Manuel **López-Ibáñez**

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LAST NAME, FIRST NAME **López-Ibáñez, Manuel**
DATE OF BIRTH 16th May 1980
NATIONALITY Spanish
LANGUAGES Spanish (native)
English (fluent)
French (basic, 2 years)
German (basic, 1 year)

CONTENTS

KNOWLEDGE BACKGROUND

My main expertise is the solution of **mathematical optimization** problems arising in **operations research**, *computer science* and *engineering*, including **continuous**, **combinatorial**, and **multi-objective** problems. My research focuses on optimization methods such as **stochastic local search** algorithms, **metaheuristics** (including **evolutionary algorithms** and **ant colony optimization**) and **Bayesian optimization**. I have made significant contributions to theoretical and practical aspects of the empirical analysis of multi-objective optimization algorithms. I have also a track record of working on problems relevant in practice, both well-known academic problems with important practical applications, such as the **longest common subsequence problem**, and real-world optimization problems, such as the **scheduling of pump operations** in water distribution networks in order to save energy and reduce operating costs.

I am interested in improving the **understanding of optimization algorithms** by means of experimentation, and I am particularly interested in **difficult multidisciplinary problems**. These interests have led me to carry out research on **automatic selection**, **configuration** and **design** algorithms and how to extend and improve existing methods for more complex optimization problems, such as those with multiple objectives.

Publication Track-Record and Citations

I have published **41 journal papers** (38 in journals indexed ISI-JCR, 30 in Q1), **9 book chapters** and **67 papers in peer-reviewed proceedings** of international conferences, and edited **7 books**. In addition to the presentations associated to peer-reviewed conference papers, I have personally given **38 presentations** during conferences with scientific selection committee, including **12 tutorials** and **14 invited talks**. I have also made available several software tools that are widely used by the research community. According to the Google Scholar database (or SCOPUS and excluding self-citations):

- My **h-index** is 40 (SCOPUS: 31).
- The **total number of citations** to my papers are more than 8001 (SCOPUS: 4290).
- My five **most-cited** peer-reviewed publications have more than 150 citations each.

Professional Experience ★

Full Professor (Chair) of Optimization Aug 2024 – Present
at Alliance Manchester Business School, University of Manchester, UK.

Turing Fellow Oct 2021 – Sep 2023
Alan Turing Institute, London, UK.

"Beatriz Galindo" Senior Distinguished Researcher May 2020 – Jul 2022
at the University of Málaga, Spain.

Senior Lecturer (Associate Professor) Dec 2018 – Jul 2024
at Alliance Manchester Business School, University of Manchester, UK.

Lecturer (Assistant Professor) Oct 2015 – Nov 2018
at Alliance Manchester Business School, University of Manchester, UK.

Postdoctoral researcher Oct 2011 – Sep 2015
of the Belgian Fund for Scientific Research (*Chargé de recherches des Fonds de la Recherche Scientifique-FNRS*) at IRIDIA, Université Libre de Bruxelles, Brussels, Belgium.

Postdoctoral researcher Jul 2009 – Sep 2011
at the Artificial Intelligence Research Laboratory (IRIDIA)
of the Université Libre de Bruxelles, Brussels, Belgium.

Doctoral researcher Mar – Jun 2009
at the Artificial Intelligence Research Laboratory (IRIDIA)
of the Université Libre de Bruxelles, Brussels, Belgium.

Research Assistant Oct – Nov 2008
at the research group ALBCOM, Departament Llenguatges i Sistemes Informátics,
Universitat Politécnica de Catalunya (UPC), Barcelona, Spain. Supervisor: Dr. Christian Blum.

Doctoral researcher Oct – Dec 2007
at Barcelona Supercomputing Centre, Spain (HPC-Europa Transnational Access Programme).

Fully funded PhD position Nov 2004 – Nov 2007
at Edinburgh Napier University, United Kingdom.
Supervisors: Dr. T. Devi Prasad and Prof. Ben Paechter.

MS Thesis (Diplomarbeit) Oct 2003 – Jul 2004
at the Technische Universität Darmstadt, Germany, with financial support of an Erasmus scholarship.
Supervisors: Dr. Thomas Stützle and Dr. Luís Paquete.

★Full time researcher since November, 2004: More than **19 years of research experience**.

Academic Qualifications

Nov 2009 **PhD award**, Edinburgh Napier University, United Kingdom.
Viva-voice defense successfully passed on 26th June 2009.
Supervisors: Dr. T. Devi Prasad and Prof. Ben Paechter.
Examination Panel: Prof. David W. Corne, Prof. Emma Hart, and Prof. Dragan Savic.

Sep 2004 *Ingeniero en Informática* (Spanish equivalent of **MS degree in Computer Science**, minimum 5 years), University of Granada, Spain.

Skills

Programming languages:	C, C++, Python, R (statistical programming language), Perl, Bourne Again Shell (Bash)
Mathematical tools:	R (statistical computing), Numpy, Pandas, Scikit-learn, Gnuplot, Mathematica, Matlab
Operating systems:	GNU/Linux, Windows, MS-DOS
Parallel programming:	Threads and semaphores, MPI
Various:	LaTeX, Emacs, Subversion, Git, LibreOffice/OpenOffice

Best Paper Awards

SEIO - BBVA Foundation Award 2021 The paper *"Construct, Merge, Solve & Adapt A new general algorithm for combinatorial optimization"* [IJ17], co-authored with Christian Blum, Pedro Pinacho and José A. Lozano, was awarded the "Best methodological contribution in operations research" prize by the Spanish Society of Statistics and Operations Research – BBVA Foundation Awards.

AI for TSP competition Our team (Martin Zaefferer, Manuel López-Ibáñez and Ekhine Irurozki) won the 1st place in the *AI for TSP Competition* of the 30th International Joint Conference on Artificial Intelligence (IJCAI-21) [IJ34], 2021.

EVOCOP 2021 The paper *"Hybridization of Racing Methods with Evolutionary Operators for Simulation Optimization of Traffic Lights Programs"* [IC51], co-authored with Christian Cintrano, Javier Ferrer, and Enrique Alba, received the best paper award of the 21th European Conference on Evolutionary Computation in Combinatorial Optimization (EvoCOP 2021), 2021.

EJOR, Editor's Choice Award The paper *"Incorporating Decision-Maker's Preferences into the Automatic Configuration of Bi-Objective Optimisation Algorithms"* [IJ27], co-authored with J. E. Díaz, was selected as one of the Editor's Choice Articles of the *European Journal of Operational Research*, January, 2021.

GECCO 2010 The paper *"The Impact of Design Choices of Multiobjective Ant Colony Optimization Algorithms on Performance: An Experimental Study on the Biobjective TSP"* [IC11], co-authored with Thomas Stützle, received the best paper award of the Ant Colony Optimization and Swarm Intelligence track at the Genetic and Evolutionary Computation Conference (GECCO 2010), Portland, Oregon, 2010.

LION 4 2010 The paper *"Adaptive Anytime Two-Phase Local Search"* [IC10], co-authored with Jérémie Dubois–Lacoste and Thomas Stützle, received the best paper award of the Learning and Intelligent Optimization conference (LION 4), Venice, Italy, 2010.

EA 2009 The paper *"An Analysis of Algorithmic Components for Multiobjective Ant Colony Optimization: A Case Study on the Biobjective TSP"* [IC9], co-authored with Thomas Stützle, received the 3rd best paper award of the 9th international conference on Artificial Evolution (EA'09), Strasbourg, France, 2009.

Scientific Collaborations

Lorentz Center Workshop "BeMCO: Benchmarking in Multi-Criteria Optimisation" 15th–19/4/2024
Lorentz Center, Leiden, The Netherlands

Dagstuhl Seminar "Challenges in Benchmarking Optimization Heuristics" 18th–23/6/2023
Schloss Dagstuhl - Leibniz Center for Informatics, Germany

Lorentz Center Workshop "Benchmarked: Optimization Meets Machine Learning" 30/5 – 3/6/2022
Lorentz Center, Leiden, The Netherlands

Dagstuhl Seminar "Estimation-of-Distribution Algorithms: Theory and Applications" 1st–6/5/2022
Schloss Dagstuhl - Leibniz Center for Informatics, Germany

Invited Professor hosted by Prof. Carola Doerr 6th–17/9/2021
at the Sorbonne University, Paris, France.

Member of Institute of Technology and Software Engineering (ITIS) 18/11/2020 – 31/7/2022
at the University of Málaga, Spain

Lorentz Center Workshop "Benchmarked: Optimization Meets Machine Learning" 9/11/2020
Lorentz Center, Leiden, The Netherlands

Invited participant to Working Group Meeting of EU COST Action 17th–19/2/2020
CA15140 (*Improving Applicability of Nature-Inspired Optimisation by Joining Theory and Practice*), Vilnius, Lithuania

Dagstuhl Seminar "Scalability in Multiobjective Optimization" 12th–17/1/2020
Schloss Dagstuhl - Leibniz Center for Informatics, Germany

Dagstuhl Seminar "Theory of Randomized Optimization Heuristics" 21st–25/10/2019
Schloss Dagstuhl - Leibniz Center for Informatics, Germany

Invited visiting researcher hosted by Prof. Juan Esteban Diaz Leiva 11th–28/6/2019
at the University San Francisco de Quito, Ecuador.

Invited participant to Working Group Meeting of EU COST Action 18th–19/2/2019
CA15140 (*Improving Applicability of Nature-Inspired Optimisation by Joining Theory and Practice*), Málaga, Spain

Invited visiting researcher hosted by Prof. Kaisa Miettinen 18th–25/8/2018
at the University of Jyväskylä, Finland.

Dagstuhl Seminar "Personalized Multiobjective Optimization: An Analytics Perspective" 14th–19/1/2018
Schloss Dagstuhl - Leibniz Center for Informatics, Germany

Invited visiting Junior Professor hosted by Prof. Kaisa Miettinen 27/11 – 21/12/2017
at the University of Jyväskylä, Finland.

Invited participant to Working Group Meeting of EU COST Action 21st–22/9/2017
CA15140 (*Improving Applicability of Nature-Inspired Optimisation by Joining Theory and Practice*), Portorož, Slovenia

Invited visiting researcher hosted by Dr. Marie-Eléonore Kessaci 13th–15/9/2017
at the University of Lille, France.

Invited visiting researcher hosted by Dr. Arnaud Liefooghe 12th–16/6/2017
at the University of Lille, France.

Invited visiting researcher hosted by Dr. Thomas Stützle 19th–23/6/2017
at the Université libre de Bruxelles (ULB), Belgium.

Dagstuhl Seminar "Automated Algorithm Selection and Configuration" 9th–14/10/2016
Schloss Dagstuhl - Leibniz Center for Informatics, Germany

Collaborateur Scientifique 1/2/2016 – 30/9/2019
at the Faculté des Sciences Appliquées, Université libre de Bruxelles, Belgium

Member of the Decision and Cognitive Sciences Research Centre (DCSRC) 1/10/2015 – Present
at the University of Manchester, UK

43rd CREST Open Workshop "Hyper-Heuristics for Software Engineering" 26th–27/10/2015
University College London (UCL), UK

Invited visiting researcher hosted by Prof. Enrique Alba 1/5 – 31/7/2015
at the University of Málaga (UMA), Spain. Funded by a grant (€ 2 710) by the UMA (Estancias Tipo B, Fondos Propios UMA 2014)

Dagstuhl Seminar "Understanding Complexity in Multiobjective Optimization" 11th–16/1/2015
Schloss Dagstuhl - Leibniz Center for Informatics, Germany

Honorary Postdoctoral Fellow hosted by Prof. Holger H. Hoos 25/10 – 1/12/2013
at the University of British Columbia, Vancouver, Canada.
Funded by F.R.S.-FNRS Crédit bref séjour à l'étranger

Lorentz Center Workshop "SIMCO – Set-Oriented and Indicator-Based Multi-Criteria Optimization" 2nd–6/9/2013
Lorentz Center, Leiden, The Netherlands

Invited visit hosted by Prof. Juergen Branke 23rd–30/3/2012
at the University of Warwick, Coventry, United Kingdom. COST (European Cooperation in Science and Technology) Action IC0702

Dagstuhl Seminar "Learning in Multi-Objective Optimization" 22nd–27/1/2012
Schloss Dagstuhl - Leibniz Center for Informatics, Germany

Invited visit hosted by Dr. Oliver Korb 17th–18/10/2011
at the Cambridge Crystallographic Data Centre, Cambridge, United Kingdom.

Invited visit hosted by Dr. Oscar Cordón 21st–30/6/2011

at the European Centre for Soft Computing, Mieres, Spain. COST (European Cooperation in Science and Technology) Action IC0702

Invited visit hosted by Prof. Carlos M. Fonseca 1st–20/12/2005

at the University of Algarve, Faro, Portugal.

Research Projects and Grants

COST Action Randomised Optimisation Algorithms Research Network (ROAR-NET) Oct 2023 – Oct 2027
124999 €
Funding: European Cooperation in Science and Technology (COST) *Role:* Co-I, Management Committee member

EPSRC/SLB Industrial CASE: A Co-operative Algorithm Framework for Solving Large-Scale Heterogeneous Problems with Multiple Objectives Oct 2023 – Sep 2027
£ 139 871
Funding: Engineering and Physical Sciences Research Council (EPSRC) and Schlumberger Cambridge Research, UK *Role:* PI

KTP: "Design, Implementation and FineTuning of a Scheduling Model to Optimize the Sequencing of a Compact Strip Production (CSP) Plant" Jan – Jul 2022
€ 17 936
Funding: ArcelorMittal, S.A. *Role:* PI

KTP: "Analysis, Selection and Tuning of the Solver Parameters for the Optimization of the Scheduling of Steel Making Facilities" Jan – Dec 2021
€ 29 609
Funding: ArcelorMittal, S.A. *Role:* PI

Manchester – Melbourne Call for Dual-Award PhD Projects Sep 2022 – Aug 2026
Funding: University of Manchester and University of Melbourne *Role:* Co-PI, Academic Supervisor

HUMOVE: Human-centred Intelligent Mobility ("Movilidad Inteligente centrada en las personas") Sep 2021 – Aug 2024
€ 138 182
Funding: Spanish Ministry of Science and Research *Role:* Co-I

North West Social Science Doctoral Training Partnership CASE PhD Studentship: Challenges in Home to School Transport: Large-Scale School Bus Routing inclusive of Special Needs Students and Heterogeneous Fleets in the North West Sep 2021 – Aug 2024
£ 67 827
Funding: Economic and Social Research Council (ESRC), UK, and 365Response (private company) *Role:* Co-PI, Academic Supervisor

TAILOR: Foundations of Trustworthy AI - Integrating Reasoning, Learning and Optimization Sep 2020 – Aug 2023
€ 12M (total)
€ 99 800 (UMA)
Funding: European Commission H2020-ICT-2019-3 *Role:* UMA Co-Lead

EPSRC/IBM Industrial CASE: Tuning Bayesian Optimization for Problems with Dynamic Resource Constraints Oct 2020 – Oct 2025
£ 116 928
Funding: Engineering and Physical Sciences Research Council (EPSRC), UK
Role: Co-I, Academic Supervisor

"Beatriz Galindo" Senior Distinguished Researcher May 2020 – Apr 2024
Funding: Spanish Ministry of Science and Innovation (MICINN) *Role:* PI
€ 360 000
Renounced in July 2022

Research Support Fund: Operating theatre planning Jan – Jun 2019
Funding: Alliance Manchester Business School *Role:* Co-I
£ 4 974

Quantitative Models of Realistic Human Decision-Makers for Data Analytics and Optimisation Jan 2019 – Dec 2021
£ 70 000
Funding: Alliance Manchester Business School *Role:* PI
Project proposal for a fully-funded PhD Scholarship

Knowledge Transfer Partnership: Transport in healthcare Nov 2018 – Dec 2020
Funding: Innovate UK *Role:* Co-I £ 219 940
Canceled due to financial issues in the company

UScore2: City to city local level peer review on Disaster Risk Reduction Jan 2017 – Dec 2018
Funding: European Commission *Role:* Participant researcher £ 1 010 186

Ayuda "Ramón y Cajal" (Independent postdoctoral researcher fellowship) Sep 2015 – Sep 2020
Funding: Spanish Government *Role:* PI € 208 600
Awarded but declined by me to take a permanent position at Univ. of Manchester

COMEX: Combinatorial Optimization: Metaheuristics and EXact methods Oct 2012 – Sep 2017
Funding: Inter-university Attraction Poles Programme of the Belgian Federal Science Policy Office (BELSPO) € 500 000
Role: Participant researcher

Hybrid Search Methods for Complex Problems Jan 2010 – Dec 2013
Funding: Belgian National Science Foundation (FNRS), FRFC program € 109 000
Role: Participant researcher
Joint FRFC ("Fonds de la recherche fondamentale collective") research project with the *BeCool* research group at Université catholique de Louvain

Meta-X: Metaheuristics for Complex Optimization Problems Oct 2008 – Sep 2013
Funding: ARC Project ("Action de Recherche Concertée "), Scientific Research Directorate of the French Community of Belgium € 650 000
Role: Participant researcher

Research visit grant (Crédit bref séjour à l'étranger) Oct – Dec 2013
Funding: Belgian F.R.S.-FNRS *Role:* PI € 1 900
Grant for a research visit at University of British Columbia, Vancouver

Prime Horizon Sep 2013
Funding: NCP Wallonie, Belgium *Role:* PI € 1 925
Grant for the elaboration as a partner of a project proposal for the European Union FET-Open-Xtrack

Postdoctoral Fellowship (Chargé de recherches) Oct 2011 – Sep 2015
Funding: Belgian F.R.S.-FNRS *Role:* PI approx. € 360 000

High Performance Ant Colony Optimisation of the Pump Scheduling Problem Oct – Dec 2007
Funding: HPC-Europa Transnational Access Programme *Role:* PI € 4 500
Grant for a research project on parallel optimization at the Barcelona Supercomputing Centre, Spain

Other Merits and Awards

- *Outstanding Teaching Award*, Faculty of Humanities, University of Manchester, UK (Oct 2020)
- Fellow of The Higher Education Academy in recognition of attainment against the UK Professional Standards Framework for teaching and learning support in higher education (Nov 2018)
- "*Rewarding Exceptional Performance*" awarded by Alliance Manchester Business School, UK (2017)
- Successfully completed *Google Summer of Code* program. 10% acceptance rate (May – Aug 2006).
- Erasmus scholarship at the Technische Universität Darmstadt, Germany (Oct 2003 – Jun 2004).

Residence in Foreign Countries

Manchester, United Kingdom	October 2015 – June 2021
Brussels, Belgium	March 2009 – September 2015
Edinburgh, United Kingdom	November 2004 – November 2007
Darmstadt, Germany	October 2003 – August 2004

Interests and Hobbies

- Free/Open Source Software. I have contributed code to the GNU Compiler Collection (GCC), the R project, and other software projects
- Graphic novels, particularly Alan Moore
- Spanish poetry, particularly Angel González
- Languages
- Traveling
- Capoeira, a Brazilian dance and martial art

Theses

[TS2] Manuel López-Ibáñez. *Operational Optimisation of Water Distribution Networks*. PhD thesis, School of Engineering and the Built Environment, Edinburgh Napier University, UK, 2009.

[TS1] Manuel López-Ibáñez. *Multi-objective Ant Colony Optimization*. Diploma thesis, Intellectics Group, Computer Science Department, Technische Universität Darmstadt, Germany, 2004.

Papers in peer-reviewed international journals

[IJ41] Manuel López-Ibáñez, Diederick Vermetten, Johann Dreo, and Carola Doerr. **Using the Empirical Attainment Function for Analyzing Single-objective Black-box Optimization Algorithms**. *IEEE Transactions on Evolutionary Computation*, 2025.
(2022 ISI-JCR impact factor: 14.3, Q1: 6/145 in COMPUTER SCIENCE, ARTIFICIAL INTELLIGENCE)

[IJ40] Raul Martín-Santamaría, Manuel López-Ibáñez, Thomas Stützle, and J. Manuel Colmenar. **On the automatic generation of metaheuristic algorithms for combinatorial optimization problems**. *European Journal of Operational Research*, 2024.
(2020 ISI-JCR impact factor: 5.334, Q1: 15/84 in OPERATIONS RESEARCH & MANAGEMENT SCIENCE)

[IJ39] Antonio J. Nebro, Manuel López-Ibáñez, José García-Nieto, and Carlos A. Coello Coello. **On the automatic design of multi-objective particle swarm optimizers: experimentation and analysis**. *Swarm Intelligence*, 2023.
(2015 ISI-JCR impact factor: 2.577, Q1: 26/130 in COMPUTER SCIENCE, ARTIFICIAL INTELLIGENCE)

[IJ38] Miqing Li, Manuel López-Ibáñez, and Xin Yao. **Multi-Objective Archiving**. *IEEE Transactions on Evolutionary Computation*, 28(3):696–717, 2023.
(2022 ISI-JCR impact factor: 14.3, Q1: 6/145 in COMPUTER SCIENCE, ARTIFICIAL INTELLIGENCE)

[IJ37] Seyed Mahdi Shavarani, Manuel López-Ibáñez, and Joshua D. Knowles. **On Benchmarking Interactive Evolutionary Multi-Objective Algorithms**. *IEEE Transactions on Evolutionary Computation*, 28(4):1084–1098, 2023.
(2022 ISI-JCR impact factor: 14.3, Q1: 6/145 in COMPUTER SCIENCE, ARTIFICIAL INTELLIGENCE)

[IJ36] Atanu Mazumdar, Manuel López-Ibáñez, Tinkle Chugh, and Kaisa Miettinen. **Treed Gaussian Process Regression for Solving Offline Data-Driven Continuous Multiobjective Optimization Problems**. *Evolutionary Computation*, 31(4):375–399, 2023.
(2022 ISI-JCR impact factor: 6.8, Q1: 46/192 in COMPUTER SCIENCE, ARTIFICIAL INTELLIGENCE)

[IJ35] Seyed Mahdi Shavarani, Manuel López-Ibáñez, and Richard Allmendinger. **Detecting Hidden and Irrelevant Objectives in Interactive Multi-Objective Optimization**. *IEEE Transactions on Evolutionary Computation*, 28(2):544–557, 2023.
(2022 ISI-JCR impact factor: 14.3, Q1: 6/145 in COMPUTER SCIENCE, ARTIFICIAL INTELLIGENCE)

[IJ34] Laurens Bliek, Paulo da Costa, Reza Refaei Afshar, Robbert Reijnen, Yingqian Zhang, Tom Catshoek, Daniël Vos, Sicco Verwer, Fynn Schmitt-Ulms, André Hottung, Tapan Shah, Meinolf Sellmann, Kevin Tierney, Carl Perreault-Lafleur, Caroline Leboeuf, Federico Bobbio, Justine Pepin, Warley Almeida Silva, Ricardo Gama, Hugo L. Fernandes, Martin Zaefferer, Manuel López-Ibáñez, and Ekhine Irurozki. **The First AI4TSP Competition: Learning to Solve Stochastic Routing Problems**. *Artificial Intelligence*, 319:103918, 2023.
(2021 ISI-JCR impact factor: 14.4, Q1: 5/145 in COMPUTER SCIENCE, ARTIFICIAL INTELLIGENCE)

★These publications are available at http://lopez-ibanez.eu/publications

[IJ33] Christian Cintrano, Javier Ferrer, Manuel López-Ibáñez, and Enrique Alba. **Hybridization of Evolutionary Operators with Elitist Iterated Racing for the Simulation Optimization of Traffic Lights Programs**. *Evolutionary Computation*, 31(1):31–51, 2023.
(2022 ISI-JCR impact factor: 6.8, Q1: 46/192 in COMPUTER SCIENCE, ARTIFICIAL INTELLIGENCE)

[IJ32] Marcelo De Souza, Marcus Ritt, and Manuel López-Ibáñez. **Capping Methods for the Automatic Configuration of Optimization Algorithms**. *Computers & Operations Research*, 139:105615, 2022.
(2021 ISI-JCR impact factor: 5.159, Q2: 29/100 in OPERATIONS RESEARCH & MANAGEMENT SCIENCE)

[IJ31] Manuel López-Ibáñez, Jürgen Branke, and Luís Paquete. **Reproducibility in Evolutionary Computation**. *ACM Transactions on Evolutionary Learning and Optimization*, 1(4):1–21, 2021.
(44 citations according to Google Scholar)

[IJ30] Babooshka Shavazipour, Manuel López-Ibáñez, and Kaisa Miettinen. **Visualizations for Decision Support in Scenario-based Multiobjective Optimization**. *Information Sciences*, 578:1–21, 2021.
(2020 ISI-JCR impact factor: 6.795, Q1: 18/162 in COMPUTER SCIENCE, INFORMATION SYSTEMS)
(23 citations according to Google Scholar)

[IJ29] Marcelo De Souza, Marcus Ritt, Manuel López-Ibáñez, and Leslie Pérez Cáceres. **ACVIZ: A Tool for the Visual Analysis of the Configuration of Algorithms with irace**. *Operations Research Perspectives*, 8:100186, 2021.
(2021 ISI-JCR impact factor: 3.382, Q2: 32/87 in OPERATIONS RESEARCH & MANAGEMENT SCIENCE)

[IJ28] Lucía Rivadeneira, Jian-Bo Yang, and Manuel López-Ibáñez. **Predicting tweet impact using a novel evidential reasoning prediction method**. *Expert Systems with Applications*, 169:114400, May 2021.
(2020 ISI-JCR impact factor: 6.954, Q1: 23/140 in COMPUTER SCIENCE, ARTIFICIAL INTELLIGENCE)

[IJ27] Juan Esteban Diaz and Manuel López-Ibáñez. **Incorporating Decision-Maker's Preferences into the Automatic Configuration of Bi-Objective Optimisation Algorithms**. *European Journal of Operational Research*, 289(3):1209–1222, 2021. ★ *Editor's Choice Award*
(2020 ISI-JCR impact factor: 5.334, Q1: 15/84 in OPERATIONS RESEARCH & MANAGEMENT SCIENCE)

[IJ26] Patrycja Strycharczuk, Manuel López-Ibáñez, Georgina Brown, and Adrian Leemann. **General Northern English: Exploring regional variation in the North of England with machine learning**. *Frontiers in Artificial Intelligence*, 3(48), 2020.
(2022 ISI-JCR impact factor: 4.000, Q3: 101/192 in COMPUTER SCIENCE, ARTIFICIAL INTELLIGENCE)
(30 citations according to Google Scholar)

[IJ25] Leonardo C. T. Bezerra, Manuel López-Ibáñez, and Thomas Stützle. **Automatically Designing State-of-the-Art Multi- and Many-Objective Evolutionary Algorithms**. *Evolutionary Computation*, 28(2):195–226, 2020.
(2020 ISI-JCR impact factor: 3.277, Q1: 24/110 in COMPUTER SCIENCE, THEORY & METHODS)
(39 citations according to Google Scholar)

[IJ24] Jennifer Bealt, Duncan Shaw, Chris M. Smith, and Manuel López-Ibáñez. **Peer Reviews for Making Cities Resilient: A Systematic Literature Review**. *International Journal of Emergency Management*, 15(4):334–359, 2019.

[IJ23] Javier Ferrer, Manuel López-Ibáñez, and Enrique Alba. **Reliable Simulation-Optimization of Traffic Lights in a Real-World City**. *Applied Soft Computing*, 78:697–711, 2019.
(2017 ISI-JCR impact factor: 3.907, Q1: 17/132 in COMPUTER SCIENCE, ARTIFICIAL INTELLIGENCE)
(31 citations according to Google Scholar)

[IJ22] Simon Wessing and Manuel López-Ibáñez. **Latin Hypercube Designs with Branching and Nested Factors for Initialization of Automatic Algorithm Configuration**. *Evolutionary Computation*,

27(1):129–145, 2018.
(2016 ISI-JCR impact factor: 3.826, Q1: 12/104 in COMPUTER SCIENCE, THEORY & METHODS)

[IJ21] Leonardo C. T. Bezerra, Manuel López-Ibáñez, and Thomas Stützle. **A Large-Scale Experimental Evaluation of High-Performing Multi- and Many-Objective Evolutionary Algorithms**. *Evolutionary Computation*, 26(4):621–656, 2018.
(2016 ISI-JCR impact factor: 3.826, Q1: 12/104 in COMPUTER SCIENCE, THEORY & METHODS)
(46 citations according to Google Scholar)

[IJ20] Elena A. Kabova, Jason C. Cole, Oliver Korb, Manuel López-Ibáñez, Adrian C. Williams, and Kenneth Shankland. **Improved performance of crystal structure solution from powder diffraction data through parameter tuning of a simulated annealing algorithm**. *Journal of Applied Crystallography*, 50(5):1411–1420, Oct 2017.
(2016 ISI-JCR impact factor: 2.614, Q2: 68/166 in CHEMISTRY, MULTIDISCIPLINARY)

[IJ19] Manuel López-Ibáñez, Jérémie Dubois-Lacoste, Leslie Pérez Cáceres, Thomas Stützle, and Mauro Birattari. **The irace Package: Iterated Racing for Automatic Algorithm Configuration**. *Operations Research Perspectives*, 3:43–58, 2016.
(2021 ISI-JCR impact factor: 3.382, Q2: 32/87 in OPERATIONS RESEARCH & MANAGEMENT SCIENCE)
(2067 citations according to Google Scholar)

[IJ18] Leonardo C. T. Bezerra, Manuel López-Ibáñez, and Thomas Stützle. **Automatic Component-Wise Design of Multi-Objective Evolutionary Algorithms**. *IEEE Transactions on Evolutionary Computation*, 20(3):403–417, 2016.
(2016 ISI-JCR impact factor: 10.629, Q1: 1/104 in COMPUTER SCIENCE, THEORY & METHODS)
(120 citations according to Google Scholar)

[IJ17] Christian Blum, Pedro Pinacho, Manuel López-Ibáñez, and José A. Lozano. **Construct, Merge, Solve & Adapt: A New General Algorithm for Combinatorial Optimization**. *Computers & Operations Research*, 68:75–88, 2016. ★ *"Best methodological contribution in operations research" award by the Spanish Society of Statistics and Operations Research – BBVA Foundation*
(2016 ISI-JCR impact factor: 2.600, Q1: 16/83 in OPERATIONS RESEARCH & MANAGEMENT SCIENCE)
(121 citations according to Google Scholar)

[IJ16] Vito Trianni and Manuel López-Ibáñez. **Advantages of Task-Specific Multi-Objective Optimisation in Evolutionary Robotics**. *PLoS One*, 10(8):e0136406, 2015.
(2015 ISI-JCR impact factor: 3.057, Q1: 11/63 in MULTIDISCIPLINARY SCIENCES)

[IJ15] Leslie Pérez Cáceres, Manuel López-Ibáñez, and Thomas Stützle. **Ant colony optimization on a limited budget of evaluations**. *Swarm Intelligence*, 9(2-3):103–124, 2015.
(2015 ISI-JCR impact factor: 2.577, Q1: 26/130 in COMPUTER SCIENCE, ARTIFICIAL INTELLIGENCE)

[IJ14] Jérémie Dubois-Lacoste, Manuel López-Ibáñez, and Thomas Stützle. **Anytime Pareto Local Search**. *European Journal of Operational Research*, 243(2):369–385, 2015.
(2015 ISI-JCR impact factor: 2.679, Q1: 9/82 in OPERATIONS RESEARCH & MANAGEMENT SCIENCE)
(79 citations according to Google Scholar)

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[IC26] Florence Massen, Manuel López-Ibáñez, Thomas Stützle, and Yves Deville. **Experimental Analysis of Pheromone-Based Heuristic Column Generation Using irace**. In M. J. Blesa, C. Blum, P. Festa,

A. Roli, and M. Sampels, editors, *Hybrid Metaheuristics*, volume 7919 of *Lecture Notes in Computer Science*, pages 92–106. Springer, 2013.

[IC25] Andreea Radulescu, Manuel López-Ibáñez, and Thomas Stützle. **Automatically Improving the Anytime Behaviour of Multiobjective Evolutionary Algorithms**. In R. C. Purshouse, P. J. Fleming, C. M. Fonseca, S. Greco, and J. Shaw, editors, *Evolutionary Multi-criterion Optimization, EMO 2013*, volume 7811 of *Lecture Notes in Computer Science*, pages 825–840. Springer, 2013.

[IC24] Franco Mascia, Manuel López-Ibáñez, Jérémie Dubois-Lacoste, and Thomas Stützle. **From Grammars to Parameters: Automatic Iterated Greedy Design for the Permutation Flow-shop Problem with Weighted Tardiness**. In P. M. Pardalos and G. Nicosia, editors, *Learning and Intelligent Optimization, 7th International Conference, LION 7*, volume 7997 of *Lecture Notes in Computer Science*, pages 321–334. Springer, 2013.

[IC23] Leonardo C. T. Bezerra, Manuel López-Ibáñez, and Thomas Stützle. **An Analysis of Local Search for the Bi-objective Bidimensional Knapsack Problem**. In M. Middendorf and C. Blum, editors, *Proceedings of EvoCOP 2013 – 13th European Conference on Evolutionary Computation in Combinatorial Optimization*, volume 7832 of *Lecture Notes in Computer Science*, pages 85–96. Springer, 2013.

[IC22] Manuel López-Ibáñez, Franco Mascia, Marie-Eléonore Marmion, and Thomas Stützle. **Automatic Design of a Hybrid Iterated Local Search for the Multi-Mode Resource-Constrained Multi-Project Scheduling Problem**. In G. Kendall, G. Vanden Berghe, and B. McCollum, editors, *Multidisciplinary International Conference on Scheduling: Theory and Applications (MISTA 2013)*, pages 1–6, 2013.

[IC21] Leonardo C. T. Bezerra, Manuel López-Ibáñez, and Thomas Stützle. **Automatic Generation of Multi-Objective ACO Algorithms for the Biobjective Knapsack**. In M. Dorigo et al., editors, *Swarm Intelligence, 8th International Conference, ANTS 2012*, volume 7461 of *Lecture Notes in Computer Science*, pages 37–48. Springer, 2012.

[IC20] Manuel López-Ibáñez, Tianjun Liao, and Thomas Stützle. **On the anytime behavior of IPOP-CMA-ES**. In C. A. Coello Coello et al., editors, *Parallel Problem Solving from Nature – PPSN XII, Part I*, volume 7491 of *Lecture Notes in Computer Science*, pages 357–366. Springer, 2012.

[IC19] Dimo Brockhoff, Manuel López-Ibáñez, Boris Naujoks, and Günther Rudolph. **Runtime Analysis of Simple Interactive Evolutionary Biobjective Optimization Algorithms**. In C. A. Coello Coello et al., editors, *Parallel Problem Solving from Nature – PPSN XII, Part I*, volume 7491 of *Lecture Notes in Computer Science*, pages 123–132. Springer, 2012.

[IC18] Jérémie Dubois-Lacoste, Manuel López-Ibáñez, and Thomas Stützle. **Pareto Local Search Algorithms for Anytime Bi-objective Optimization**. In J.-K. Hao and M. Middendorf, editors, *Proceedings of EvoCOP 2012 – 12th European Conference on Evolutionary Computation in Combinatorial Optimization*, volume 7245 of *Lecture Notes in Computer Science*, pages 206–217. Springer, 2012.

[IC17] Jérémie Dubois-Lacoste, Manuel López-Ibáñez, and Thomas Stützle. **Automatic Configuration of State-of-the-art Multi-Objective Optimizers Using the TP+PLS Framework**. In N. Krasnogor and P. L. Lanzi, editors, *Proceedings of the Genetic and Evolutionary Computation Conference, GECCO 2011*, pages 2019–2026. ACM Press, 2011. ★ *Nominated for the best paper award of the "Self-*" track*

[IC16] Stefan Eppe, Manuel López-Ibáñez, Thomas Stützle, and Yves De Smet. **An Experimental Study of**

Preference Model Integration into Multi-Objective Optimization Heuristics. In *Proceedings of the 2011 Congress on Evolutionary Computation (CEC 2011)*, pages 2751–2758, 2011. IEEE Press.

[IC15] Manuel López-Ibáñez, Joshua D. Knowles, and Marco Laumanns. **On Sequential Online Archiving of Objective Vectors**. In R. H. C. Takahashi, K. Deb, E. F. Wanner, and S. Greco, editors, *Evolutionary Multi-criterion Optimization, EMO 2011*, volume 6576 of *Lecture Notes in Computer Science*, pages 46–60. Springer, 2011.
(80 citations according to Google Scholar)

[IC14] Carlos M. Fonseca, Andreia P. Guerreiro, Manuel López-Ibáñez, and Luís Paquete. **On the Computation of the Empirical Attainment Function**. In R. H. C. Takahashi, K. Deb, E. F. Wanner, and S. Greco, editors, *Evolutionary Multi-criterion Optimization, EMO 2011*, volume 6576 of *Lecture Notes in Computer Science*, pages 106–120. Springer, 2011.

[IC13] Manuel López-Ibáñez and Thomas Stützle. **Automatic Configuration of Multi-Objective ACO Algorithms**. In M. Dorigo et al., editors, *Swarm Intelligence, 7th International Conference, ANTS 2010*, volume 6234 of *Lecture Notes in Computer Science*, pages 95–106. Springer, 2010.

[IC12] Michael Maur, Manuel López-Ibáñez, and Thomas Stützle. **Pre-scheduled and adaptive parameter variation in Max-Min Ant System**. In H. Ishibuchi et al., editors, *Proceedings of the 2010 Congress on Evolutionary Computation (CEC 2010)*, pages 3823–3830, 2010. IEEE Press.

[IC11] Manuel López-Ibáñez and Thomas Stützle. **The impact of design choices of multi-objective ant colony optimization algorithms on performance: An experimental study on the biobjective TSP**. In M. Pelikan and J. Branke, editors, *Proceedings of the Genetic and Evolutionary Computation Conference, GECCO 2010*, pages 71–78. ACM Press, 2010. ★ *Best paper award*

[IC10] Jérémie Dubois-Lacoste, Manuel López-Ibáñez, and Thomas Stützle. **Adaptive "Anytime" Two-Phase Local Search**. In C. Blum and R. Battiti, editors, *Learning and Intelligent Optimization, 4th International Conference, LION 4*, volume 6073 of *Lecture Notes in Computer Science*, pages 52–67. Springer, 2010. ★ *Best paper award*

[IC9] Manuel López-Ibáñez and Thomas Stützle. **An Analysis of Algorithmic Components for Multiobjective Ant Colony Optimization: A Case Study on the Biobjective TSP**. In P. Collet, N. Monmarché, P. Legrand, M. Schoenauer, and E. Lutton, editors, *Artificial Evolution: 9th International Conference, Evolution Artificielle, EA, 2009*, volume 5975 of *Lecture Notes in Computer Science*, pages 134–145. Springer, 2010. ★ *3rd best paper award*

[IC8] Manuel López-Ibáñez, Christian Blum, Dhananjay Thiruvady, Andreas T. Ernst, and Bernd Meyer. **Beam-ACO based on stochastic sampling for makespan optimization concerning the TSP with time windows**. In C. Cotta and P. Cowling, editors, *Proceedings of EvoCOP 2009 – 9th European Conference on Evolutionary Computation in Combinatorial Optimization*, volume 5482 of *Lecture Notes in Computer Science*, pages 97–108. Springer, 2009.

[IC7] Manuel López-Ibáñez and Christian Blum. **Beam-ACO Based on Stochastic Sampling: A Case Study on the TSP with Time Windows**. In T. Stützle, editor, *Learning and Intelligent Optimization, Third International Conference, LION 3*, volume 5851 of *Lecture Notes in Computer Science*, pages 59–73. Springer, 2009.

[IC6] Jérémie Dubois-Lacoste, Manuel López-Ibáñez, and Thomas Stützle. **Effective Hybrid Stochastic Local Search Algorithms for Biobjective Permutation Flowshop Scheduling**. In M. J. Blesa, C. Blum, L. Di Gaspero, A. Roli, M. Sampels, and A. Schaerf, editors, *Hybrid Metaheuristics*, volume 5818 of *Lecture Notes in Computer Science*, pages 100–114. Springer, 2009.

[IC5] Manuel López-Ibáñez, T. Devi Prasad, and Ben Paechter. **Parallel Optimisation Of Pump Schedules With A Thread-Safe Variant Of EPANET Toolkit**. In J. E. van Zyl, A. A. Ilemobade, and H. E. Jacobs, editors, *Proceedings of the 10th Annual Water Distribution Systems Analysis Conference (WDSA 2008)*. ASCE, Aug 2008.

[IC4] Carlos M. Fonseca, Luís Paquete, and Manuel López-Ibáñez. **An improved dimension-sweep algorithm for the hypervolume indicator**. In *Proceedings of the 2006 Congress on Evolutionary Computation (CEC 2006)*, pages 1157–1163, Jul 2006. IEEE Press.
(658 citations according to Google Scholar)

[IC3] Manuel López-Ibáñez, T. Devi Prasad, and Ben Paechter. **Multi-objective Optimisation of the Pump Scheduling Problem using SPEA2**. In *Proceedings of the 2005 Congress on Evolutionary Computation (CEC 2005)*, volume 1, pages 435–442, Sept 2005. IEEE Press.
(65 citations according to Google Scholar)

[IC2] Manuel López-Ibáñez, T. Devi Prasad, and Ben Paechter. **Optimal Pump Scheduling: Representation and Multiple Objectives**. In D. A. Savic, G. A. Walters, R. King, and S. Thiam-Khu, editors, *Proceedings of the Eighth International Conference on Computing and Control for the Water Industry (CCWI 2005)*, volume 1, pages 117–122, Sept 2005.

[IC1] Manuel López-Ibáñez, Luís Paquete, and Thomas Stützle. **On the Design of ACO for the Biobjective Quadratic Assignment Problem**. In M. Dorigo et al., editors, *Ant Colony Optimization and Swarm Intelligence, 4th International Workshop, ANTS 2004*, volume 3172 of *Lecture Notes in Computer Science*, pages 214–225. Springer, 2004.
(76 citations according to Google Scholar)

Software publicly available

[SW7] **MOACO framework**. The multi-objective ant colony optimization (MOACO) framework is able to instantiate most MOACO algorithms from the literature, and also combine components that were never studied in the literature. This is the software originally proposed in [IJ9], and used later in [IJ10][IC21]. [http://lopez-ibanez.eu/moaco]

[SW6] **irace R package**. Implements the Iterated F-Race procedure for automatic configuration (offline tuning) of parametric optimization algorithms. Lead developer and co-maintainer. The irace package is described in [TR1][IJ19]. Close to one-hundred papers have made use of irace, as evidenced by the high number of citations of the TR.
[https://mlopez-ibanez.github.io/irace/] (More than $60,000$ total downloads by Nov 2019)

[SW5] **Multi-objective Archivers**. This software implements most of the currently available archiving algorithms (archivers) in a common framework for simplifying their comparison and analysis. Developed in collaboration with Joshua Knowles and Marco Laumanns [IC15].
[http://lopez-ibanez.eu/archivers]

[SW4] **Graphical tools for the exploratory analysis of bi-objective optimisation algorithms** (`eaf` R package). Developed in collaboration with Thomas Stützle and Luís Paquete [BC2]. Lead developer and current maintainer. [http://lopez-ibanez.eu/eaftools] (More than $21,000$ total downloads by Oct 2018)

[SW3] **Software for computing the hypervolume indicator**. Implementation of our $O(n^{d-2} \log n)$ algorithm [IC4]. Co-authored with Carlos M. Fonseca and Luís Paquete.
[http://lopez-ibanez.eu/hypervolume]

This software has been incorporated into two R packages, `mco` (multi criteria optimization algorithms and related functions) [http://cran.r-project.org/web/packages/mco] and `emoa` (evolutionary multiobjective optimization algorithms) [http://cran.r-project.org/web/packages/emoa], and it is used by the project "desiRe" [http://r-forge.r-project.org/projects/desire].

[SW2] **EPANET for GNU/Linux.** A version of the hydraulic simulator library EPANET Toolkit, improved for using it in optimisation algorithms. Sole developer.
[http://lopez-ibanez.eu/epanetlinux]

[SW1] **A Thread-Safe Variant of the EPANET Toolkit for Parallel Applications.** An extensive modification of the EPANET Toolkit for parallel optimisation algorithms [IC5]. Sole developer.
[http://lopez-ibanez.eu/epanet-thread-safe]

Oral presentations during conferences with scientific selection committee

(Only those presented by myself and excluding presentations associated to peer-reviewed conference papers, which are listed above)

[OP38] **Tutorial on Optimization Challenges at the European Space Agency**. In *Genetic and Evolutionary Computation Conference, GECCO*, Lisbon, Portugal, July 16, 2023.

[OP37] **Tutorial on Optimization Challenges at the European Space Agency**. In *Genetic and Evolutionary Computation Conference, GECCO*, Boston, USA, July 10, 2022.

[OP36] **Tutorial on Automated Algorithm Configuration and Design**. In *Genetic and Evolutionary Computation Conference, GECCO*, Boston, USA, July 10, 2022.

[OP35] **A Self-Adaptive Bayesian Optimizer based on Clustered Kriging and Feasibility Classification for the Black-box Time-Dependent Orienteering Problem with Stochastic Weights and Time Windows**. In *Data Science Meets Optimisation Workshop, International Joint Conference on Artificial Intelligence (IJCAI-2021)*, Montreal, Canda, August 20, 2021.

[OP34] **Tutorial on Replicability and reproducibility in evolutionary optimization**. In *Genetic and Evolutionary Computation Conference, GECCO*, Lille, France, July 11, 2021.

[OP33] **Tutorial on Automated Algorithm Configuration and Design**. In *Genetic and Evolutionary Computation Conference, GECCO*, Lille, France, July 11, 2021.

[OP32] **Some Thoughts on Benchmarking in Combinatorial Optimization**. In *Lorentz Workshop on "Benchmarked: Optimization Meets Machine Learning"*, Leiden, The Netherlands, Nov, 11 2020. Invited Talk. ★

[OP31] **Late to the Party: Reproducible Research in Evolutionary Computation**. In *Workshop on "Good Benchmarking Practices for Evolutionary Computation", Parallel Problem Solving from Nature, PPSN XVI*, Leiden, The Netherlands, Sept, 5 2020. Invited Talk. ★

[OP30] **Tutorial on Automated Algorithm Configuration and Design**. In *Genetic and Evolutionary Computation Conference, GECCO*, Cancún, México, July 9, 2020.

[OP29] **Automatic Machine Learning and Optimisation and the Human-in-the-Loop**. In *Human Centred Analytics and AI for Social Science, ESRC Festival of Social Science*, Manchester Metropolitan University, UK, Nov, 6 2019. Invited Talk. ★

[OP28] **Automated Algorithm Configuration and Selection for Theoreticians**. In *Dagstuhl Seminar on Theory of Randomized Optimization Heuristics*, Schloss Dagstuhl - Leibniz-Center for Informatics, Wadern, Germany, October 21-25, 2019. Invited Talk. ★

[OP27] **Automatic Configuration of SLS Algorithms**. In *International Workshop on Stochastic Local Search Algorithms (SLS2019)*, Université de Lille, France, September 12, 2019. Keynote Talk. ★

[OP26] **Automated Design of Metaheuristic Algorithms: Methods, Applications and Perspectives**. In *Optimization Days (Journées de l'Optimisation) 2019*, HEC Montréal, Canada, May 14, 2019. Keynote Talk. ★

[OP25] **Automatic Design of Hybrid Metaheuristics from Component-Wise Algorithmic Frameworks**. In *Hybrid Metaheuristics*, Concepción, Chile, January 17, 2019. Keynote Talk. ★

[OP24] **Tutorial on Automated Offline Design of Algorithms**. In *Genetic and Evolutionary Computation Conference, GECCO*, Kyoto, Japan, July 15-19, 2018.

[OP23] **Semi-interactive Automatic Design of Bi-objective Optimizers**. In *1st International Workshop on Computational Intelligence for Massive Optimization (CIMO 2018)*, Nagano, Japan, July 12, 2018. Invited Talk. ★

[OP22] **Data-Driven design of multi-objective optimizers**. In *Dagstuhl Seminar on Personalized Multiobjective Optimization*, Schloss Dagstuhl - Leibniz-Center for Informatics, Wadern, Germany, January 15-19, 2017. Invited Talk. ★

[OP21] **Tutorial on Automatic Offline Design of Algorithms**. In *Genetic and Evolutionary Computation Conference, GECCO*, Berlin, Germany, July 15-19, 2017.

[OP20] **Challenges in Automated Algorithm Design: Representativeness, One-Shot Expensive Scenarios, Parameter Importance and Sensitivity, and Human-in-the-Loop**. In *Dagstuhl Seminar on Automated Algorithm Selection and Configuration*, Schloss Dagstuhl - Leibniz-Center for Informatics, Wadern, Germany, October 9-14, 2016. Invited Talk. ★

[OP19] **How to Design a New State-of-the-Art Multi-objective Evolutionary Algorithm Every Weekend**. In *28th European Conference on Operational Research, EURO 2016*, Poznan, Poland, July 3–6, 2016.

[OP18] **Automatic Configuration and Design of Optimization Algorithms**. In *43rd CREST Open Workshop*, University College London, UK, October 26-27, 2015. Invited Talk. ★

[OP17] **Tutorial on Automatic (Offline) Configuration of Algorithms**. In *Genetic and Evolutionary Computation Conference, GECCO*, Madrid, Spain, July 11-15, 2015.

[OP16] **Machine Decision Makers: from Modeling Preferences to Modeling Decision Makers**. In *Dagstuhl Seminar on Understanding Complexity in Multiobjective Optimization*, Schloss Dagstuhl - Leibniz-Center for Informatics, Wadern, Germany, January 12-16, 2015. Invited Talk. ★

[OP15] **A Template for Designing Single-Solution Hybrid Metaheuristics**. In *Workshop on Metaheuristic Design Patterns (MetaDeeP), Genetic and Evolutionary Computation Conference, GECCO*, Vancouver, Canada, July 12-16, 2014.

[OP14] **Tutorial on Automatic (Offline) Configuration of Algorithms**. In *Genetic and Evolutionary Computation Conference, GECCO*, Vancouver, Canada, July 12-16, 2014.

[OP13] **Deconstructing Multi-objective Evolutionary Algorithms**. In *28th Annual Conference of the Belgian Operations Research Society, ORBEL 28*, Mons, Belgium, January 30-31, 2014.

[OP12] **Tutorial on Automatic (Offline) Configuration of Algorithms**. In *Genetic and Evolutionary Computation Conference, GECCO 2013*, Amsterdam, The Netherlands, July 6-10, 2013.

[OP11] **From Grammars to Parameters: Automatic Design of Iterated Greedy Algorithms**. In *27th Annual Conference of the Belgian Operations Research Society, ORBEL 27*, Kortrijk, Belgium, February 7-8, 2013.

[OP10] **Automatic Configuration of Optimization Algorithms**. In *Fourth International Workshop on Model-based Metaheuristics, Matheuristics 2012*, Angra dos Reis, Brazil, Sept 17-20, 2012.

[OP9] **Automatic Design of Algorithms with iRace for Multi-Objective Optimization and Anytime Optimization**. In *12th International Conference on Parallel Problem Solving From Nature, PPSN XII*, Taormina, Italy, September 1-5, 2012. Invited Talk. ★

[OP8] **Automatic Design of Multi-Objective Algorithms**. In *25th European Conference on Operational Research, EURO 2012*, Vilnius, Lithuania, July 8-11, 2012.

[OP7] **Automatically Improving the Anytime Behavior of Optimisation Algorithms**. In *26th Annual Conference of the Belgian Operations Research Society, ORBEL 26*, Brussels, Belgium, February 2-3, 2012.

[OP6] **Offline Learning in Multi-Objective Optimization**. In *Dagstuhl Seminar on Learning in Multiobjective Optimization*, Schloss Dagstuhl - Leibniz-Center for Informatics, Wadern, Germany, January 22-27, 2012. Invited Talk. ★

[OP5] **Improving the Anytime Behaviour of Optimisation Algorithms by Automatic Algorithm Configuration Tools**. In *Metaheuristics International Conference, MIC 2011*, Udine, Italy, July 25-28, 2011.

[OP4] **Automatic Design of Ant Colony Optimization Algorithms for Bi-objective Problems**. In *25th Annual Conference of the Belgian Operations Research Society, ORBEL 25*, Ghent, Belgium, February 10-11, 2011.

[OP3] **Tutorial on Ant Colony Optimization**. In *Genetic and Evolutionary Computation Conference, GECCO 2010*, Portland, Oregon, USA, July 7-11, 2010.

[OP2] **Graphical tools for the analysis of bi-objective optimization algorithms**. In *Workshop on Theoretical Aspects of Evolutionary Multiobjective Optimization, Genetic and Evolutionary Computation Conference, GECCO 2010*, Portland, Oregon, USA, July 7-11, 2010.

[OP1] Manuel López-Ibáñez, T. Devi Prasad, and Ben Paechter. **Solving Optimal Pump Control Problem using Max-Min Ant System**. In D. Thierens et al., editors, *Proceedings of the Genetic and Evolutionary Computation Conference, GECCO 2007*, volume 1, page 176. ACM Press, 2007. (Poster)

Notable Technical/Scientific Reports

(These publications are notable for various reasons and are either pending or not suitable for peer-reviewed publication)

[TR7] Manuel López-Ibáñez, Leslie Pérez Cáceres, and Thomas Stützle. **irace: A Tool for the Automatic Configuration of Algorithms**. *International Federation of Operational Research Societies (IFORS) News*, 14(2):30–32, Jun 2020.

[TR6] Manuel López-Ibáñez. **GECCO2019@Prague: Editor-in-Chief Report**. *SIGEVOlution*, 12(4):3–7, 2019.

[TR5] Dimo Brockhoff, Roberto Calandra, Manuel López-Ibáñez, Frank Neumann, and Selvakumar Ulaganathan. **Meta-modeling for (interactive) multi-objective optimization (WG5)**. In K. Klamroth, J. D. Knowles, G. Rudolph, and M. M. Wiecek, editors, *Personalized Multiobjective Optimization: An Analytics Perspective (Dagstuhl Seminar 18031)*, volume 8(1) of *Dagstuhl Reports*, pages 85–94. Schloss Dagstuhl – Leibniz-Zentrum für Informatik, Germany, 2018.

[TR4] Jürgen Branke, Salvatore Corrente, Salvatore Greco, Miłosz Kadziński, Manuel López-Ibáñez, Vincent Mousseau, Mauro Munerato, and Roman Słowiński. **Behavior-Realistic Artificial Decision-Makers to Test Preference-Based Multi-objective Optimization Method (Working Group "Machine Decision-Making")**. In S. Greco, K. Klamroth, J. D. Knowles, and G. Rudolph, editors, *Understanding Complexity in Multiobjective Optimization (Dagstuhl Seminar 15031)*, volume 5(1) of *Dagstuhl Reports*, pages 110–116. Schloss Dagstuhl – Leibniz-Zentrum für Informatik, Germany, 2015.

[TR3] Vito Trianni and Manuel López-Ibáñez. **Advantages of Multi-Objective Optimisation in Evolutionary Robotics: Survey and Case Studies**. Technical Report TR/IRIDIA/2014-014, IRIDIA, Université Libre de Bruxelles, Belgium, 2014.

[TR2] Anne Auger, Dimo Brockhoff, Manuel López-Ibáñez, Kaisa Miettinen, Boris Naujoks, and Günther Rudolph. **Which questions should be asked to find the most appropriate method for decision making and problem solving? (Working Group "Algorithm Design Methods")**. In S. Greco, J. D. Knowles, K. Miettinen, and E. Zitzler, editors, *Learning in Multiobjective Optimization (Dagstuhl Seminar 12041)*, volume 2(1) of *Dagstuhl Reports*, pages 92–93. Schloss Dagstuhl – Leibniz-Zentrum für Informatik, Germany, 2012.

[TR1] Manuel López-Ibáñez, Jérémie Dubois-Lacoste, Thomas Stützle, and Mauro Birattari. **The irace package, Iterated Race for Automatic Algorithm Configuration**. Technical Report TR/IRIDIA/2011-004, IRIDIA, Université Libre de Bruxelles, Belgium, 2011. Published in Operations Research Perspectives [IJ19].
(2067 citations according to Google Scholar)

Other invited talks

Incorporating Decision-Maker's Preferences into the Automatic Configuration of Bi-objective Optimisation Algorithms 24/2/2023
University of Exeter, UK.

Incorporating Decision-Maker's Preferences into the Automatic Configuration of Bi-objective Optimisation Algorithms 15/2/2023
Joint Lectures in Evolutionary Algorithms (JoLEA), Leiden University, The Netherlands.

Dimensions of Reproducibility in Optimisation Research 19/1/2022
Tools, Practices & Systems Seminar, The Alan Turing Institute, UK.

Local Search for Combinatorial Optimization Problems with Multiple Objectives 29/11/2021
Universidad Rey Juan Carlos, Madrid, Spain.

Incorporating Decision-Maker's Preferences into the Automatic Configuration of Bi-objective Optimisation Algorithms 15/9/2021
LIP6, Sorbonne University, Paris, France.

Automatic Algorithm Configuration and Design 20/7/2021
Lancaster Intelligent, Robotic and Autonomous Systems Centre,
University of Lancaster, UK.

Automatic Configuration and Design of Algorithms 18/12/2019
XXIII Seminar "Latest Advances in Computer Science 2019" ("Últimos Avances en Informática"),
Universidad de La Laguna, Tenerife, Spain.

Automatic Tuning of Compiler Options using irace 8/9/2018
GNU Tools Cauldron 2018, International Workshop on the GNU Compiler Toolchain,
Manchester, UK.

Intersections between Machine Learning and Optimization 21/8/2018
University of Jyväskylä, Finland.

Offline configuration and online control in optimization algorithms: Friends or foes? 6/6/2018
Department of Computer Science, University of York, York, UK.

Why Automated Algorithm Design is Inevitable 16/5/2018
KULAK, KU Leuven, Belgium.

Reliable Simulation-Optimization of Traffic Lights in a Real-World City 18/12/2017
Industrial Optimization Group, University of Jyväskylä, Finland.

Analysing Stochastic Multi-criteria Data by means of the Empirical Attainment Function 12/12/2017
Industrial Optimization Group, University of Jyväskylä, Finland.

Automatic Offline Design of Algorithms 1/12/2017
Industrial Optimization Group, University of Jyväskylä, Finland.

Let my configurator tune your algorithm: Hyper-parameter optimisation with irace 19/10/2017
Machine Learning and Optimisation Group, University of Manchester, UK.

Let the Cloud design your next multi-objective optimiser 27/10/2016
Computer Science Department, University of Exeter, UK.

How (not) to design the new best optimisation algorithm every weekend 4/5/2016
Department of Automatic Control & Systems Engineering (ACSE), University of Sheffield, UK.

A practical introduction to irace 10/6/2015
NEO Research Group, University of Málaga, Spain.

Optimization for Complex Real-World Problems 5/3/2015
University of Namur, Belgium.

Metaheuristics From Complex Problems to Automatic Configuration 10/11/2014
Institute of Applied Mathematics and Information Technology (IMATI), Milano, Italy.

Automatic Configuration and Design of Algorithms 10/11/2014
KU Leuven, Belgium.

irace: Iterated Racing for Automatic Algorithm Configuration 6/5/2014
Université of Liège, Belgium.

Generating Hybrid Local Search Algorithms From a Grammar 11/4/2014
KULAK, KU Leuven, Belgium.

The irace Package: Iterated Race for Automatic Algorithm Configuration and Scoring Function Parameterisation 17/10/2011
Cambridge Crystallographic Data Centre, Cambridge, United Kingdom.
Invited by Dr. Oliver Korb.

Conference Organization

- Editor-in-Chief of the "*Genetic and Evolutionary Computation Conference (GECCO)*", Prague, Czech Republic (2019). (More than **600** participants)
- Area Chair for AutoML Conference 2022 (Main Track).
- Stream Organiser:

  2022 "*Multiobjective Combinatorial Optimization*" stream of the 32nd European Conference on Operational Research (EURO), Espoo, Finland, with Matthias Ehrgott

  2021 "*Multiobjective Combinatorial Optimization*" stream of the 31st European Conference on Operational Research (EURO), Athens, Greece, with Luís Paquete

  2020 "*Multiobjective Optimization*" stream of the 22nd Conference of the International Federation of Operational Research Societies (IFORS), Seoul, Korea, with Richard Allmendinger

  2018 "*Multiobjective Optimization*" stream of the 29th European Conference on Operational Research (EURO), Valencia, Spain, with Kaisa Miettinen and Michael Emmerich

- Programme Chair:

  2018 "*18th European Conference on Evolutionary Computation in Combinatorial Optimisation*" (EvoCOP), Parma, Italy, with Arnaud Liefooghe

  2017 "*17th European Conference on Evolutionary Computation in Combinatorial Optimisation*" (EvoCOP), Amsterdam, The Netherlands, with Bin Hu

  2016 "*Tenth International Conference on Swarm Intelligence*" (ANTS), Brussels, Belgium, with Xiaodong Li and Kazuhiro Ohkura

  2016 "*14th International Conference on Parallel Problem Solving from Nature*" (PPSN), Edinburgh, UK, with Gabriela Ochoa and Julia Handl

- Dagstuhl Seminar 23332 "Synergizing Theory and Practice of Automated Algorithm Design for Optimization" (13th–18 August 2023), co-organised with Martin S. Krejca (Ecole Polytechnique - Palaiseau, FR), Marius Lindauer (Leibniz Universität Hannover, DE) and Katherine M. Malan (UNISA - Pretoria, ZA).
- Co-organiser, with Juergen Branke, of the *Workshop on Bayesian Optimisation with Multiple Objectives: Open Challenges for Machine Learning and Optimisation*, funded by The Alan Turing Institute and the University of Warwick, February 2023.
- Local Chair of the 13th International Conference on Swarm Intelligence (ANTS 2022), Malaga, Spain (2nd–4 November 2022).
- Co-organiser, with Sašo Džeroski, Dragi Kocev, and Bertrand Le Saux, of "*Space and Artificial Intelligence*", online conference in association with ECML PKDD 2021, September 2021.
- Co-Chair, with Anna V. Kononova (LIACS, Leiden University, The Netherlands) Olaf Mersmann (Technische Hochschule Köln) Diederick Vermetten (Leiden Institute for Advanced Computer Science), Richard Allmendinger (The University of Manchester, UK) and Youngmin Kim (University of Manchester, UK), of the "*Workshop on Strict Box-Constraint Optimization Studies (SBOX-COST)*", at the Genetic and Evolutionary Computation Conference (GECCO), 2023.

- Co-Chair, with John Woodward and Daniel Tauritz, of the "*Workshop on Evolutionary Computation for the Automated Design of Algorithms (ECADA)*", at the Genetic and Evolutionary Computation Conference (GECCO), 2015–2018, 2021–2022.
- Co-Chair, with Holger H. Hoos, of the "*Evolutionary Combinatorial Optimization and Metaheuristics Track*" at the Genetic and Evolutionary Computation Conference (GECCO), Denver, USA (2016).
- Chair and Organizer of the session "*Algorithmic Components of Evolutionary Multi-objective Optimization*" at the 28th European Conference on Operational Research, EURO 2016, Poznan, Poland (2016).
- Co-Chair, with Sanaz Mostaghim, of the "*Ant Colony Optimization and Swarm Intelligence Track*" at the Genetic and Evolutionary Computation Conference (GECCO), Madrid, Spain (2015).
- Co-organizer, with Franco Mascia, of the "*COMEX Workshop on Practical Automatic Algorithm Configuration*", Brussels, Belgium (November 2014).
- Co-Chair, with Thomas Stützle, of the "*Evolutionary Combinatorial Optimization and Metaheuristics Track*" at the Genetic and Evolutionary Computation Conference (GECCO), Amsterdam, The Netherlands (2013).
- Web Chair CIBCB 2017 IEEE International Conference on Computational Intelligence in Bioinformatics and Computational Biology. https://ewh.ieee.org/conf/cibcb/2017/

Editorial Activity

- *ACM Transactions on Evolutionary Learning and Optimization (TELO)*, Editorial Board Member and Associate Editor since July 2019, Area Editor since August 2020, co-Editor-in-Chief with Prof Juergen Branke (University of Warwick) since April 2022.
- *Artificial Intelligence (AIJ)*, Editorial Board Member and Standard Editor since March 2024.
- Guest Editorial Board of the Journal Track of the *European Conference on Machine Learning and Principles and Practice of Knowledge Discovery in Databases* (ECML-PKDD), 2021–2023.
- *Evolutionary Computation*, MIT Press, Editorial Board Member and Associate Editor since April 2019. (2020 ISI-JCR IF: 3.277)
- *Operations Research Perspectives*, Elsevier, editorial board member since July 2016. (2021 ISI-JCR IF: 3.382)
- *Engineering Applications of Artificial Intelligence (EAAI)*, Elsevier, Editorial Board Member and Associate Editor (January 2022 – May 2023).
  (2020 ISI-JCR IF: 6.212)
- *Swarm Intelligence*, Springer, Associate Editor (October 2015 – December 2022).
  (2020 ISI-JCR IF: 2.143)

Reviews of Project Proposals

- Reviewer for the Evaluation Committee of the French Institute for Research in Digital Science and Technology (INRIA), France, 2023.
- Opinion letter for doctoral applicant. Grants and fellowships call, Fund for Scientific Research (FNRS), Belgium, 2023.
- Engineering and Physical Sciences Research Council (EPSRC), United Kingdom, 2012, 2018, 2022.
- External Individual Evaluation of European Research Council (ERC) Starting Grant, 2022.
- Spanish National Programme of Industrial R&D and Innovation ("Ayudas para contratos Torres Quevedo"), Spain, 2021.
- Spanish National Programme of R&D Projects ("Programa Estatal Proyectos de I+D de Generación de Conocimiento Tipo B"), Spain, 2020.
- National Fund for Scientific and Technological Research (FONDECYT), Chile, 2020.
- Ministere de l'enseignement superieur et de la recherche, Programme ECOS-SUD, France, 2020.
- Remote Referee of European Research Council (ERC) Consolidator Grant, 2020.
- National Commission for Scientific and Technological Research (CONICYT), Chile, 2019.
- Leverhulme Trust Grant, United Kingdom, 2017.
- Romanian National Council for Development and Innovation, Romania. Evaluation of project proposals for 2011 funding call.

Conference Program Committee Membership

GECCO: Genetic and Evolutionary Computation Conference
Melbourne, Australia (2024); Lisbon, Portugal (2023); Boston, USA (2022); Lille, France (2021); Cancun, Mexico (2020); Prague, Czech Republic (2019); Kyoto, Japan (2018); Berlin, Germany (2017); Denver, USA (2016); Vancouver, Canada (2014); Philadelphia, USA (2012); Dublin, Ireland (2011); Portland, Oregon, USA (2010); Seattle, WA, USA (2006)

PPSN: International Conference on Parallel Problem Solving From Nature
Hagenberg, Austria (2024); Dortmund, Germany (2022); Leiden, The Netherlands (2020); Coimbra, Portugal (2018); Ljubljana, Slovenia (2014); Taormina, Italy (2012)

MIC: Metaheuristics International Conference
Lorient, France (2024); Ortigia-Syracuse, Italy (2022)

SPAICE: European Space Agency SPAICE Conference / IAA Conference on AI in and for Space
European Centre for Space Applications and Telecommunications (ECSAT), UK (2024)

EMO: International Conference on Evolutionary Multi-Criterion Optimization
Leiden, The Netherlands (2023); Shenzhen, China (2021); Michigan, USA (2019); Munster, Germany (2017); Guimarães, Portugal (2015); Sheffield, UK (2013)

WCCI: IEEE World Congress on Computational Intelligence / CEC: Congress on Evolutionary Computation
Kraków, Poland (2021); Glasgow, UK (2020); Rio de Janeiro, Brasil (2018); Donostia - San Sebastián, Spain (2017); Vancouver, Canada, (2016); Sendai, Japan (2015); Beijing, China (2014); Cancun, Mexico (2013)

EA: Evolution Artificielle, Artificial Evolution

Bordeaux, France (2024); Exeter, England (2022); Mulhouse, France (2019); Paris, France (2017); Lyon, France (2015)

IJCAI: International Joint Conference on Artificial Intelligence

Montreal, Canada (2021); Buenos Aires, Argentina (2015); Beijing, China (2013); Barcelona, Spain (2011)

EvoCOP: European Conference on Evolutionary Computation in Combinatorial Optimisation

Aberystwyth, Wales, United Kingdom (2024); Brno, Czech Republic (2023); Madrid, Spain (2022); Seville, Spain (2021); Seville, Spain (2020); Leipzig, Germany (2019); Parma, Italy (2018)

SSCI: IEEE Symposium Series on Computational Intelligence

Singapore, (2022)

FOGA: ACM/SIGEVO Workshop on Foundations of Genetic Algorithms

Dornbirn, Austria (2021); Potsdam, Germany (2019)

ANTS: International Conference on Swarm Intelligence

Barcelona, Spain (2020); Rome, Italy (2018); Brussels, Belgium (2010, 2012, 2014)

HM: Hybrid Metaheuristics

Concepción, Chile (2019); Plymouth, United Kingdom (2016); Hamburg, Germany (2014); Viena, Austria (2010); Udine, Italy (2009)

SLS: International Workshop on Stochastic Local Search Algorithms

University of Lille, Lille, France (2019)

MOD: International Workshop on Machine Learning, Optimization and Big Data

Volterra, Italy (2016)

LION: Learning and Intelligent Optimization

LION9, Lille, France (2015); LION8, Florida, USA (2014); LION7, Catania, Italy (2013); LION6, Paris, France (2012); LION5, Rome, Italy (2011); LION4, Venice, Italy (2010)

IAM: 6th Workshop on Industrial Applications of Metaheuristics (at GECCO)

Lille, France (2021)

BBOB: International Workshop on Black Box Discrete Optimization Benchmarking (at GECCO)

Kyoto, Japan (2018)

ICACI: International Workshop on Benchmarking of Computational Intelligence Algorithms (BOCIA) at the Tenth International Conference on Advanced Computational Intelligence

Xiamen, China (2018)

ICORES: International Conference on Operations Research and Enterprise Systems

Porto, Portugal (2017); Rome, Italy (2016)

ICART: International Conference on Agents and Artificial Intelligence

Porto, Portugal (2017); Rome, Italy (2016)

AAAI: Twenty-Ninth AAAI Conference on Artificial Intelligence

Austin, Texas (2014)

ECAI: European Conference on Artificial Intelligence

Prague, Czech Republic (2014)

MCDM: International Conference on Multiple Criteria Decision Making
(Evolutionary Multiobjective Optimization Session), Málaga, Spain (2013)

MIBISOC: International Conference on Medical Imaging using Bio-inspired and Soft Computing
Brussels, Belgium (2013)

Reviews for International Journals

I have reviewed for **56** different peer-reviewed scientific journals. I am a regular reviewer (at least one paper per year from each) of *European Journal of Operational Research* (CABS 4), *IEEE Transactions on Evolutionary Computation* (CABS 4), *Computers & Operations Research* (CABS 3), *Journal of Heuristics* (CABS 3), *Evolutionary Computation Journal, MIT Press* (CABS 3), among others. Other notable journals for which I have reviewed are *ACM Computing Surveys*, *TOP (Official Journal of the Spanish Society of Statistics and Operations Research)*, *Journal of Artificial Intelligence Research (JAIR)*, *International Transactions in Operational Research*, and *Journal of Multi-Criteria Decision Analysis*.

ACM Computing Surveys	2023
IEEE Transactions on Evolutionary Computation	2006, 2009–2011, 2013–2022, 2024
European Journal of Operational Research	2013, 2014, 2016–2024
Evolutionary Computation Journal, MIT Press	2006–2018, 2020–2022
Computers & Operations Research	2008 (special issue on "Hybrid Metaheuristics"), 2009, 2011, 2014–2016, 2018, 2020–2023
TOP (Official Journal of the Spanish Society of Statistics and Operations Research), Springer	2022
Machine Learning, Springer	2020–2022
ACM Transactions on Evolutionary Learning and Optimization (TELO)	2020
Operations Research Perspectives	2017, 2020, 2021
Swarm Intelligence, Springer New York	2008 (special issue on "Ant Colony Optimization"), 2009, 2011, 2012, 2015–2021
Artificial Intelligence, Elsevier	2015, 2017, 2020, 2021
Journal of Heuristics, Springer	2010–2019
Data Mining and Knowledge Discovery	2021
Journal of Artificial Intelligence Research (JAIR)	2017, 2021
International Transactions in Operational Research	2015, 2018
Computers & Industrial Engineering	2009, 2010, 2016, 2017
International Journal of Automation & Computing	2017
IEEE Computational Intelligence Magazine	2014 (special issue on "Computational Intelligence in Production and Logistics Systems"), 2017
Soft Computing, Springer	2011, 2017
Applied Soft Computing, Elsevier	2012–2014, 2016, 2021
Theoretical Computer Science	2016
IEEE Transactions on Cybernetics	2016 (when known as *IEEE Transactions on Systems, Man, and Cybernetics–Part B: Cybernetics*), 2010, 2012, 2013
Information Sciences	2016
Transactions on Computational Collective Intelligence, Springer	2016

AI Communications, IOS Press	2011, 2016
The R Journal	2016
Mathematical Problems in Engineering	2015
Annals of Operations Research	2015
Artificial Intelligence Review, Springer	2015, 2023
Knowledge-Based Systems, Elsevier	2015
Journal of Water Resources Planning and Management, ASCE	2014
Journal of Industrial and Management Optimization, AIMS	2007, 2014
Communications of the ACM	2013
Journal of Hydroinformatics	2010, 2013
IEEE Transactions on Parallel and Distributed Systems	2013
PLoS ONE, Public Library of Science	2012
Journal of Global Optimization, Springer	2011, 2012
European Journal of Industrial Engineering	2012
Fundamenta Informaticae, IOS Press	2012
Computational Optimization and Applications	2006, 2012
International Journal of Production Economics	2012
Journal of Computer Science and Technology	2011
Journal of Multi-Criteria Decision Analysis, Wiley	2011
Engineering Optimization, Taylor & Francis	2011
Engineering Applications of Artificial Intelligence, Elsevier	2011, 2022
Natural Computing, Springer	2011
International Journal of Information Technology & Decision Making	2010
Expert Systems, Wiley	2010
Adaptive Behavior	2010
Journal of Systems and Software, Elsevier	2010
Integrated Computer-Aided Engineering	2010
BRAIN: Broad Research in Artificial Intelligence and Neuroscience	2010
Journal of Aerospace Computing, Information, and Communication, AIAA	2009
Computational Intelligence, Wiley	2009
International Journal of Intelligence Systems	2007 (special issue "Nature Inspired Cooperative Strategies for Optimization")
Mathematics and Computers in Simulation (MATCOM), Elsevier	2007

Reviews of Book Chapters

- Chapter of the book "*Handbook of Heuristics*", Springer (2018).
- Chapter of the book "*Optimization Techniques for Solving Complex Problems*", Wiley (2008).

Reviews for Conferences

- 18th International Conference on Theory and Applications of Satisfiability Testing (SAT 2015), Austin, Texas, USA, 2015.
- 17th IEEE International Conferences on High Performance Computing and Communications (HPCC), New York, USA, 2015.
- Metaheuristics International Conference (MIC), Udine, Italy, 2011.
- 2nd Doctoral Symposium on Computing, York, UK, 2008.
- IEEE World Congress on Computational Intelligence (WCCI), Hong Kong, 2008.
- 14th Annual European Symposium on Algorithms (ESA), Zürich, Switzerland, 2006.
- Fifth International Workshop on Ant Colony Optimization and Swarm Intelligence (ANTS), Brussels, Belgium, 2006.

Panel Membership

- Expert panel member of the *Student Workshop* at the Genetic and Evolutionary Computation Conference, GECCO 2014.

Supervision of PhD students (advisor and co-promoter)

13. Fiona Hallam (September 2023 – Present), "*An assessment of the ability of cargo buses to improve the efficiency of small businesses' logistics, reduce carbon emissions from transport, and improve the financial viability of rural bus services*", dir. Arijit De, Manuel López-Ibáñez and Duncan Shaw, University of Manchester, UK.

12. Anthony Rasulo (December 2022 – Present), "*Multi-criteria Automatic Algorithm Configuration under Streaming Problem Instances*", dir. Kate Smith-Miles, Andres Munoz, Manuel López-Ibáñez and Julia Handl, University of Melbourne, Australia.

11. Ozioma Paul (September 2021 – Present), "*NWSSDTP-CASE PhD Studentship: Large-Scale School Bus Routing inclusive of Special Needs Students and Heterogeneous Fleets in the North West*", dir. Julia Handl and Manuel López-Ibáñez, University of Manchester, UK.

10. Stefan Pricopie (October 2020 – Present), "*Tuning Bayesian Optimization for Problems with Dynamic Resource Constraints*", dir. Richard Allmendinger, Matt Benatan, Manuel López-Ibáñez and Joshua Knowles, University of Manchester, UK.

9. Maura Hunt (September 2019 – Present), "*Exploring Computational Rationality to Better Understand Human Interactions with Multi-Criteria Optimization*", dir. Manuel López-Ibáñez, Paul Warren and George Farmer, University of Manchester, UK.

8. Youngmin Kim (September 2019 – Present), "*Safety-Oriented Learning and Optimisation Algorithms and Their Applications*", dir. Richard Allmendinger and Manuel Lopez-Ibáñez, University of Manchester, UK.

7. Andreea Avramescu (September 2019 – March 2023), "*Data-driven Optimization for Personalized Medicine Development and Delivery*", dir. Richard Allmendinger and Manuel López-Ibáñez, University of Manchester, UK.

6. Seyed Mahdi Shavarani (January 2019 – March 2023), "*Interactive Evolutionary Multi-Objective Optimization Algorithms: Development, Improvements, Benchmarking and Analysis of Performance*", dir. Manuel López-Ibáñez and Richard Allmendinger, University of Manchester, UK.

5. Mudita Sharma (January 2016 – January 2020), "*Learning to Control Differential Evolution Operators*", dir. Dimitar Kazakov and Manuel López-Ibáñez, University of York, UK.

4. Lucía Rivadeneira Barreiro (September 2015 – December 2019), "*Decision Modelling Driven by Twitter Data: A Case Study of the 2017 Presidential Election in Ecuador*", dir. Jian-bo Yang and Manuel López-Ibáñez, University of Manchester, UK.

3. Leslie Pérez Cáceres (January 2012 – January 2017), "*Automatic Algorithm Configuration*", dir. Thomas Stützle and Manuel López-Ibáñez, Université libre de Bruxelles, Belgium.

2. Leonardo C. T. Bezerra (January 2012 – January 2016), "*A Component-wise Approach to Multi-objective Evolutionary Algorithms*", dir. Thomas Stützle and Manuel López-Ibáñez, Université libre de Bruxelles, Belgium.

1. Jérémie Dubois-Lacoste (January 2009 – January 2014), "*Anytime Local Search for Multi-Objective Combinatorial Optimization: Design, Analysis and Automatic Configuration*", dir. Thomas Stützle and Manuel López-Ibáñez, Université libre de Bruxelles, Belgium.

(Co-)Supervisor role of Master's (MSc) thesis

At University of Manchester:

1. Noor Aiysah Binti Mohamed Ayoob (2023), *Improving Fairness and Reducing Wastage in the Allocation of Food Donations to Charities*.
2. Abraham Gonzalez (2022), *Machine Learning Applied To Intra-Day Price Movement Prediction Of Mexican Stocks*.
3. Martin Knaze (2022), *Meta-Learning and Hyperband: Proposing and Benchmarking a Novel Solution for Few-shot AutoML*.
4. Eni Botsi (2022), *Machine Learning Explainability Techniques Applied To Real-World Data*.
5. Caitlin Hilliard (2022), *An Empirical Analysis of Reproducible Research in Operations Research Journals*.
6. Ho Yan Enoch Cheng (2022), *An Empirical Analysis and Hyper-parameter Optimisation of an Algorithm Selector*.
7. Johanna Ettel (2022), *Analysing the Potential of Project Data Analytics to Facilitate Project Assurance*.
8. Revecca Christou (2021), *Modelling And Optimizing The School Bus Routing and Scheduling Problem by Using Local Search Improvement Techniques: A Real-World Case Study*.
9. Yirong Wang (2021), *Cutting Stock Optimisation For Conservatory Roof Design As A Way To Meet Customer Needs And Sustainability Goals*.
10. Nicolas Montano Cardenas (2021), *Optimal Classification Trees and Optimal Regression Trees*.
11. Deepanshu Narula (2021), *Rank Learning methods: A Review*.
12. Kenzy Drewty Kusmulyadi (2020), *Multiobjective Optimization for Optimal Camera Placement*.
13. Savvas Aravantinos (2020), *Demand Forecasting for Airline Space*.
14. Maria Olympia Zeeri (2020), *School Bus Routing Optimisation Problem*.
15. Alessandro Samaja (2019), *Selection of a subset of items with non-linear benefit*.
16. Epameinondas Tsokanos (2019), *Prediction of sets, mixtures and compositions*.
17. Ilias Raftoulis (2019), *Optimal dynamic management of adwords campaign*.
18. Maura Hunt (2019), *Using computational rationality to improve the modelling of human biases in goal programming*.
19. Jianglu Li (2019), *Make-to-order Production Allocation with Time-sensitive Pricing*.
20. Xiaoyang Chen (2019), *Worklessness in North West England*.
21. Aleksandra Firkowska (2018), *Outlet Inventory Management based on Stock Mix Optimisation*.
22. Elias Schede (2018), *Optimization of Multi-Objective Order Assignment and Price Quotation*.
23. Zhi Li (2018), *Real time order scheduling in supply chain management of manufacturing industry: A multi-objective optimization approach*.

24. Tomas Surik (2017), *Sequential Testing by means of Racing*.
25. Ulkar Hasan (2017), *Optimal Portfolio Selection with Logic Dependence and Budget Constraints*.
26. Zixuan Wang (2017), *Multiobjective Optimisation guided by Evidential Reasoning*.
27. Xiaoqian Jiang (2017), *Simultaneous optimization of sales price and production allocation: Literature review of strategies and real use cases*.
28. Jindan Li (2016), *Forecasting Retail Sales of Walmart's Stores*.
29. Xuan Du (2016), *Multiple Objective Parameter Selection for Classifiers*.
30. Akshay Saxena (2016), *Prediction of Prices using Machine Learning Techniques*.
31. Shengian Li (2016), *Open Data Sources in the City of Manchester*.
32. Xiaoyan Yuan (2016), *Prices Forecast for Raw Materials and Final Products*.
33. Yurui Cui (2016), *GP Practice Assessments and Recommendations in Manchester Based on Customer Satisfaction*.

At other universities:

34. Aurelien Marion (2015), *Fast heuristics for the longest common subsequence problem*, Université libre de Bruxelles, Belgium.
35. Javier Pérez (2014), *A framework of ant colony optimization for the automatic design on permutation problems*, Universidad Politécnica de Madrid, Spain.
36. Luc Coene (2013), *Two-Phase and Pareto Local Search for multi-objective continuous optimization*, Université libre de Bruxelles, Belgium.
37. Andreea Radulescu (2012), *Automatically Improving the Anytime Behaviour of Multiobjective Evolutionary Algorithms*, Université Nantes, France. Related publications: [IC25]
38. Michael Maur (2010), *Adaptive Ant Colony Optimization for the Traveling Salesman Problem*, Technical University of Darmstadt, Germany. Related publications: [IC12] [BC5]

Participation in Examination Panels

Participation in PhD Defense Jury / Panel

Jun 2024 **Thu Trang Dinh**. *Graph Convolutional Networks for Node Classification in Signed Graphs*, Alliance Manchester Business School, The University of Manchester, UK (Internal examiner).

Sep 2023 **Jiawen Kong**. *Learning Class-Imbalanced Problems from the Perspective of Data Intrinsic Characteristics*, Leiden Institute of Advanced Computer Science (LIACS), Leiden University, The Netherlands (External examiner).

Dec 2022 **Sergio Gil-Borrás**. *Online Order Batching Problem: a heuristic approach for single and multiple pickers*, Universidad Politécnica de Madrid, Spain (External examiner).

Jun 2021 **George Hall**. *A Framework for the Runtime Analysis of Algorithm Configurators*, University of Sheffield, UK (External examiner).

Mar 2020 **Cameron Shand**. *Evolutionary algorithms in clustering: Challenging problem generation and search space adaptation*, University of Manchester, UK (Internal examiner).

Dec 2019 **Wendi Ouyang**. *Regional sustainable development efficiency assessment model with the future performance for OECD countries: based on dynamic ratio measure model with network*, University of Manchester, UK (Internal examiner).

Oct 2019 **Federico Pagnozzi**. *Automatic Design of Hybrid Stochastic Local Search Algorithms: Analysis and application*, Université libre de Bruxelles, Belgium (External examiner).

Nov 2018 **Cristóbal Barba González**. *Big Data Optimization: Algorithmic Framework for Data Analytics Giuded by Semantics*, Universidad de Málaga, Spain (External examiner).

Feb 2018 **Nguyen Thi Thanh Dang**. *Data analytics for algorithm design*, KU Leuven, Belgium (External examiner).

Apr 2016 **Annelies De Corte**. *Optimization of water distribution networks using metaheuristics*, Faculty of Applied Economics, University of Antwerp, Belgium (External examiner).

Dec 2015 **Mohamed Saifullah Hussin**. *Stochastic Local Search Algorithms for Single and Bi-objective Quadratic Assignment Problems*, Université libre de Bruxelles, Belgium (External examiner).

May 2015 **Leticia Hernando**. *Instances of Combinatorial Optimization Problems: Complexity and Generation*, University of the Basque Country, Spain (External examiner).

Jun 2013 **Tianjun Liao**. *Population-based Heuristic Algorithms for Continuous and Mixed Discrete-Continuous Optimization Problems*, Université libre de Bruxelles, Belgium (Internal examiner).

Evaluation of PhD Theses

Nov 2023 **Alejandro Marrero Diaz**. *Evolutionary Computation Methods for Instance Generation in Optimisation Domains*, Universidad de La Laguna, Spain (External examiner).

Apr 2023 **Jiawen Kong**. *Learning Class-Imbalanced Problems from the Perspective of Data Intrinsic Characteristics*, Leiden University, The Netherlands (External examiner).

Mar 2023 **Raúl Martín Santamaría**. *A new methodology for the automated generation of reproducible metaheuristic configurations: a practical application to combinatorial optimization problems*, Universidad Rey Juan Carlos, Madrid, Spain (External examiner).

Aug 2022 **Kendall Taylor**. *Preference Learning for Multi-objective Optimisation Problems*, RMIT University, Melbourne, Australia (External examiner).

Oct 2017 **Esteban López Camacho**. *Optimización multi-objetivo en las ciencias de la vida*, Universidad de Málaga, Málaga, Spain (External examiner).

Dec 2015 **Fernando Alvarruiz Bermejo**. *Reducción del Tiempo de Simulación de Redes de Distribución de Agua mediante el Método de Mallas y la Computación de Altas Prestaciones*, Universitat Politécnica de València, València, Spain (External examiner).

Participation in Proposal Evaluation and Progress Review Panels

At University of Manchester:

May 2022	DBA End of year review of Ayesha Alhosani.
Jun 2021	DBA End of year review of Ayesha Alhosani.
Jul 2020	DBA End of year review of Ayesha Alhosani.
Jul 2018	PhD End of year review of Wendi Ouyang.
Jul 2018	PhD End of year review of Chidinma Chukwuemeka.
Jul 2017	DBA End of year review of Jeffry Savitz.
Jul 2017	PhD End of year review of Wendi Ouyang.
Jul 2017	PhD End of year review of Chidinma Chukwuemeka.
Jul 2016	PhD End of year review of Wendi Ouyang.

At other universities:

Nov 2019	**Carlos Eduardo Morais Vieira**. Undergraduate thesis for Bachelor in Computer Science, *Assessing irace for automated machine learning*, Federal University of Rio Grande do Norte.
Jan 2016	**Nicolás Emilio Rojas Morales**. Evaluation panel, *PhD thesis proposal*, Universidad Técnica Federico Santa María, Valparaiso, Chile.
Jan 2016	**Alan Juan Toledo Vargas**. Ms. Thesis (Tesis de Magister en Ciencias de la Ingeniería Informática), *Una Hiperheurística para resolver Orienteering Problem with Hotel Selection and Time Windows*, Universidad Técnica Federico Santa María, Valparaiso, Chile.

- Director of Postgraduate Programmes, Alliance Manchester Business School, University of Manchester, UK (Aug 2022 – Jul 2025)
- Programme Director "MSc Business Analytics: Operational Research and Risk Analysis", Alliance Manchester Business School, University of Manchester, UK (Aug 2018 – Jul 2020)
  (QS Ranking 2020: 8^{th} in the world and 2^{nd} in UK, https://www.topuniversities.com/university-rankings/business-masters-rankings/business-analytics/2020)
  (QS Ranking 2019: 7^{th} in the world and 2^{nd} in UK, https://www.topuniversities.com/university-rankings/business-masters-rankings/business-analytics/2019)

MSc/PhD Training Schools

SIGEVO (ACM) Summer School 13/7/2023
Lecturer, Melbourne, Australia

NATCOR PhD Course on Heuristic Optimisation and Learning 10 April 2024
Lecturer. University of Nottingham, UK

Summer School on Automatic Algorithm Design 2023 12th–16 June 2023
Lecturer. University of Lille, France

SIGEVO (ACM) Summer School 13th–14 July 2023
Lecturer, Lisbon, Portugal

SIGEVO (ACM) Summer School 20th–24 June 2022
Lecturer, Boston, USA

SIGEVO (ACM) Summer School 5th–9 July 2021
Lecturer. Held along with ACM GECCO 2021, Online Conference

28th Jyväskylä Summer School 13th–17 August 2018
Designed and delivered the course: *"Data Analytics + Machine Learning + Optimization"*,
University of Jyväskylä, Finland

Training School of COST Action CA15140 21/10/2017
Full-day lecturer. Held at Pierre et Marie Curie University, Paris, France

SIGEVO (ACM) Summer School 14th–21 July 2017
Lecturer and Mentor. Held along with ACM GECCO 2017, Berlin, Germany

MSc Teaching

At Alliance Manchester Business School, UK:

Mathematical Programming and Optimisation WS/2019-20, WS/2020-21
Course coordinator, lectures, seminars

Programming in Python for Business Analytics SS/2017,WS/2018-21
Course coordinator, lectures, seminars

Data Visualisation and Statistical Programming 16/6/2016
Full-day workshop, DBA (Doctor of Business Administration) Research Conference

Risk, Performance and Decision Analysis SS/2016

Lecturer, Seminars

At Warwick Business School, University of Warwick, UK:

Business Analytics with Python 8/3/2017, 15/3/2017
Full-day (2 days) module for MSc students

At Université libre de Bruxelles, Brussels, Belgium:

Heuristic Optimization SS/2011 and SS/2013
Seminars, design of coursework

Undergraduate Teaching

At University of Málaga, Spain:

Programming I WS/2020, WS/2021
Course coordinator, lectures and practical seminars

Analysis and Design of Algorithms WS/2021
Practical seminars

At Alliance Manchester Business School, UK:

Decision Analysis for Business & Management SS/2016-17
Lecturer

Quantitative Methods for Business & Management SS/2016-18
Course coordinator, lecturer

Academic and Career Development 2016/7
Seminar leader

Human Computer Interaction WS/2015
Seminars

Teaching assessments

- *Outstanding Teaching Award*, Faculty of Humanities, University of Manchester, UK (Oct 2020)
- Fellow of The Higher Education Academy in recognition of attainment against the UK Professional Standards Framework for teaching and learning support in higher education (Nov 2018)
- "Excellent Teaching" commendation from Alliance Manchester Business School in 2018, 2019 and 2020.
- "*Programming in Python for Business Analytics*" was created by me in 2016/7 and it achieved an "Excellent" rating within the course evaluation process of Alliance Manchester Business School.
- Overall assessment of Faculty Peer Review of Teaching, University of Manchester (2016): "*All, or almost all, aspects of the teaching reviewed were of very high quality, few or no suggestions for improvement could be made*"
- Periodic Review by eLearning Team, Alliance Manchester Business School (2016): "*[Quantitative Methods for Business & Management] is an engaging, easy to use Blackboard space for students.*"

Memberships of academic and professional bodies

Elected member of the Business Committee of GECCO Jul 2023 – Jul 2027

in charge of selecting and advising the General Chair and Editor-in-Chief of the Genetic and Evolutionary Computation Conference (GECCO).

Research Committee of the Operational Research Society (UK) May 2023 – Jun 2026

ACM SIGEVO Best Dissertation Award, Chair of the Selection Committee Aug 2019 – Aug 2023

The award carries a monetary value of 2,000 USD to be awarded to the winner and 1,000 USD to each of the honourable mentions.

Member of the IEEE Task Force Oct 2019 – Present

on Automated Algorithm Design, Configuration and Selection.

Elected member of the ACM SIGEVO Executive Board Jul 2019 – Present

SIGEVO is the Special Interest Group on Evolutionary Computation of the ACM society.

Steering Committee Member of EvoCOP May 2017 – Present

the European Conference on Evolutionary Computation in Combinatorial Optimisation.

Member of The Operational Research Society Mar 2023 – Present

Senior Member of the ACM Society Oct 2023 – Present

Senior Member of the IEEE Society Jun 2023 – Present

Public policy advice/service in a professional capacity

Organising committee member of the Theme Development Workshop Feb – May 2022

"AI for Future Manufacturing", within the context of the TAILOR project funded by the European Commission (EC). The reports generated from the workshop are submitted to the EC.

Committee Member of Special Interest Group "AI on Space" Feb 2021 – Present

created by CLAIRE (Confederation of Laboratories for Artificial Intelligence Research in Europe) and ESA (European Space Agency) with the goal of coordinating activities and policies to accelerate the development of both AI and Space-related research.

University Roles

Lead representative of the University of Málaga, Spain 2020 – 2022

in the International AI Doctoral Academy (AIDA), a joint initiative of ICT-48 networks (AI4Media, ELISE, HumanE-AI NET, TAILOR) and the VISION consortium.

Member of the Knowledge Transfer Committee 2022 – 2022

of the Institute of Technology and Software Engineering (ITIS), University of Málaga, Spain.

References are available upon request.