models we will consider different panels of countries and regions, to provide a global view of our results, as well as individual countries as case studies to explore local viewpoint of energy accessibility and poverty

PI: Margarida Catalão (CEGIST) & Co-PI: Inês Nunes (CEGIST)

2022.08870.PTDC

### Entrepreneurship, Demographics and Ageing (Age)

Age will conduct research to provide new evidence and clearer insights about the mechanisms through which population ageing affects aggregate entrepreneurship.

PI: Rui Baptista (CEGIST)

EXPL/EGE-ECO/1179/2021

## Industry & Public Contracts

CEGIST researchers actively collaborate with several industries and public institutions. These partnerships resulted in 6 active contracts.

 Agência Portuguesa Do Ambiente (APA)  
**Circular Economy Action Plan for Portugal**

Development of the new Action Plan for Circular Economy. This new Action Plan for Circular Economy aims to create a chain in which everything is transformed, and nothing or little is wasted, maximising the economic value of materials, products and services, thus avoiding the consumption of new raw materials and eliminating waste.

A maximising concept, Circular Economy is based on several «R», such as Reduction, Reuse, Recovery, Recycling... and Social Responsibility.

**PI: Ana Carvalho**

 Instituto de Saúde Baseado na Evidência/SANOFI  
**Consenso sobre Inflamação do Tipo 2 e Gestão de Doentes - Contexto Português (INFLAT2-PT)**

Methodological design approach to the project “Consensus on Type 2 Inflammation and Patient Management – Portuguese Context (INFLAT2-PT)”.

**PI: Mónica Oliveira**

 Association ARDITEC  
**Environmental and Social Life Cycle Assessment**

The objective of this project is to provide supervision of SLCA work, and advisory to Arditec In LCA in general. The support was and will be given to the European project Novum, Aquabioprofit and Lignicoat.

**PI: Ana Carvalho**

 LisbonEconomics  
**Competition Economics and Industrial Economics**

Study in Competition Economics and Industrial Economics for calculating damages in the Portuguese market of several anti-competitive practices.

**PI: Margarida Catalão**

 Câmara Municipal de Oeiras

**Máquina de reciclar**

This project introduces a smart recycling machine using advanced residue identification and an app with gamification to boost recycling in Oeiras. Developed with students from Técnico via Junitec and alumni through the spin-off Trash4Goods, it combines technology and community engagement to increase recyclability and environmental awareness.

**PI: Ana Carvalho**

 Sika

**Análise de Ciclo de Vida de novo revestimento desenvolvido no projeto IPaints**

Model the paint system proposed in the IPaints project from a life cycle analysis perspective and analyze the results of applying the model from two perspectives: i) diagnostic phase, identifying critical processes in environmental terms and proposing recommendations for improvement.

**PI: Ana Carvalho**

## Awards and Distinctions

 2023

 Ana Paula Barbosa-Póvoa listed in the Stanford University's **top 2% scientists** Research Career.

 Ana Paula Barbosa-Póvoa listed in the Stanford University's **top 2% scientists** Researchers 2022.

 Ana Paula Barbosa-Póvoa distinguished with the Outstanding Professor in **Operations Management Award** at the 2023 IEOM Lisbon Awards, 6th European International Conference on Industrial Engineering and Operations Management, Lisbon, July 17-20

 Ana Paula Barbosa-Póvoa received the Award University of Lisbon/Caixa Geral de Depósitos, for **Best Researcher in Management**

 Ana Vieira recognized with an **Honorable Mention** at the 7th edition of the Rui Osório de Castro/Millennium bcp Prize, with the project “All4wish: Participatory Design Of A Video Game To Measure The Impact Of Experiences Of Wishing Realization In Children With Cancer” project.

 Bill Williams received the 2023 **IOEM Global Engineering Education Award** at the 6th European Conference on Industrial Engineering and Operations Management 19 July 2023, Lisbon.

 Bill Williams recognized with the title of **Professor Emeritus** from the Polytechnic Institute of Setúbal (IPS) at the Annual IPS Da , Setúbal, 9 October, 2023

 Carlos A. Bana e Costa, Mónica Duarte Oliveira and Ana Vieira, awarded with the 2023 **Decision Analysis Practice Award**, by the Decision Analysis Society and the Society of Decision Professionals, for the research “Fostering participation and knowledge construction processes in real settings through decision analysis and collaborative value modelling”

 Carlos Bana e Costa listed in the Stanford University's **top 2% scientists** Research Career.

 Dina Pereira and Ana Cristóvão received the **Re-Unita Innovation Prize**, Unita Alliance of Universities

 Dina Pereira and Ana Cristóvão received the **EIC Women Tech EU**, HORIZON-EIE-2022-SCALEUP-02

► Douglas Alem, Hector F. Bonilla-London, Ana Paula Barbosa-Póvoa, Susana Relvas, Deisemara Ferreira and Alfredo Moreno awarded with the “EURO award for the best EJOR paper for Innovative Applications” for the paper “Building disaster preparedness and response capacity in humanitarian supply chains using the Social Vulnerability Index European”, European Journal of Operational Research, 292, 1,250-275, <https://doi.org/10.1016/j.ejor.2020.10.016>

► João Leitão awarded with the **Emerald Award 2023 Literati Outstanding Reviewer** of the Social Responsibility Journal;

**2024**

► Ana Paula Barbosa-Póvoa listed in the Stanford University’s **top 2% scientists** Research Career for the exceptional impact of her long-standing scientific career.

► Ana Paula Barbosa-Póvoa listed in the Stanford University’s **top 2% scientists** Researchers for the year 2024.

► Carlos Bana e Costa listed in the Stanford University’s **top 2% scientists** Research Career for the exceptional impact of his long-standing scientific career.

► Carlos Bana e Costa listed in the Stanford University’s **top 2% scientists** Researchers for the year 2024.

► Inês Marques awarded with the OMEGA **Best Reviewer Award** 2024.

► José Rui Figueira listed in the Stanford

► João Leitão awarded with the **Award Estímulo e Reconhecimento da Internacionalização em Ciências Sociais** (Prémio ERICS) - edição 2023, Instituto de Ciências Sociais, Universidade de Lisboa.

► José Rui Figueira listed in the Stanford University’s **top 2% scientists** Researchers 2022.

► Miguel Alves Pereira awarded with the **Emerald Award 2023 Literati Outstanding Reviewer** of the Journal of Humanities and Applied Social Science.

University’s **top 2% scientists** Researchers for the year 2024.

► Miguel Alves Pereira received the **Best PhD Thesis APDIO IO2024 Award** (best PhD research in the area of Operational Research) for the work “Efficiency and public policy of the Portuguese healthcare sector: A look at the pressing issues”, supervised by José Rui Figueira and Rui Cunha Marques.

► Miguel Vieira, Tania Pinto Varela and Ana Paula Póvoa awarded with The Augusto Queiróz Novais Award at APDIO IO2024 for “**Process Systems Engineering**”, to the work “A two-level optimisation-simulation method for production planning and scheduling: the industrial case of a human-robot collaborative assembly line” (co-authors Samuel Moniz, Pedro Neto and Bruno S. Gonçalves) International Journal of Production Research, 60(9), 2942-2962. <https://doi.org/10.1080/00207543.2021.1906461>

► Rafael Pires Miranda received the ULisboa - redeSAÚDE 2024 prize for **Best Doctoral Work** in the field of Health Systems / Entrepreneurship / Digital Transition

# Team

## Integrated Members



**Ana Vieira**  
Foresight  
Group Decision-Making  
Behavioral Operational Research



**Ana Isabel Carvalho**  
Sustainability Management and Assessment  
Circular Economy  
Life Cycle Assessment



**Ana Barbosa-Póvoa**  
Supply Chain Management  
Operations Research  
Sustainability



**Ana Sara Costa**  
Multiple Criteria Decision Aiding  
Decision Support Systems  
Classification Problems



**Andreia Santos**  
Sustainable supply chain management  
Sustainability assessment  
Life cycle assessment



**António Alvarenga**  
Foresight  
Scenarios  
Strategy



**António Quintino**  
Risk Analysis  
Decision Support Systems  
Operational Research



**António Sérgio Ribeiro**  
Entrepreneurship  
Labour economics  
Sports economics



**Bill Williams**  
Scientometrics  
Inclusion, diversity and equity  
Engineering value creation



**Bruna Mota**  
Supply chain  
Sustainability  
Optimization



**Carlos Bana e Costa**  
Strategic Decision Support  
Process consultation  
Multicriteria Value  
Measurement



**Cátia da Silva**  
Supply chain  
Sustainability  
Risk management



**Isabel João**  
Sustainable Product Design  
Decision Aiding  
Quality Engineering



**João Lourenço**  
Multi-criteria decision analysis  
Portfolio decision analysis  
Decision support systems



**Celso Matos**  
Management  
Marketing  
Sustainable Consumption



**Daniel Santos**  
Integer Programming  
Combinatorial Optimization  
Stochastic Optimization



**José Figueiredo**  
Project Management  
Socio-technical Approaches to  
Systems Design  
Engineering Education Ethics



**José Rui Figueira**  
Multi-Objective Optimization  
Multiple Criteria Decision  
Support  
Decision Support Systems



**Diana Jorge**  
Operations Research  
Metaheuristics  
Logistics



**Dina Batista Pereira**  
Entrepreneurship  
Innovation  
Entrepreneurial Ecosystems



**Margarida Catalão**  
Competition  
Strategy  
Sustainability



**Maria Isabel Pedro**  
Management  
Accounting  
Finance



**Diogo Cunha Ferreira**  
Performance assessment  
Hospitals  
Satisfaction analysis



**Eduardo Costa**  
Health economics  
Applied economics  
Health policy



**Miguel Alves Pereira**  
Management science  
Efficiency measurement  
Decision analysis



**Mónica Oliveira**  
Decision Sciences  
Health Care Management Science  
Health Technology Assessment



**Francisco Lima**  
Applied econometrics  
Policy evaluation  
Innovation



**Hugo Castro Silva**  
Automation  
Employment  
Entrepreneurship



**Paulo Caldas**  
Sustainability  
Government  
Strategy



**Rui Baptista**  
Entrepreneurship  
and Innovation  
Strategic Human Capital  
Technology and Labour Markets



**Inês Carrilho Nunes**  
Technological change  
Environmental policy  
Energy poverty



**Inês Marques**  
Operations research  
Health care management  
Planning and scheduling



**Susana Relvas**  
Logistics  
Retail  
OR & Management Science



**Tânia Ramos**  
Vehicle Routing Problems  
Reverse Logistics  
Waste Management



**Tânia Pinto Varela**  
Manufacturing  
Supply chain: pharmaceutical  
Hydrogen



**Valentina Bonomi**  
Operations research  
Vehicle Routing Problems  
Optimization Algorithms



**Gilberto Montibeller**



**Helena Paulo**  
Supply Chain Design  
Biomass  
Optimization

## Associate Members

**Acácio  
Porta Nova**



**João Pires Ribeiro**  
Resilience  
Supply Chain  
Management



**João Leitão**  
Entrepreneurship  
Innovation  
Sustainable Development



**Ana Cristina Amaro**  
Supply Chain Management  
Sustainability  
Logistics



**Ana Sofia Parente  
da Costa**



**João Pedro Fernandes  
Thomaz**



**Joaquim Jorge Vicente**  
Operations Research  
Sustainable Logistics  
Supply Chain Management



**Augusto Eusébio**



**Carlos Monteiro**  
User-centered product design  
Perceptual mapping  
Multivariate statistics



**Klára Dimitrová**



**Lúcia Piedade**  
Aeronautical Management  
Airport Management  
Emergency and Contingency  
Plans



**Carlos Lucas de Freitas**



**Carolina Soares de Moraes**  
Smart waste collection  
Vehicle routing problem  
Optimization



**Marc Scholten**  
Decision making  
Intertemporal choice  
Choice under risk and uncertainty



**Margarida Barata  
Monteiro**  
Strategic and Sustainability  
Assessment  
Governance  
Transitions to Sustainability



**Diogo Gonçalves**  
Behavioral Decision Research  
User Experience  
Innovation



**Duarte Dinis**  
Business analytics  
Project management  
Forecasting



**Maria Isabel dos Santos**  
Simulation  
Metamodel  
Regression



**María del Carmen  
Carnero Moya**  
Multicriteria Decision Making  
Maintenance  
Sustainability





**Marisol de Brito Correia**  
Business Intelligence  
eTourism  
Evolutionary Computation



**Miguel Vieira**  
Production planning  
Optimization  
Decision support



**Beatriz Cassuriaga**  
S-LCA  
Social Sustainability  
Circular Economy



**Catarina Mansilha**  
Green Hydrogen  
Supply Chain  
Optimization

**Murat Karaoz**  
Entrepreneurship  
Industrial and firm Dynamics  
Applied Econometrics



**Paulo Abreu**  
Data-driven decision making  
Optimization  
Operations management



**Daniel Dongo**  
Oil & Gas Industry  
Energy Transition  
Oil-producing countries



**Edgar Mascarenhas**  
Behavioural  
Operational Research  
Group Decision-making  
Facilitated  
Collaborative Modelling



**Ricardo Mateus**



**Teresa Rodrigues**



**Erika Maccari**  
Household organic waste  
Circular economy  
Recycling behaviour



**Francisco Viterbo**  
Operations Research  
Hospital Management  
Sustainable Procurement

## PhD Students

**Alicia Soto**  
Sustainability Transitions  
Institutionalization  
Spatial Planning



**Raquel de Aguiar**  
Vehicle Routing Problems  
Mathematical  
Programming  
Home Care



**Guilherme Vara**  
Benchmarking  
Optimization  
Performance and efficiency  
assessment



**Héctor Bonilla Londoño**  
Vehicle Routing Optimization  
Smart Waste Collection  
Stochastic Programming &  
Simulation



**Ana Flávia Santos**  
Behavioural Operational  
Research  
Multi-Criteria Decision  
Analysis  
Decision Sciences



**Ana Bernardo Torrado**  
Optimization  
Sustainability  
Blood Supply Chain



**Joana Simões**  
Household food waste  
Prevention interventions  
Drivers and barriers



**João Carvalho Almeida**  
Academic scheduling  
Multi-objective optimisation  
Meta-heuristics

**Lia Pereira**  
Electric Vehicles  
Self-Sustainability  
Decarbonization



**Liliana Freitas**  
Behavioural Operational  
Research  
Multicriteria Decision Analysis  
Health Technology Assessment



**Muhammad Tanveer**  
UI Islam  
Operations Research  
Sustainable Energy  
Machine Learning



**Rafael Pires Miranda**  
Health technology assessment  
Multicriteria value  
measurement  
Facilitated decision analysis



**Linda Canales**  
Sustainable Supply Chain  
Operations Research  
Energy transition



**Mafalda Ivo de Carvalho**  
Sustainability  
Supply chain management  
Performance assessment  
and measurement



**Rui Dias**



**Rui Agostinho**  
Entrepreneurship  
Demographics  
Firm-creation



**Maria Odete Meneses**  
Supply chain management  
Operational Research  
Optimization



**Maria Lopes Martins**  
OR in healthcare  
Facility location  
Location-allocation models



**Salomé Azevedo**  
Complex Adaptive Systems  
Critical Systems Thinking  
Design Science Research



**Sanaz Azarnoosh**  
Product design  
Decision support models  
Portfolio analysis



**Mariana Mesquita da Cunha**  
Multi-objective optimization  
Mixed integer linear  
programming  
Large scale applications



**Mariana Oliveira**  
Operations Research  
Optimization  
Health services



**Vânia Veloso**  
Circular Economy  
Industrial symbiosis  
Sustainable supply chains



**Yannik Zeiträg**  
Multi-objective optimization  
Scheduling  
Machine learning



**Maria Eugénia Leitão**  
Entrepreneurship  
SDG  
Social Development



**Marco Vargas**  
Circular Economy  
Sustainability Assessment  
Mineral Processes



**Staff**



**Mariana Santa-Marta**  
Pre-Award  
Strategy  
Funding



**Marta Brazão**  
e-waste  
Material flow  
Africa



**Miguel Pina Falcão**



**Mariana Batista Santos**  
Pre-Award  
Funding  
Communication



**Sofia Machaqueiro**  
Communication  
Teamwork  
Interpersonal Skills



# appendix

## Publications 2023

Abreu, P., Santos, D., & Barbosa-Póvoa, A. Data-driven forecasting for operational planning of emergency medical services. *Socio-Economic Planning Sciences*, 86, 101492.

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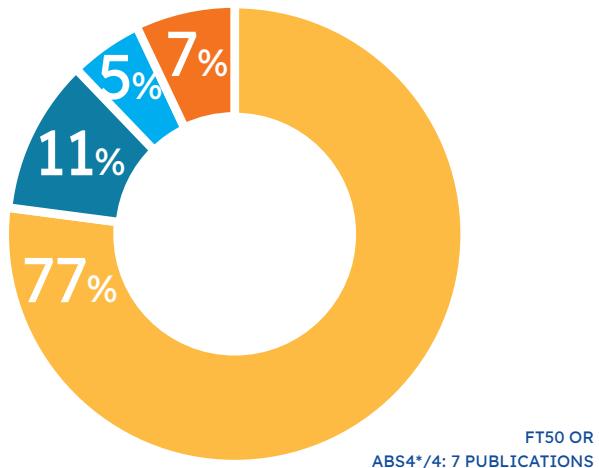
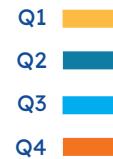
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Publications 2023



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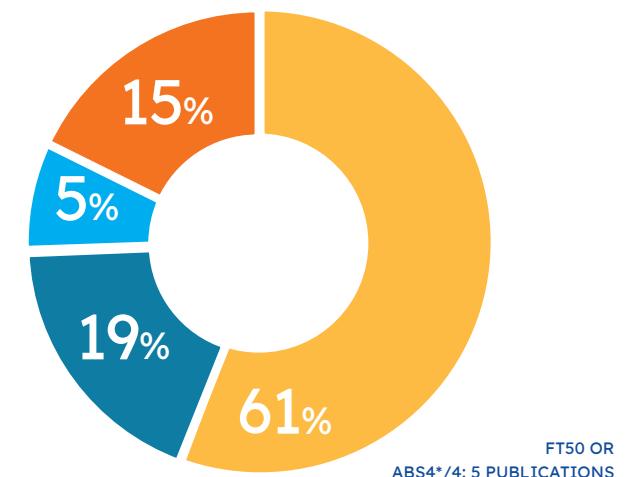
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# Theses 2023

## PhD 2023

### Amaro Segunda Ricardo

Essays on prioritization investment in large-scale public infrastructure in Angola, PhD in Engineering and Management, IST  
Supervisors: Rui Domingos Ribeiro da Cunha Marques, José Rui de Matos Figueira

### Andreia Maria Rodrigues dos Santos

Roadmap for sustainable forest supply chains - A life cycle assessment approach, PhD in Engineering and Management, IST  
Supervisors: Ana Isabel Cerqueira de Sousa Gouveia Carvalho, Ana Paula Ferreira Dias Barbosa Póvoa

### Eric Ofori-Ntow Jnr

Methodological Approaches For Forecasting Electricity Demand And Renewable Energy Availability: The Case Of Ghana, PhD in Engineering and Management, IST  
Supervisors: Susana Isabel Carvalho, Mónica Duarte Correia de Oliveira, João Carlos da Cruz Lourenço

### Jörg Michael Delhaes

Advancing participatory methods in Corporate Foresight: New approaches for improved decision-making in management, PhD in Engineering and Management, IST  
Supervisors: Mónica Duarte Oliveira, Ana Catarina Lopes Vieira Godinho de Matos

### Paulo Roberto de Sousa Abreu

A data-driven optimization approach for resource planning at Emergency Medical Services, PhD in Engineering and Management, IST  
Supervisors: Daniel Rebelo dos Santos, Ana Paula Ferreira Dias Barbosa Póvoa

## MSc 2023

### Afonso Duarte Pinto Bastos Delgado

Desempenho dos países no desenvolvimento da indústria e da economia e na erradicação da pobreza: Uma abordagem de benchmarking aplicada aos ODSs 1, 8

e 9, MSc in Industrial Engineering and Management, IST  
Supervisor(s): Diogo Filipe da Cunha Ferreira, Paulo Alexandre Fernandes Varela Simões Caldas

### Alice Roque de Pinho Oliveira de Sousa

Forests Supply Chain Materiality, MSc in Industrial Engineering and Management, IST  
Supervisors: Ana Isabel Cerqueira de Sousa Gouveia Carvalho, Andreia Maria Rodrigues dos Santos

### Ana Carina Avelar Anastácio

Developing Multi-Criteria Resource Allocation Tools for Policy Evaluation Under Uncertain Conditions, MSc in Engineering and Management of Innovation and Entrepreneurship, IST  
Supervisors: Mónica Duarte Correia de Oliveira, João Carlos da Cruz Lourenço

### Ana Rita Cunha Salgado

Ontology-based analysis of the semiconductor supply chain: the use-case of the Battery Management System, MSc in Industrial Engineering and Management, IST  
Supervisors: Ana Paula Ferreira Dias Barbosa Póvoa

### Ana Sofia Neves Pascoal

Drivers for innovation in energy storage and energy efficiency technologies, MSc in Industrial Engineering and Management, IST  
Supervisors: Maria Margarida Martelo Catalão Lopes de Oliveira Pires Pina, Inês Isabel Carrilho Nunes

### André Miguel Machado Querido

Immigration and Real Estate Prices in Portugal: A Panel Data Analysis, MSc in Industrial Engineering and Management, IST  
Supervisors: António Sérgio Constantino Folgado Ribeiro, Hugo Miguel Fragoso de Castro Silva

### António Albuquerque Simões Furtado Ramiro

Through the User's Eye: A Mixed Methods Approach to Enhancing the

Understanding of End User Needs in Health Information Technologies, MSc in Biomedical Engineering, IST  
Supervisors: Ana Catarina Lopes Vieira Godinho de Matos, Salomé Guedes Sequeira de Pádua Azevedo

### António Jorge Novais Vidal Fernandes

User Acceptance Testing Process for a Digital Public Service, MSc in Industrial Engineering and Management, IST  
Supervisors: Miguel Leitão Bignolas Mira da Silva, Tânia Rodrigues Pereira Ramos

### António Maria Corte Real Teles Branco

A framework for the implementation of automation-based projects in warehouses - The Case Study of Worten, MSc in Industrial Engineering and Management, IST  
Supervisors: Susana Isabel Carvalho Relvas, Pedro Costa

### António Maria de Calheiros e Menezes Ferreira de Almeida

Uma Abordagem à Eficiência de um Conjunto de Unidades Hoteleiras por Município em Portugal Continental, MSc in Industrial Engineering and Management, IST  
Supervisors: Maria Isabel Craveiro Pedro, Rodrigo Soares

### António Maria Gargate Costa Sousa Andion

Aumento de Produtividade numa linha de Produção de Equipamentos de Refrigeração Industrial, MSc in Industrial Engineering and Management, IST  
Supervisors: Daniel Rebelo dos Santos

### António Pedro Baptista Nunes Simões de Carvalho

Imagining the future with citizens: Driver validation in a participatory foresight approach for assessing animal products consumption patterns in the future, MSc in Engineering and Management of Innovation and Entrepreneurship, IST  
Supervisors: Ana Catarina Lopes Vieira Godinho de Matos, Sofia Santos

**Bruno Filipe Francisco Reis**  
Exports and imports effect on performance - A study on Portuguese firms, MSc in Industrial Engineering and Management, IST  
Supervisors: António Sérgio Constantino Folgado Ribeiro, Miguel Simões Torres Preto

### Chris-Lennert Roters

"Learning Methods and their Impact on Training of Customers for Artificial Intelligence Based Analysis Platforms in Logistics and Production: A Qualitative Study on Motion-Mining®", MSc in Industrial Engineering and Management, IST  
Supervisors: Susana Isabel Carvalho Relvas, Sascha Kaczmarek

### Constantin Wegner

Scenarios for the future of the agrifood industry - strategic recommendations and future steps for acembex - the scenario of -home meat home, MSc in Management, NOVA - School of Business and Economics  
Supervisors: António Alvarenga

### Daniel Gaspar Pereira

An optimization approach for sustainable logistics, MSc in Industrial Engineering and Management, IST  
Supervisors: Ana Paula Ferreira Dias Barbosa Póvoa, Bruna Alexandra Elias Mota

### David Miguel Franco Rodrigues

Developing a framework for collaborative development of multidimensional management dashboards: A use case for remote patient monitoring in heart failure, MSc in Computer Science and Engineering, IST  
Supervisors: Mónica Duarte Correia de Oliveira

### Edoardo La Motta

Scenarios for the Future of the Digital Payment Industry in Europe: Exploration of Strategic Implications for the Payment Gateway Provider Paybyrd, Megatrend and Trends 1, Scenario 3 Narrative and Strategic Implications, MSc in Management, NOVA - School of Business and Economics  
Supervisors: António Alvarenga

### Filipa Maria Braz Silva

Design and Planning Green Hydrogen Supply Chains - The Case of Portugal Industrial Sector, MSc in Industrial Engineering and Management, IST  
Supervisors: Ana Paula Ferreira Dias Barbosa Póvoa, Cátia Rafaela Ferreira Medeiros da Silva Coelho

**Filippo Ferronato**  
Scenarios for the future of the agrifood industry - strategic recommendations and future steps for acembex - the scenario of -home meat home, MSc in Management, NOVA - School of Business and Economics  
Supervisors: António Alvarenga

### Francisca Filipa Pereira Barbosa Afonso

Incorporating uncertainty in Healthcare Time-Driven Activity Based Costing: From a literature review to a framework for remote care interventions, MSc in Biomedical Engineering, IST  
Supervisors: Mónica Duarte Correia de Oliveira, Rafael Alexandre Pires Miranda

### Francisco Amoedo Casqueiro Alves da Silva

Developing simulation models for the implementation of Next-Generation Sequencing in the Lisbon region, MSc in Industrial Engineering and Management, IST  
Supervisors: Ana Paula Ferreira Dias Barbosa Póvoa, Susana Isabel Carvalho Relvas

### Francisco De Sousa Lima Fries Costa

Scenarios For Future Sourcing Strategies In The Context Of The Use Of Green Hydrogen To Achieve Carbon Neutrality In Dortmund By 2035 - Strategic Implications For DEW21, Scenario 3: hydrogen apogee, MSc in Management, NOVA - School of Business and Economics  
Supervisors: António Alvarenga

### Inês dos Santos Falcão

Importância da Hotelaria na contribuição para a preservação ambiental e patrimonial da Região Demarcada do Douro, MSc in Hospitality Management, ESGHT, University of Algarve  
Supervisors: Marisol Correia Cláudia Henriques

### Inês Ferro Passinhos de Medeiros Rodrigues

A meta-heuristic approach for the design of a green hydrogen supply chain in Portugal, MSc in Engineering and Management of Innovation and Entrepreneurship, IST  
Supervisors: Tânia Rute Xavier de Matos Pinto Varela, Nelson Martins

### Inês Madeira Ferreira

Optimizing Supply Chain Management Practices to Reduce Water Loss Related With Food Waste, MSc in Industrial Engineering and Management, IST  
Supervisors: Bruna Alexandra Elias Mota, Lukas Messmann

### Joana Carreira Domingos

Analysis of the Impact of Exogenous Variables on the Efficiency of Tourist Accommodation Establishments, MSc in Industrial Engineering and Management, IST  
Supervisors: Hugo Miguel Fragoso de Castro Silva

**Gonçalo de Matos Silva Sousa Félix**  
Public Investment in sports and culture and public health - a longitudinal study, MSc in Engineering and Management of Innovation and Entrepreneurship, IST  
Supervisors: António Sérgio Constantino Folgado Ribeiro

### Gonçalo Manuel Silva Lousa

Strategic Deployment of Green Hydrogen Refueling Stations: The Case of the Portuguese Highways, MSc in Industrial Engineering and Management, IST  
Supervisors: Ana Paula Ferreira Dias Barbosa Póvoa, Cátia Rafaela Ferreira Medeiros da Silva Coelho

### Gonçalo Minhoz Costa Rodrigues

Sustainable Practices Implementation in 3PLs, MSc in Industrial Engineering and Management, IST  
Supervisors: Ana Paula Ferreira Dias Barbosa Póvoa, Susana Isabel Carvalho Relvas

### Inês dos Santos Falcão

Importância da Hotelaria na contribuição para a preservação ambiental e patrimonial da Região Demarcada do Douro, MSc in Hospitality Management, ESGHT, University of Algarve  
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Analysis of the Impact of Exogenous Variables on the Efficiency of Tourist Accommodation Establishments, MSc in Industrial Engineering and Management, IST  
Supervisors: Hugo Miguel Fragoso de Castro Silva

**Joana Gonçalves Moreira de Carvalho**

Technological Change and Wage Inequality in Portugal. MSc in Industrial Engineering and Management, IST  
Supervisors: António Sérgio Constantino Folgado Ribeiro, Hugo Miguel Fragoso de Castro Silva

**João Félix Pimenta**

Selection and prioritisation of medical devices for HTA evaluation: Towards a socio-technical framework based on multiple criteria decision analysis. MSc in Biomedical Engineering, IST  
Supervisors: Ana Catarina Lopes Vieira Godinho de Matos, Helena Miguel Fernandes Monteiro

**João Francisco Ferreira Marques**

The Effectiveness of Enterprise Risk Management: A Case Study in The Navigator Company. MSc in Industrial Engineering and Management, IST  
Supervisors: António Manuel Nave Quintino

**João Martins Antunes**

Scenarios for the future of the agrifood industry - strategic recommendations and future steps for acembex - the scenario of worldwide meat. MSc in Management, NOVA – School of Business and Economics  
Supervisors: António Alvarenga

**João Pedro Fernandes Ribeiro**

Machine Learning aplicado na seleção de doentes submetidos à TRC-D do Hospital de Santa Marta. MSc in Biomedical Engineering, IST  
Supervisors: Daniel Rebelo dos Santos, Sérgio Matoso Laranjo

**João Pedro Ferreira dos Santos**

Analysis of Artificial Intelligence in Smart Cities - User's Perspective of the Drivers and Barriers to AI. MSc in Information Management, NOVA IMS  
Supervisors: Aleš Grozník, Celso Augusto de Matos

**João Pedro Fiéis de Melo**

Using multicriteria decision analysis to measure the value of different scenarios of replacement of beef by pulses in two EU countries. MSc in Biomedical Engineering, IST  
Supervisors: Ana Catarina Lopes Vieira Godinho de Matos, Sara Monteiro Pires

**João Pereira da Silva**

Integrality, contiguity, and absence of holes in forming political districting maps. MSc in Computer Science and Engineering, IST  
Supervisors: José Rui Figueira, Luís Russo

**João Rafael Guerreiro Coelho**

Electric Vehicles Performing Home Deliveries - Leroy Merlin Portugal Case Study. MSc in Industrial Engineering and Management, IST  
Supervisors: Tânia Rodrigues Pereira Ramos

**João Tiago Teixeira Faria de Abreu**

Consistent vehicle routing problem with workload balance in the pharmaceutical distribution. MSc in Industrial Engineering and Management, IST  
Supervisors: Tânia Rute Xavier de Matos Pinto Varela, Miguel Vieira

**João Victor Cardoso Saraiva**

Managing Price Risk for Energy Commodities: A Gas Combined Cycle Power Plant Case. MSc in Industrial Engineering and Management, IST  
Supervisors: António Manuel Nave Quintino, Guilherme Frederico Bernardo Lenz e Silva

**José Lucas Lira Cordeiro**

Viabilidade económica de um projeto de investimento pecuário: a área da suinicultura como estudo de caso. MSc in Industrial Engineering and Management, IST  
Supervisors: Ana Catarina Lopes Vieira Godinho de Matos

**José Maria Pereira de Almeida Branco Pardal**

Green Hydrogen transportation: Development of a decision support tool and application to a case-study. MSc in Industrial Engineering and Management, IST  
Supervisors: Tânia Rute Xavier de Matos Pinto Varela

**José Rego Macedo Ferreira**

Idade relativa no futebol jovem - do contexto nacional às competições internacionais. MSc in Industrial Engineering and Management, IST  
Supervisors: António Sérgio Constantino Folgado Ribeiro

**Karen Rodrigues Villaruel**

The effects of energy accessibility on income inequality in Latin America and Caribbean countries. MSc in Engineering and Management of Innovation and Entrepreneurship, IST

Supervisors: Maria Margarida Martelo Catalão Lopes de Oliveira Pires Pina, Inês Isabel Carrilho Nunes

**Lara Emilia Jaco Ramos**

A Decision Support Tool for Scheduling Master's Thesis Defences. MSc in Industrial Engineering and Management, IST  
Supervisors: Daniel Rebelo dos Santos, José Rui De Matos Figueira

**Leila Tavares Lemos**

Comparison of Formulations for Single and Multiple Objective Political Districting Problems. MSc in Industrial Engineering and Management, IST  
Supervisors: Daniel Rebelo dos Santos, José Rui de Matos Figueira

**Leonor Brito Barata**

Integrated Production and Distribution Planning in the Cement Industry under Carbon Regulatory Schemes The Se cil Case Study. MSc in Industrial Engineering and Management, IST  
Supervisors: Ana Paula Ferreira Dias Barbosa Póvoa, Cátia Rafaela Ferreira Medeiros da Silva Coelho

**Leonor de Távora Barroco e Moreira dos Santos**

“Estimating the performance of Portuguese public hospitals through a stochastic multicriteria acceptability analysis”. MSc in Engineering and Management of Innovation and Entrepreneurship, IST  
Supervisors: Diogo Filipe da Cunha Ferreira, José Rui de Matos Figueira

**Lutz Karl Von Der Heyden**

Scenarios For Future Sourcing Strategies In The Context Of The Use Of Green Hydrogen To Achieve Carbon Neutrality In Dortmund. By 2035 – Strategic Implications For DEW21. Scenario 2: victorian development. MSc in Management, NOVA – School of Business and Economics

Supervisors: António Alvarenga Madalena Alexandre Lourenço

“A multi-criteria classification approach for assessing energy poverty in the European Union”. MSc in Energy Engineering and Management, IST  
Supervisors: José Rui de Matos Figueira, Carla Oliveira-Henriques

**Margarida da Costa Graça**

Scenarios for the future of the agrifood industry - strategic recommendations and future steps for acembex - the scenario of -neighbor's garden. MSc in Management, NOVA – School of Business and Economics  
Supervisors: António Alvarenga

**Margarida Isabel Bento Espadinha Figueira**

Design and planning of symbiotic supply chains: a case study in pulp and paper and cement industries. MSc in Industrial Engineering and Management, IST  
Supervisors: Bruna Alexandra Elias Mota

**Margarida Maria De Sousa Aires de Abreu**

Bi-Objective Districting and Routing Problems: A Comparison of Models. MSc in Industrial Engineering and Management, IST  
Supervisors: José Rui De Matos Figueira, Daniel Rebelo dos Santos

**Maria Ana Pereira Ferreira da Silva Gesteiro**

Evaluating Flexibility on Master Surgery Scheduling to reduce waiting lists: A case study in a Portuguese Hospital. MSc in Biomedical Engineering, IST  
Supervisors: Daniel Rebelo dos Santos

**Maria Ana Ramos Monge**

Global Pharmaceutical Supply Chains: How can we navigate through the impact of uncertainty?. MSc in Industrial Engineering and Management, IST  
Supervisors: Tânia Rute Xavier de Matos Pinto Varela, Nelson Fernando Chibeles Pereira Martins

**Maria Beatriz Bonança Castanho Pires Sequeira**

Jobs Across Borders: Analysing the Influence of Immigration on Occupational Unemployment in Portugal. MSc in Industrial Engineering and Management, IST  
Supervisors: António Sérgio Constantino Folgado Ribeiro, Hugo Miguel Fragoso de Castro Silva

**Mariana Anjos de Melo e Castro Paixão**

How can innovative Portuguese businesses better position themselves in the global market?. MSc in Industrial Engineering and Management, IST  
Supervisors: Hugo Miguel Fragoso de Castro Silva

**Mariana dos Reis Sobral Pires**

Bulky items delivery process optimization using simulation and GIS. MSc in Industrial Engineering and Management, IST  
Supervisors: Susana Isabel Carvalho Relvas, Pedro Costa

**Marina Frangkiskou**

The relationship between the employees' perception of gamification and their intrinsic motivation at work: a systematic literature review. European Master of Science in Information Systems Management, NOVA IMS  
Celso Augusto de Matos, Anton Manfreda  
Supervisors: Celso Augusto de Matos, Anton Manfreda

**Maria Inês Fernandes Pereira**

Sustainable Supply Chain Design and Planning against Water - Related Risks. MSc in Industrial Engineering and Management, IST  
Supervisors: Bruna Alexandra Elias Mota

**Maria Joana Nunes da Silva Lopes Figueira**

Analysis and optimization of JMD's distribution chain - The Case Study of JMD. MSc in Industrial Engineering and Management, IST  
Supervisors: Ana Paula Ferreira Dias Barbosa Póvoa, Cátia Rafaela Ferreira Medeiros da Silva Coelho

**Maria Margarida De Araújo Matos Barbosa**

Using Nudges to Increase Hand Hygiene Compliance in a Hospital Setting. MSc in Engineering and Management of Innovation and Entrepreneurship, IST  
Supervisors: Diogo Gonçalves, António Miguel Areias Dias Amaral

**Maximilian Zimmer**

Scenarios for the Future of the Digital Payment Industry in Europe: Exploration of Strategic Implications for the Payment Gateway Provider Paybyrd. Framing & Scoping Stage, Scenario 1 Narrative and Strategic Implications, Scenario 4 Narrative and Strategic Implications. MSc in Management, NOVA – School of Business and Economics  
Supervisors: António Alvarenga

**Mickaël Anthony da Silva Magina**

The Role of Digitalization in Reducing Energy Poverty. MSc in Industrial Engineering and Management, IST  
Supervisors: María Margarida Martelo Catalão Lopes de Oliveira Pires Pina, Inês Isabel Carrilho Nunes

**Mariana Anjos de Melo e Castro Paixão**

How can innovative Portuguese businesses better position themselves in the global market?. Megatrend and Trends 3, Uncertainties 3 & 4, Scenario 2 Narrative and Strategic Implications, Monitor Stage. MSc in Management, NOVA – School of Business and Economics  
Supervisors: António Alvarenga

**Nguyen Pham**

The implementation of artificial intelligence to simplify the first level support of a management system at a large company. European MSc. in Information Systems Management, NOVA IMS  
Supervisors: Celso Augusto de Matos, Anton Manfreda

**Nuno Afonso Adrião Monteiro**

Previsão de vendas de bens de consumo embalados com recurso a técnicas tradicionais e a aprendizagem automática. MSc in Industrial Engineering and Management, IST  
Supervisors: João Carlos da Cruz Lourenço

**Paulo Daniel Teixeira da Silva**  
Impacts of Implementing a High-Density Automated Storage System in a Warehouse Worten Case Study.  
MSc in Industrial Engineering and Management, IST  
Supervisors: Susana Isabel Carvalho Relvas, Ricardo Cardão

**Pedro Alexandre Antunes Ganhão**  
Gestão de risco em entidades municipais Divisão de Segurança e Saúde no Trabalho da Câmara Municipal de Sintra. MSc in Industrial Engineering and Management, IST  
Supervisors: António Manuel Nave Quintino

**Pedro Caramelo Dórdio Carreiro**  
"The impact of product innovation on merging activity and vice-versa - The case of 5G and North Macedonia". MSc in Engineering and Management of Innovation and Entrepreneurship, IST  
Supervisors: Maria Margarida Martelo Catalão Lopes de Oliveira Pires Pina

**Philip Grabowski**  
Scenarios For Future Sourcing Strategies In The Context Of The Use Of Green Hydrogen To Achieve Carbon Neutrality In Dortmund By 2035 – Strategic Implications For DEW21. Phase II: Explore – Megatrend I & Megatrend II. MSc in Management, NOVA – School of Business and Economics  
Supervisors: António Alvarenga

**Rafaela Ferreira Veiga**  
"Ex-jogadores de futebol - efeito na remuneração do capital humano acumulado". MSc in Industrial Engineering and Management, IST  
Supervisors: António Sérgio Constantino Folgado Ribeiro

**Régis Jean François Malpas**  
Designing a virtual warehouse operator integrating fatigue, recovery and learning using agent-based modeling Worten Case Study. MSc in Industrial Engineering and Management, IST  
Supervisors: Susana Isabel Carvalho Relvas, Manuel Kolp, Pedro Costa

**Ricardo Brazão Veríssimo**  
A Responsabilidade Social Empresarial Interna na promoção da Satisfação no trabalho e do Compromisso dos colaboradores - Estudo de caso - Delta Cafés. MSc in Industrial Engineering and Management, IST  
Supervisors: Maria Margarida Martelo Catalão Lopes de Oliveira Pires Pina

**Rita Cardoso Lourenço Silva Fernandes**  
Construção de um Modelo de Regressão Linear Múltipla para a Previsão de Tempos Cirúrgicos no Âmbito da Especialidade de Ortopedia do Hospital da Luz de Lisboa. MSc in Industrial Engineering and Management, IST  
Supervisors: Daniel Rebelo dos Santos, Paulo Santos

**Rita Simões Barreiros**  
Iberian centralization in reception and processing of maritime containers - The Leroy Merlin Case Study. MSc in Industrial Engineering and Management, IST  
Supervisors: Tânia Rodrigues Pereira Ramos

**Rodrigo Manuel Aniceto da Silva e Costa**  
Os Sistemas de Custo: Análise ao sistema atualmente usado e proposta de implementação de método alternativo numa empresa industrial de curtumes. MSc in Industrial Engineering and Management, IST  
Supervisors: Maria Isabel Craveiro Pedro

**Ruben Pires**  
Simulação de Colunas de Destilação com Integração Interna de Calor. MSc in Chemical and Biological Engineering, ISEL  
Supervisors: João M. Silva, Isabel M. João

**Rui Pedro Marques Tavares**  
Otimização de materiais de embalagem em e-commerce. MSc in Industrial Engineering and Management, IST  
Supervisors: Tânia Rodrigues Pereira Ramos, Andreia Maria Rodrigues dos Santos

**Sara Filipa Lemos Veiga**  
Towards an Enhanced Risk Assessment Framework for mHealth Apps: Exploring and Adapting the FMEA Approach. MSc in Biomedical Engineering, IST  
Supervisors: Ana Catarina Lopes Vieira Godinho de Matos, Liliane Pintelon

**Sarah Aguilos**  
Scenarios For Future Sourcing Strategies In The Context Of The Use Of Green Hydrogen To Achieve Carbon Neutrality In Dortmund By 2035 – Strategic Implications For DEW21. Scenario

**1: high tension - narrative and strategic recommendations.** MSc in Management, NOVA – School of Business and Economics  
Supervisors: António Alvarenga

**Sofia Santos**  
Gestão Lean numa empresa de manutenção de sistemas de tratamento de águas residuais. MSc in Quality and Environmental Engineering, ISEL  
Supervisors: Isabel M. João

**Teresa Maria Favinha Palma Vasa de Jesus**  
Scenarios For Future Sourcing Strategies In The Context Of The Use Of Green Hydrogen To Achieve Carbon Neutrality In Dortmund By 2035 – Strategic Implications For DEW21. Scenario 4: electrolysis apprehension - narrative and strategic recommendations.  
MSc in Management, NOVA – School of Business and Economics  
Supervisors: António Alvarenga

**Tiago Almeida Santos Simões**  
Roadmap para auxiliar uma organização inserida na Indústria Farmacêutica a iniciar a sua transição rumo à Indústria 4.0. MSc in Industrial Engineering and Management, IST  
Supervisors: Tânia Rute Xavier de Matos Pinto-Varela

**Tiago Correia de Seabra Duarte Neves**  
A performance review of Venture Capital and of Governmental VC policy The Case of Portugal Ventures. MSc in Industrial Engineering and Management, IST  
Supervisors: Maria Isabel Craveiro Pedro

**Tomás Fernandes Miranda**  
Corporate Social Responsibility in the Food Retail Market. MSc in Program in Data-Driven Marketing, NOVA IMS  
Supervisors: Celso Augusto de Matos

**Tomás Zaki**  
Optimizing task scheduling in cloud: A multi-objective approach using hyper heuristics and genetic programming. MSc in Computer Science and Engineering, IST  
Supervisors: José Rui Figueira Rui Neves

# Theses 2024

## PhD 2024

**Paulo Lima Brasil Maia de Loureiro**  
INSIGHTS INTO SCIENCE AND SOCIETY POLICIES: Public participation in science, involvement of non-academics in academic research, and challenging the deficit model in the age of Responsible Research and Innovation. PhD Program in Engineering and Public Policy, IST  
Supervisors: Hugo Duarte Alves Horta, Rui Miguel Loureiro Nobre Baptista

**João Henrique Pires Ribeiro**  
Quantitative tools to aid decision-making towards Resilient Supply Chain. PhD in Engineering and Management, IST  
Supervisor: Ana Paula Ferreira Dias Barbosa Póvoa

**Mariana Bayão Horta Mesquita da Cunha e Silva**  
Advancing Multi-Objective Optimization: Representation and Preference Inclusion methods. PhD in Engineering and Management, IST  
Supervisors: Ana Paula Ferreira Dias Barbosa Póvoa, José Rui de Matos Figueira

## MSc 2024

**Afonso Maria Resende Faria**  
Impact of Automated Sorting on Inbound Warehouse Flows: The Case Study of Worten. MSc in Industrial Engineering and Management, IST  
Supervisor(s): Daniel Rebelo dos Santos, Susana Isabel Carvalho Relvas

**Afonso Souto**  
Developing a Digital Maturity Model for the Portuguese Manufacturing SMEs: Framework and Pilot Study. MSc in Engineering and Management of Innovation and Entrepreneurship, IST  
Supervisors: Diogo Gonçalves, Miguel Preto

**Alexandre Torrinha**  
Visualizing Efficiency: Integrating Data Visualization tools in a Digital Twin for Enhanced Decision-Making in Retail Distribution Center. MSc. Computer Science, IST  
Supervisors: Sandra Gama, Susana Relvas

## Ana Canas

**António Félix Macedo**  
Fused Filament Fabrication Life Cycle Cost Modeling: An Application to Non-Pneumatic Tires Development. M.Sc. in Engineering and Management of Innovation and Entrepreneurship, IST  
Supervisors: Miguel Mira da Silva, Mónica Oliveira

**Ana Catarina Lourenço Teixeira**  
Exploring Technology Acceptance Models: A Study on RPM-Based Services in Healthcare. M.Sc. in Biomedical Engineering, IST  
Supervisors: Ana Catarina Lopes Vieira Godinho de Matos, Salomé Guedes Sequeira de Pádua Azevedo

**Ana Margarida Oliveira Ferreira**  
Analysing the profile of tourists in four-and five-star hotels in the Algarve region: Online reviews and ratings. M.Sc. in Hospitality Management, ESGHT, Algarve University.  
Supervisors: Marisol Correia, Ana Isabel Renda

**Beatrix Lourenço Franco**  
Benchmarking de Modelos de Previsão: Aplicação no Planeamento de Capacidade da Manutenção Aeronáutica. M.Sc. Engenharia e Gestão Industrial, Faculdade de Ciências e Tecnologia da Universidade NOVA de Lisboa  
Supervisors: Duarte Dinis, Ana Paula Barroso

**Beatriz Lourenço Ribeiro**  
Modeling social impacts: correlation analysis of child labour and causality in discrimination. M.Sc. in Industrial Engineering and Management, IST  
Supervisors: Andreia Maria Rodrigues dos Santos, Inês Isabel Carrilho Nunes

**Beatriz Maria Ferreira Vidigueira**  
Multi-Sourcing Process Control in Bottleneck Environment for Electronic Supply Chains. M.Sc. in Industrial Engineering and Management, IST  
Supervisors: Susana Isabel Carvalho Relvas

**Beatriz Martins Duarte**  
Evaluating lean practices in sustainable supply chain management: a multi-criteria decision analysis. M.Sc. in Industrial Engineering and Management, IST  
Supervisors: Cátia Rafaela Ferreira Medeiros da Silva Coelho, Miguel Alves Pereira

**Beatriz Santos Alves da Cunha**  
Desenvolvimento de um Projeto Lean no Hospital Lusíadas Lisboa – Serviço de Manutenção e Engenharia Clínica: Estudo de Caso. M.Sc. in Biomedical Engineering, ISEL-ESTeSL  
Supervisors: Isabel João

**Bernardo Gonçalves Teixeira**  
Enhancing Warehouse Efficiency through Real-time Flux Control: A Digital Twin Approach. M.Sc. Computer Science, IST  
Supervisors: Sandra Gama, Susana Relvas

**Bruno Filipe Francisco Reis**  
Exports and imports effect on performance - A study on Portuguese firms. M.Sc. in Industrial Engineering and Management, IST  
Supervisors: António Sérgio Ribeiro, Miguel Torres Preto

**Carolina de Oliveira e Barbeira**  
Say Goodbye to my Little Firm. M.Sc. in Industrial Engineering and Management, IST  
Supervisors: Hugo Miguel Fragoso de Castro Silva  
Carolina Morgado Carvalho (2024) “Simulação Dinâmica da Utilização de Zeólitos em Processos de Adsorção” M.Sc. in Chemical and Biological Engineering, ISEL-IPL, [Supervisor(s): João Silva, Isabel João].

**Catarina de Sousa e Silva Pereira**  
Innovation for a Sustainable Future: A Global Analysis of Efficiency in the Energy Transition. M.Sc. in Industrial Engineering and Management, IST  
Supervisors: Inês Isabel Carrilho Nunes, Miguel Alves Pereira

**Cecília Maria Teixeira Pinto**  
Optimizing Wastewater Network Design for Sustainable Water Reuse in Agriculture. M.Sc. in Industrial Engineering and Management, IST  
Supervisors: Bruna Alexandra Elias Mota

**Cláudio José Andrade Pinto**  
O papel dos animais domésticos nas experiências turísticas de lazer dos seus proprietários. A sua participação no prazer, nas emoções e nas memórias. M.Sc. in Marketing Management, Economics Faculty, Algarve University  
Supervisors: Nelson de Matos, Marisol Correia

**David Alcalay**  
Implementação de um CMMS: Um Estudo de Caso no Setor Retailista. M.Sc. Engenharia e Gestão Industrial, Faculdade de Ciências e Tecnologia da Universidade NOVA de Lisboa  
Supervisors: Duarte Dinis

**Diogo de Oliveira Reis**  
From Theory to Reality: How Is Value-Based Healthcare Currently Being Implemented. A Realist Review of the Literature. M.Sc. in Biomedical Engineering, IST  
Supervisors: Mónica Duarte Correia de Oliveira, Carl Savage

**Diogo Manuel De Freitas Duarte Nunes**  
[CAPSTONE] - Towards a Distribution Centre Digital Twin at Jerónimo Martins: the case of reception of goods. M.Sc. in Industrial Engineering and Management, IST  
Supervisors: Susana Isabel Carvalho Relvas, Sandra Pereira Gama

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Fit-For-Purpose Water Reuse in Water Stressed Supply Chains: A Case Study on The Textile and Apparel Industry. M.Sc. in Industrial Engineering and Management, IST  
Supervisors: Bruna Alexandra Elias Mota

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Design and Development of a Decision Support System Integrating Macbeth Voting for use in health contexts. M.Sc. in Biomedical Engineering, IST  
Supervisors: Mónica Duarte Correia de Oliveira, Rafael Alexandre Pires Miranda  
Supervisors: Duarte Dinis

**Filipa Taveira D'Águia**  
Reducing burnout among Portuguese hospital nurses and physicians during the COVID-19 pandemic: A scoping review and a cross-sectional study. M.Sc. in Industrial Engineering and Management, IST  
Supervisors: Diogo Filipe da Cunha Ferreira, Maria Isabel Craveiro Pedro

**Gabriel Gioia Ávila Oliveira**  
Enhancing resilience in education: An econometric study of pedagogical strategies. M.Sc. in Industrial Engineering and Management, IST  
Supervisors: Miguel Alves Pereira, Maria da Conceição Andrade e Silva

**Gabriel Gustavo Soares Santos**  
Nudge theory as a change management support tool. M.Sc. in Industrial Engineering and Management, IST  
Supervisors: Diogo António Fernandes Gonçalves

**Gabriel Kurt**  
Football stocks and their impact on portfolio risk and return: a case study of selected European clubs. M.Sc. in Industrial Engineering and Management, IST  
Supervisors: António Sérgio Ribeiro, Inês Isabel Carrilho Nunes

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Cooperation for the Internationalization of Portuguese SMEs: Learning Experiences from PME Connect. M.Sc. in Industrial Engineering and Management, IST  
Supervisors: Paulo Alexandre Fernandes Varela Simões Caldas

**Gonçalo de Matos Silva Sousa Félix**  
Public Investment in sports and culture and public health – a longitudinal study. M.Sc. in Engineering and Management of Innovation and Entrepreneurship, IST  
Supervisors: António Sérgio Ribeiro

**Guilherme Gomes Correia**  
Planeamento de capacidade da Manutenção Operacional do setor aeronáutico: Valorização de dados numa perspetiva de melhoria do processo de decisão. M.Sc. Engenharia e Gestão Industrial, Faculdade de Ciências e Tecnologia da Universidade NOVA de Lisboa  
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Labour-replacing automation and the future of employment: A firm-level analysis for Portugal. M.Sc. in Industrial Engineering and Management, IST  
Supervisors: Hugo Miguel Fragoso de Castro Silva, Pablo Casas Aljama

**Helena Tello**  
Mitigating vandalism in Lisbon's social housing elevators: Developing contextually tuned nudge solutions leveraging emotional responses. M.Sc. in Engineering and Management of Innovation and Entrepreneurship, IST  
Supervisors: Diogo Gonçalves

**Inês Freitas da Silva Mendes**  
Methodology for Waste Management and Reduction in a Retail Operations Warehouse: The Case Study of Worten. M.Sc. in Industrial Engineering and Management, IST  
Supervisors: Susana Isabel Carvalho Relvas, Afonso Barroso Worten

**Inês Ramos Pina**  
Competition Law Enforcement and Notable Competition Cases in the Platform Economy. M.Sc. in Industrial Engineering and Management, IST  
Supervisors: Maria Margarida Martelo Catalão Lopes de Oliveira Pires Pina

**Inês Sofia Venâncio Serol**  
Environmental assessment of pharmaceutical packaging and analysis of innovation drivers in firms' investment. M.Sc. in Industrial Engineering and Management, IST  
Supervisors: Tânia Rute Xavier de Matos Pinto Varela, Nelson Martins

**Isabel Margarida Vieira Gomes**  
Analysis and improvement within food retail store management. M.Sc. in Industrial Engineering and Management, IST  
Supervisors: Paulo Alexandre Fernandes Varela Simões Caldas

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Modelo de Apoio à Decisão de Manutenção Industrial: O Caso do Parque de Madeiras do Complexo Industrial de Setúbal da Navigator Company. M.Sc. in Industrial Engineering and Management, IST  
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[CAPSTONE] - Towards a Distribution Centre Digital Twin at Jerónimo Martins: The case of the allocation of goods. M.Sc. in Industrial Engineering and Management, IST  
Supervisors: José Rui De Matos Figueira, Miguel Alves Pereira

**João Eduardo Mortágua Silva**  
Mapeamento, Análise e Melhoria do Planeamento de Curto Prazo da Manutenção Aeronáutica. M.Sc. Engenharia e Gestão Industrial, Faculdade de Ciências e Tecnologia da Universidade NOVA de Lisboa  
Supervisors: Duarte Dinis

**João Francisco Antunes Ferreira de Oliveira Belo**  
Exploratory Study to assess willingness to share health data digitally collected - The Portuguese Case. M.Sc. in Biomedical Engineering, IST  
Supervisors: Maria Isabel Craveiro Pedro

**João Francisco Peixoto Imaginário**  
Optimizing Green Hydrogen Supply Chains in Portugal: Balancing Economic Efficiency and Water Sustainability. M.Sc. in Industrial Engineering and Management, IST  
Supervisors: Ana Catarina Lopes Vieira Godinho de Matos, Salomé Guedes Sequeira de Pádua Azevedo

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Estratégia e Modelo de Expansão Nacional de uma Associação Sem Fins Lucrativos: Caso de Estudo Just a Change. M.Sc. in Industrial Engineering and Management, IST  
Supervisors: Andreia Maria Rodrigues dos Santos, Inês Isabel Carrilho Nunes

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Implementação do Sistema de Gestão Ambiental num Concessionário e Oficina automóvel. M.Sc. in Quality and Environmental Engineering, ISEL-IPL  
Supervisor: Isabel João, Hugo Padrão

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Demand prediction and capacity planning of home hospitalization: the Portuguese case. M.Sc. in Biomedical Engineering, IST  
Supervisors: Ana Paula Ferreira Dias Barbosa Póvoa, Mariana Saraiva

**Luís Filipe Fernandes Monteiro**  
Avaliação multicritério de sistemas de transporte urbano com foco no sistema Personal Rapid Transit: Aplicação à ligação Estação do Oriente - Aeroporto de Lisboa. M.Sc. in Industrial Engineering and Management, IST  
Supervisors: João Carlos da Cruz Lourenço

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[CAPSTONE] - Towards a Distribution Centre Digital Twin at Jerónimo Martins: The case of the allocation of goods. M.Sc. in Industrial Engineering and Management, IST  
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Sistema de evaluación multicriterio de la Responsabilidad Social Corporativa. M.Sc. in Ingeniería Industrial, University of Castilla-La Mancha  
Supervisors: María Carmen Carnero

**José Ricardo Ferrari Longhini**  
Viability of Landfill Biomethane Plants and Potential Environmental Impacts in São Paulo, Brazil. M.Sc. in Industrial Engineering and Management, IST  
Supervisors: Maria Isabel Craveiro Pedro

**Laetitia Claire Bernadette Masarweh**  
Boost Strategic Decisions with Supply Chain Digital Twins. M.Sc. in Industrial Engineering and Management, IST  
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**Lenira Simone Soares Gomes Sousa de Barros (2024)**  
Implementação do Sistema de Gestão Ambiental num Concessionário e Oficina automóvel. M.Sc. in Quality and Environmental Engineering, ISEL-IPL  
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Demand prediction and capacity planning of home hospitalization: the Portuguese case. M.Sc. in Biomedical Engineering, IST  
Supervisors: Ana Paula Ferreira Dias Barbosa Póvoa, Mariana Saraiva

**Luiz Guilherme de Freitas Andrade Pires**  
Carbon Leakage: Empirical Evidence from the European Union Emissions Trading System (EU ETS). M.Sc. in Industrial Engineering and Management, IST  
Supervisors: Inês Isabel Carrilho Nunes

**Manuel Espadas López**  
Benchmarking multicriteria de sistemas de gestión del mantenimiento asistidos por ordenador (GMAO). M.Sc. en Ingeniería Industrial, University of Castilla-La Mancha Supervisors: María Carmen Carnero

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Higher Education Entrepreneurship Observatory. M.Sc. in Engineering and Management of Innovation and Entrepreneurship, IST Supervisors: Susana Relvas, Marta Ramilo Abrantes

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Marketing Digital e Inteligência Artificial: Um estudo das implicações para o futuro das Start-ups nascidas em Incubadoras. M.Sc. Gestão, Universidade da Beira Interior Supervisors: Vítor Manuel Pinto de Figueiredo, Dina Batista Pereira

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Jobs Across Borders: Analysing the Influence of Immigration on Occupational Unemployment in Portugal. M.Sc. in Industrial Engineering and Management, IST Supervisors: António Sérgio Ribeiro, Hugo Castro Silva

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From maps towards decision-making: Developing a multi-methodology framework to help decision-makers design and select spatial based policies in pandemic contexts. M.Sc. in Biomedical Engineering, IST Supervisors: Mónica Duarte Correia de Oliveira, Manuel Luís Castro Ribeiro

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How Efficient is the Sustainable Management of Healthcare Supply Chains of United Nations Member States? M.Sc. in Industrial Engineering and Management, IST Supervisors: Ana Isabel Cerqueira de Sousa Gouveia Carvalho, Miguel Alves Pereira

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Melhoria da Eficiência Operacional numa Unidade Industrial do Sector Farmacêutico. M.Sc. in Industrial Engineering and Management, IST Supervisors: Amílcar Arantes

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Driving Sustainability: A Comparative Analysis of Electric vs. Combustion Vehicles: Case Study CTT. M.Sc. in Industrial Engineering and Management, IST Supervisors: Andreia Maria Rodrigues dos Santos, Cátia Rafaela Ferreira Medeiros da Silva Coelho

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Deterministic and Stochastic Environmental Assessment of a Machine Tool. M.Sc. in Industrial Engineering and Management, IST Supervisors: Andreia Maria Rodrigues dos Santos, Cátia Rafaela Ferreira Medeiros da Silva Coelho

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Enhancing Predictive Efficiency Analysis in Healthcare with DEA and Machine Learning. M.Sc. in Biomedical Engineering, IST Supervisors: Miguel Brau Canadas Alves Pereira, José Rui De Matos Figueira

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Application of Project Management principles to enhance environmental sustainability at music festivals. M.Sc. in Industrial Engineering and Management, IST Supervisors: Tânia Rodrigues Pereira Ramos

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Decision-Support Tool for Sustainable Supply Chain Design and Planning: An Optimization-Simulation Approach. M.Sc. in Industrial Engineering and Management, IST Supervisors: Cátia Rafaela Ferreira Medeiros da Silva Coelho, Miguel Vieira

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Enhancing Emergency Department Efficiency through Participatory Simulation Techniques at ULSSM. M.Sc. in Biomedical Engineering, IST Supervisors: Miguel Brau Canadas Alves Pereira, Rui Tato Marinho

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Decoding judicial efficiency: A data-driven analysis of Portuguese first instance courts. M.Sc. in Data Science and Engineering, IST Supervisors: Miguel Alves Pereira, Maria Conceição Silva

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Developing a Business Case for a Reuse Centre Integrated into Municipal Solid Waste Management. M.Sc. in Industrial Engineering and Management, IST Supervisors: Tânia Rodrigues Pereira Ramos

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Improving Waiting List Management through Master Surgery Scheduling. M.Sc. in Biomedical Engineering, IST Supervisors: Daniel Rebelo dos Santos Rui Cortes

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Monte Carlo Simulation for Sustainable Closed-Loop Supply Chain Optimization: A Decision Support Tool. M.Sc. in Industrial Engineering and Management, IST Supervisors: Cátia Rafaela Ferreira Medeiros da Silva Coelho, Miguel Vieira

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The Impact of Digital Technologies on Employment Dynamics in Portuguese Municipalities. M.Sc. in Industrial Engineering and Management, IST Supervisors: António Sérgio Ribeiro, Hugo Castro Silva

**Matilde Pitôrra**  
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**Matilde Ribeiro Godinho**  
Market Power Dynamics in the Innovation-Survival Nexus of Portuguese Firms. M.Sc. in Industrial Engineering and Management, IST Supervisors: António Sérgio Constantino Folgado Ribeiro, Hugo Miguel Fragoso de Castro Silva

**Mattia Mauri**  
On the use of Natural Language Processing for improving automatic maintenance report labelling in the aviation field. M.Sc. in Management Engineering, Scuola di Ingegneria, Università degli studi di Bergamo Supervisors: Roberto Sala, Fabiana Pirola, Duarte Dinis

**Miguel Joaquim Roque Fernandes**  
Advancing the use of MACBETH in health settings: A new decision support system to assist moving from qualitative judgments towards numerical value functions. M.Sc. in Biomedical Engineering, IST Supervisors: Mónica Duarte Correia de Oliveira, João Carlos Nunes Bana e Costa

**Nguyen Pham**  
The implementation of artificial intelligence to simplify the first level support of a management system at a large company. European M.Sc. in Information Systems Management, NOVA IMS Supervisors: Celso Augusto de Matos, Anton Manfreda

**Patrícia da Conceição Silva**  
Estratégias a desenvolver pelo hotel Algarve Race Resort para combater a sazonalidade dos eventos de automobilismo/motociclismo. M.Sc. in Hospitality Management, ESGHT, Algarve University Supervisors: Celisia Baptista and Marisol Correia

**Paulo Rodrigo Freitas Lopes**  
Omnichannel warehouse consolidation flows design with process engineering and analytics. M.Sc. in Industrial Engineering and Management, IST Supervisors: Susana Isabel Carvalho Relvas, Raquel Bernardino

**Pedro Miguel Padrão Ribeiro da Cunha**  
Sustainable synergy: A computer-based heuristic approach to optimize padel club scheduling and manage court energy consumption. M.Sc. in Mechanical Engineering, IST Supervisors: Miguel Alves Pereira, Carlos Santos Silva

**Raquel Carrión Pérez**  
Evaluación de Enterprise Resource Planning de Software libre. M.Sc. en Ingeniería Industrial, University of Castilla-La Mancha Supervisors: María Carmen Carnero

**Rita Alexandra Santinhos Costa**  
Exploring Innovative Ways to enhance Multiple Criteria Decision Analysis and MACBETH in Health Settings with Big Data and Data Intelligence. M.Sc. in Biomedical Engineering, IST Supervisors: Mónica Duarte Correia de Oliveira, Jayanth Raghothama

**Rui Manuel Briosio Infante**  
Enhancing Argumentive Delphi processes with Dialogue Mapping: Setting discharge criteria for Day Hospital patients with follicular lymphoma. M.Sc. in Biomedical Engineering, IST Supervisors: Mónica Duarte Correia de Oliveira, Ana Cristina Frazão Lopes Alho

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The Psychometric Profile of Portuguese Managers and Organizational Effectiveness: An Empirical Study. M.Sc. in Engineering and Management of Innovation and Entrepreneurship, IST Supervisors: Diogo Gonçalves

**Tiago Mendes Rodrigues**  
Optimizing football player scouting for clubs with limited resources. M.Sc. in Industrial Engineering and Management, IST Supervisors: José Rui De Matos Figueira, Miguel Alves Pereira

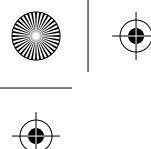
**Tomás Fernandes Miranda**  
Corporate Social Responsibility in the Food Retail Market. M.Sc. in Program in Data-Driven Marketing, NOVA IMS Supervisors: Celso Augusto de Matos

**Tomás Francisco Da Mota Rodrigues Alves Inácio**  
The role of costing in implementing value-based healthcare: challenges and opportunities. M.Sc. in Biomedical Engineering, IST Supervisors: Ana Catarina Lopes Vieira Godinho de Matos, Marisa Isabel Clemente da Silva

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Enhanced Hospital Efficiency Analysis by Targeting Worst Practices: Integrating Operational Research and Advanced Analytics. M.Sc. in Biomedical Engineering, IST Supervisors: Miguel Brau Canadas Alves Pereira

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Plano de Exploração para a Comercialização de uma Molécula Inovadora para Combater a Doença de Parkinson: Estudo de Caso da Molécula Nsv-1 E Dispositivo Intranasal da Neurosov. M.Sc. Ciências Biomédicas, Universidade da Beira Interior Supervisors: Dina Batista Pereira, Ana Clara Braz Cristóvão

**Vitor Gabriel Anunciação Ferreira**  
Estratégia e Modelo de Negócios do Projeto SHELTER. M.Sc. in Industrial Engineering and Management, IST Supervisors: Paula Alexandre Fernandes Varela Simões Caldas



# Funding

The list below includes external competitive funds and industry and public contracts awarded or actively running in 2023 & 2024.

## Research Projects

Sustainable Intelligent Management of Indoor Air Quality for the Culture and Creative Industries (SIMIACCI) HORIZON; CL2; GA:101178095 Coordinator	Challenges for energy access in a decarbonized economy (CHARADE) FCT; 2022.08870.PTDC Coordinator	Digitalisation in the Portuguese Labour Market: Potential Transformative and Destructive Effects FFMS; Coordinator
Biomimicry and carbon adsorbent ecomaterials for a climate-neutral economy (CSTONE) HORIZON: MCA-SE; GA: 101086302 Coordinator	Entrepreneurship, Demographics and Ageing (Age) FCT; EXPL/EGE-ECO/1179/2021 Coordinator	Start to Spark Biomedical Challenge IST Coordinator
Developing Skills and Capabilities for Innovative Air Mobility (AIRMOB) ERASMUS; GA: 101194074 Partner	Centro de Estudos de Gestão do Instituto Superior Técnico(CEGIST) FCT; UIDB/00097/2020 Coordinator	Industry & Public Contracts
Entrepreneurial and innovation skills for developing the new value chains of mobility, health and manufacturing (HEI4Future) EIT Urban Mobility; GA: 19669 Partner	Centro de Estudos de Gestão do Instituto Superior Técnico (CEGIST) FCT; UIDP/00097/2020 Coordinator	Circular Economy Action Plan for Portugal Agência Portuguesa Do Ambiente (APA)
Healthy Cities Generator €VALUE: Economic Valuation for Life Expectancy in Urban Environments (HCG€) EIT Urban Mobility; GA: 23829 Partner	Improving MEDiterranean irrigation and Water supply for smallholder farmers by providing Efficient, low-cost and nature-based Technologies and practices (Med-wet) FCT; PRIMA/0008/2020 Partner	Environmental and Social Life Cycle Assessment Association ARDITEC
UNITA Universitas Montium (UNITA) ERASMUS; GA:101124853 Partner	Pharmaceutical Supply Chain of the Future (Future Pharma) FCT; PTDC/EME-SIS/6019/2020 Partner	Competition Economics and Industrial Economics LisbonEconomics
United Nations Environment Programme (UNEP) ISLANDS - Atlantic Regional Project UNEP; GEF 10848 Coordinator	Spatial Data Science Services for COVID-19 Pandemic (SCOPE) FCT; DSAIPA/DS/0115/2020 Partner	Consenso sobre Inflamação do Típo 2 e Gestão de Doentes – Contexto Português (INFLAT2-PT) Instituto de Saúde Baseado na Evidência/SANOFI
Fundação para a Ciência e Tecnologia (FCT) Towards a Smart Waste Collection Route Planning System (WSmart Route+) FCT; 2022.04180.PTDC Coordinator	Artificial Intelligence for Blood Management(LAIfBlood) FCT; DSAIPA/AI/0033/2019 Partner	Máquina Reciclar Câmara Municipal de Oeiras



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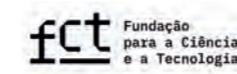
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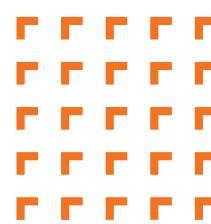
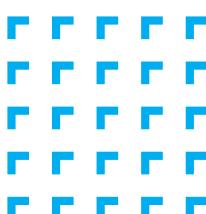
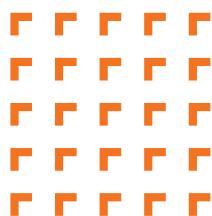
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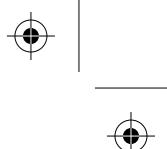
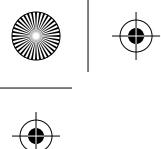
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