



# Curriculum Vitæ of Mauro Birattari

as of February 2022

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**HIGHLIGHTS** Mauro Birattari is a *directeur de recherches* (research director) of the *Fonds de la Recherche Scientifique - FNRS*, the fund for scientific research of Belgium's Wallonia-Brussels Federation.

He has been awarded an ERC Consolidator Grant for the project "DEMIURGE: Automatic design of robot swarms" (ERC-2015-CoG).

He is the author of the book "Tuning Metaheuristics: A machine learning perspective," published in 2009 by Springer.

His scientific video "Swarmanoid, the movie" won a number of awards including the Best Video Award at the AAAI Video Competition 2011.

His article "A racing algorithm for configuring metaheuristics" received the *SIGEVO Impact Award* 2012.

He co-authored more than 150 peer-reviewed scientific publications in the field of computational intelligence. His works have been cited about twenty-five thousand times in the scientific literature. His *h-index* is 51 (Source: Google Scholar).

He is an associate editor for "Frontiers in Robotics and AI: Multi-Robot Systems" and an academic editor for "PeerJ Computer Science". He is also a member of the editorial board of "Swarm Intelligence", "International Journal of Metaheuristics", "International Journal of Intelligent Computing and Cybernetics", and "International Journal of Applied Metaheuristic Computing". In the past, he has served as an associate editor for "Swarm Intelligence", as an area editor for "Computers & Industrial Engineering", and as a member of the editorial board of "Evolutionary Computation".

He served as a member of the organizing committee (program chair, track chair, publication chair, and local arrangement chair) for 17 international conferences, and as a member of the program committee for more than 50 international conferences in the last five years.

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**RESEARCH** Computational intelligence, automatic design, swarm intelligence, and swarm robotics.

**INTERESTS** Application of statistical methods, design of experiments, and machine learning techniques in robotics and operations research, notably for assessing the performance of algorithms and for fine-tuning their parameters.

Epistemology and philosophical foundations of computational intelligence.

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**EDUCATION** Ph.D. in Applied Sciences. Université Libre de Bruxelles. Belgium. December 2004. Dissertation title: *The Problem of Tuning Metaheuristics as Seen from a Machine Learning Perspective*. Supervisor: Prof. M. Dorigo.

Diplôme d'Etudes Approfondies en Sciences Appliquées. Université Libre de Bruxelles. Belgium. June 2001. Dissertation title: *On the Formal Foundation of Ant Programming*. Supervisor: Prof. M. Dorigo.

Laurea di Dottore in Ingegneria Elettronica. Politecnico di Milano. Italy. July 1997. Dissertation title: *Modelli Locali per l'Apprendimento: dall'approccio neuro-fuzzy al lazy learning*. Supervisors: Prof. A. Bonarini and G. Bontempi.

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**RESEARCH** Research Director of the fund for scientific research F.R.S.-FNRS of Belgium's Wallonia-  
**EXPERIENCE** Brussels Federation at **IRIDIA**, Institut de Recherches Interdisciplinaires et de Développe-

ments en Intelligence Artificielle, Université Libre de Bruxelles, Belgium. Since October 2019.

Senior Research Associate of the fund for scientific research F.R.S.-FNRS of Belgium's Wallonia-Brussels Federation at **IRIDIA**, Institut de Recherces Interdisciplinaires et de Développements en Intelligence Artificielle, Université Libre de Bruxelles, Belgium. From October 2015 to September 2019.

Research Associate of the fund for scientific research F.R.S.-FNRS of Belgium's Wallonia-Brussels Federation at **IRIDIA**, Institut de Recherces Interdisciplinaires et de Développements en Intelligence Artificielle, Université Libre de Bruxelles, Belgium. From October 2007 to September 2015.

Senior Researcher at **IRIDIA**, Institut de Recherces Interdisciplinaires et de Développements en Intelligence Artificielle, Université Libre de Bruxelles, Belgium. Since January 2005.

Researcher at **IRIDIA**, Institut de Recherces Interdisciplinaires et de Développements en Intelligence Artificielle, Université Libre de Bruxelles, Belgium. From April 2002 to December 2004. Senior scientist in charge: Prof. M. Dorigo.

Researcher at **Intellektik**, Computer Science Department, Darmstadt University of Technology, Germany. From April 2001 to March 2002. Senior scientist in charge: Prof. W. Bibel.

Researcher at **AASS**, Applied Autonomous Sensor Systems, Department of Technology, Örebro University, Sweden. From October 2000 to March 2001. Senior scientist in charge: Prof. A. Saffiotti.

Researcher at **IRIDIA**, Institut de Recherces Interdisciplinaires et de Développements en Intelligence Artificielle, Université Libre de Bruxelles, Belgium. From August 1997 to September 2000. Senior scientist in charge: Prof. H. Bersini.

Visiting Student at **IRIDIA**, Institut de Recherces Interdisciplinaires et de Développements en Intelligence Artificielle, Université Libre de Bruxelles, Belgium. From October 1996 to July 1997. Senior scientist in charge: Prof. H. Bersini.

Visiting Student at **IDSIA**, Istituto dalle Molle, Lugano, Switzerland. From June 1996 to September 1996. Senior scientist in charge: Prof. L. M. Gambardella.

Master Student at **AI&R Project**, Dipartimento di Elettronica e Informazione, Politecnico di Milano, Italy. From April 1996 to July 1997. Senior scientist in charge: Prof. A. Bonarini.

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AWARDS AND PRIZES

Best Paper Award [P87] at BNAIC 2019, the 31st Belgium-Netherlands Conference on Artificial Intelligence Brussels, Belgium Nov 2019.

ERC Consolidator Grant for the project *DEMIURGE: Automatic design of robot swarms*. European Research Council, started in October 2016.

Prix Wernaers 2012 *pour la recherche et la diffusion des connaissances*, with Rehan O'Grady and Marco Dorigo, for the video **Swarmanoid, the movie**. F.R.S.-FNRS, August 2012.

Innovative Technology Award at the Robot Film Festival for the video **Swarmanoid, the movie**. New York, July 14, 2012.

SIGEVO Impact Award 2012 for the GECCO 2002 paper: *A racing algorithm for configuring metaheuristics* [P18]. July 11, 2012.

Best Video Award at the AAI-11 AI Video Competition for the video **Swarmanoid, the movie** [P57], written and directed by Mauro Birattari and Rehan O'Grady. San Francisco, CA, August 2011.

2009 Outstanding Reviewer Award, "for work on International Journal of Intelligent Computing and Cybernetics, 2008". Emerald Literati Network, June 2009.

Best Performing Algorithm [J10] at the International Timetabling Competition organized by the *Metaheuristics Network* and sponsored by PATAT, the international series of conferences on the practice and theory of automated timetabling. Manno, Switzerland. March 2003.

Best Paper Award [P11] at BNAIC'99: The Eleventh Belgium-Netherlands Conference on Artificial Intelligence. Maastricht, The Netherlands. November 1999.

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TEACHING,  
SUPERVISION,  
AND  
EXAMINATION  
ACTIVITIES

Lecturer: INFO-H-414 *Swarm Intelligence* (with Prof. Marco Dorigo). Faculté des sciences appliquées, Université Libre de Bruxelles, Belgium. Since Academic Year 2008–2009.

Professor in charge: PROJ-H-402 *Projet d'informatique*. Faculté des sciences appliquées, Université Libre de Bruxelles, Belgium. Since Academic Year 2009–2010.

Professor in charge: TRAN-H-201 *Projet Multidisciplinaire II*. Filière Informatique, Faculté des sciences appliquées, Université Libre de Bruxelles, Belgium. Since Academic Year 2008–2009.

Supervisor of two post-doctoral researchers: Dr. Darko Bozhinoski and Dr. Federico Pagnozzi.

Supervisor of seven Ph.D. students currently in progress: Ken Hasselmann, Antoine Ligot, Muhammad Salman, David David Alfredo Garzon Ramos, Jonas Kuckling, and Miquel Kegeleirs, Guillermo Legarda Herranz, Université Libre de Bruxelles, Belgium.

Ph.D. thesis supervisor and member of the examination committee: Lorenzo Garattoni (2021). *Cognitive abilities in swarm robotics. Developing a swarm that can collectively sequence tasks*. Université Libre de Bruxelles, Belgium.

Member of the Ph.D. examination committee: Federico Pagnozzi (2019). *Automatic Design of Stochastic Local Search Algorithms: Analysis and Application*. Université Libre de Bruxelles, Belgium.

Ph.D. thesis co-supervisor and member of the Ph.D. examination committee: Zhi “Eric” Yuan (2019). *Automated Algorithm Configuration for Hard Optimization Problems*. Université Libre de Bruxelles, Belgium.

Ph.D. thesis advisor and president of the examination committee: Dimitri Van Assche (2019). *New Methodological Perspectives on PROMETHEE Methods*. Université Libre de Bruxelles, Belgium.

Member of the Ph.D. examination committee: Bernát Wiandt (2018). *Optimization of Self Organizing Computing Systems*. Budapest University of Technology and Economics, Hungary.

Member of the Ph.D. examination committee: Nithin Mathews (2018). *Beyond Self-assembly: Mergeable Nervous Systems, Spatially Targeted Communication, and Supervised Morphogenesis for Autonomous Robots*. Université Libre de Bruxelles, Belgium.

Ph.D. thesis advisor and member of the Ph.D. examination committee: Leslie Angelica Perez Caceres (2017). *Automatic Algorithm Configuration – Analysis, Improvements and Applications*. Université Libre de Bruxelles, Belgium.

Ph.D. thesis supervisor and member of the examination committee: Gianpiero Francesca (2017). *A modular approach to the automatic design of control software for robot swarms. From a novel perspective on the reality gap to AutoMoDe*. Université Libre de Bruxelles, Belgium.

Ph.D. thesis advisor and member of the Ph.D. examination committee: Gaëtan Podevijn (2017). *Effects of the interaction with robot swarms on the human psychological state*. Université Libre de Bruxelles, Belgium.

Member of the Ph.D. examination committee: Gabriele Valentini (2016). *The best-of-n problem in robot swarms*. Université Libre de Bruxelles, Belgium.

Ph.D. thesis advisor and member of the Ph.D. examination committee: Leonardo Bezerra (2016). *A component-wise approach to multi-objective evolutionary algorithms: From flexible frameworks to automatic design*. Université Libre de Bruxelles, Belgium.

Ph.D. thesis advisor and member of the Ph.D. examination committee: Andreagiovanni Reina (2016). *Engineering swarm systems: A design pattern for the best-of-n decision problem*. Université Libre de Bruxelles, Belgium.

Member of the Ph.D. examination committee: Miguel António Frade Duarte (2016). *Engineering evolutionary control for real-world robotic systems*. University Institute of Lisbon, Portugal.

Ph.D. thesis advisor and member of the examination committee: Mohamed Saifullah bin Hussin (2015). *Stochastic local search algorithms for single and bi-objective quadratic assignment problems*. Université Libre de Bruxelles, Belgium.

Ph.D. thesis advisor: Stefan Eppe (2015). *Three contributions to the PROMETHEE II method*. Université Libre de Bruxelles, Belgium.

Ph.D. thesis advisor and member of the examination committee: Luca Maria Gambardella (2015). *Coupling ant colony system with local search*. Université Libre de Bruxelles, Belgium.

Member of the Ph.D. examination committee: Manuel Castillo Cagigal (2014). *A swarm intelligence approach based on coupled oscillators: an application in demand side management with photovoltaic distributed generation*. Universidad Politécnica de Madrid, Spain.

Ph.D. thesis co-supervisor and member of the examination committee: Arne Brutschy (2014). *Enabling research on complex tasks in swarm robotics: Novel conceptual and practical tools*. Université Libre de Bruxelles, Belgium.

Ph.D. thesis co-supervisor and member of the examination committee: Jérémie Dubois-Lacoste (2014). *Anytime local search for multi-objective combinatorial optimization: design, analysis and automatic configuration*. Université Libre de Bruxelles, Belgium.

Ph.D. thesis co-supervisor and member of the examination committee: Carlo Pinciroli (2014). *On the design and implementation of an accurate, efficient, and flexible simulator for heterogeneous swarm robotics systems*. Université Libre de Bruxelles, Belgium.

Ph.D. thesis co-supervisor and member of the examination committee: Manuele Brambilla (2014). *Formal methods for the design and analysis of robot swarms*. Université Libre de Bruxelles, Belgium.

Ph.D. thesis advisor and member of the examination committee: Julien Roland (2013). *Inverse multi-objective combinatorial optimization*. Université Libre de Bruxelles, Belgium.

Ph.D. thesis co-supervisor and member of the examination committee: Eliseo Ferrante (2013). *Information transfer in a flocking robot swarm*. Université Libre de Bruxelles, Belgium.

Ph.D. thesis co-supervisor and member of the examination committee: Giovanni Pini (2013). *Towards autonomous task partitioning in swarm robotics*. Université Libre de Bruxelles, Belgium.

Member of the Ph.D. examination committee: Tianjun Liao (2013). *Population-based heuristic algorithms for continuous and mixed discrete-continuous optimization problems*. Université Libre de Bruxelles, Belgium.

Ph.D. thesis advisor and president of the examination committee: Marco Montes de Oca Roldan, (2011). *Incremental social learning in swarm intelligence systems*. Université Libre de Bruxelles, Belgium.

Ph.D. thesis advisor and president of the examination committee: Alexandre Campo (2011). *On the design of self-organized decision making in robot swarms*. Université Libre de Bruxelles, Belgium.

Ph.D. thesis advisor and member of the examination committee: Rehan O'Grady (2010). *Morphologically responsive self-assembling robots*. Université Libre de Bruxelles, Belgium.

Member of the Ph.D. examination committee: Matteo Gagliolo (2010). *Online dynamic algorithm portfolios for solving decision problems*. Università della Svizzera Italiana, Lugano, Switzerland.

Member of the Ph.D. examination committee: Emmanuelle Vin (2010). *Genetic algorithm applied to generalized cell formation problems*. Université Libre de Bruxelles, Belgium.

Ph.D. thesis co-supervisor and member of the examination committee: Prasanna Bal-

aprakash (2010). *Estimation-based metaheuristics for stochastic combinatorial optimization: case studies in stochastic routing problems*. Université Libre de Bruxelles, Belgium.

Member of the Ph.D. examination committee: Olivier Caelen (2009). *Sélection séquentielle en environnement aléatoire appliquée à l'apprentissage supervisé*. Université Libre de Bruxelles, Belgium.

Member of the Ph.D. examination committee: Christophe Philemotte (2009). *The Gestalt heuristic: dynamic and online meta-modeling as improvement method to the metaheuristic process*. Université Libre de Bruxelles, Belgium.

Member of the Ph.D. examination committee: Christos Ampatzis (2008). *On the evolution of autonomous time-based decision-making and communication in collective robotics*. Université Libre de Bruxelles, Belgium.

President of the Ph.D. examination committee: Shervin Nouyan (2008) *Teamwork in a swarm of robots – an experiment in search and retrieval*. Université Libre de Bruxelles, Belgium.

Ph.D. thesis advisor and member of the examination committee: Anders Christensen (2008) *Fault detection in autonomous robots: endogenous fault detection through fault injection and learning – exogenous fault detection based on firefly-inspired synchronization*. Université Libre de Bruxelles, Belgium.

Member of the Ph.D. examination committee: Krzysztof Socha (2008) *Ant colony optimization for continuous and mixed-variable domains*. Université Libre de Bruxelles, Belgium.

Ph.D. thesis advisor: Jodelson A. Sabino (2008) *Otimização com colônia de formigas aplicada à programação de operações de locomotivas de manobras*. Pontifícia Universidade Católica do Rio de Janeiro, Rio de Janeiro, Brazil.

Member of the Ph.D. examination committee: Roderich Groß (2007). *Self-assembling robots*. Université Libre de Bruxelles, Belgium.

Ph.D. thesis co-supervisor: Paola Pellegrini (2007). *ACO: parameters, exploration and quality of solutions*. Università Ca' Foscari, Venice, Italy.

Member of the Ph.D. examination committee: Leonora Bianchi (2006). *Ant colony optimization and local search for the probabilistic traveling salesman problem: a case study in stochastic combinatorial optimization*. Université Libre de Bruxelles, Belgium.

Supervisor of seven Master theses currently in progress: Arthur Pierrot, Aris Mangriotis, Nidhal Mareghni, Raffaele Todesco, Ilyes Gharbi, Ammar Hasan, Franck Trouillez, Université Libre de Bruxelles, Belgium;

Master thesis supervisor: Iulian-Bogdan Vlad (2021). *Importance sampling with intermediate rewards to estimate the performance of a robot swarm*. Vrije Universiteit Brussel, Belgium.

Master thesis supervisor: Piotr Rochala (2021). *Automatic design of collective behaviors for robots that operate in dynamic environments*. Université libre de Bruxelles, Belgium.

Master thesis supervisor: Vincent van Pelt (2020). *Automatic modular design of control software in robot swarms: Towards exploitation of behaviour trees features*. Université libre de Bruxelles, Belgium.

Master thesis supervisor: Keneth Uboda Arriaza (2019). *Design of robot swarms by optimization: An instance of AutoMoDe based on simulated annealing*. Université libre de Bruxelles, Belgium.

Master thesis supervisor: Julian Ruddick (2019). *Comparison of state-of-the-art evolutionary methods for the design of robot swarms*. Université libre de Bruxelles, Belgium.

Master thesis supervisor: Gaëtan Spaey (2019). *The influence of random walks on automatic design of robot swarms An experiment with AutoMoDe*. Université libre de Bruxelles, Belgium.

Master thesis supervisor: Abdallah AlFaham (2019). *A family of methods based on NEAT*

for the automatic design of behaviors of single robots and robot swarms. Vrije Universiteit Brussel, Belgium.

Master thesis supervisor: Miquel Kegeleirs (2018) *Developing ROS-based software for the e-puck: An experiment in exploration and mapping*. Université Libre de Bruxelles, Belgium.

Master thesis supervisor: Antoine Ligot (2016). *A virtual device for situated communication in a swarm of e-pucks*. Université Libre de Bruxelles, Belgium.

Master thesis supervisor: Michael Stevens (2016). *SRML for swarm robotics: specification of a collective behaviour*. Université Libre de Bruxelles, Belgium

Master thesis supervisor: Brian Delhais (2015). *Automatic design of robots swarm through evolving neural network topologies: a comparison with a standard evolutionary swarm robotics method on multiple tasks*. Université Libre de Bruxelles, Belgium.

Master thesis supervisor: Anthony Debruyne (2015). *Human – robot swarms interaction: an escorting robot swarm that diverts a human away from dangers (s)he cannot perceive*. Université Libre de Bruxelles, Belgium.

Master thesis co-supervisor: Jacopo De Stefani (2015) *Spatial allocation in swarm robotics*. Politecnico di Milano, Italy.

Master thesis co-supervisor: Mattia Salvaro (2015). *Virtual sensing technology applied to a swarm of autonomous robots*. Università di Bologna, Italy.

Master thesis supervisor: Bernard Mayeur (2014). *Outil automatique de placement de robots pour des expériences de swarm robotics*. Université Libre de Bruxelles, Belgium.

Master thesis supervisor: Jacopo De Stefani (2013). *Spatial allocation in swarm robotics*. Université Libre de Bruxelles, Belgium.

Master thesis supervisor: Xavier Deschuyteneer (2014). *Intégration de l'e-puck et du TAM dans ARGoS3*. Université de Mons, Belgium.

Master thesis co-supervisor: Davide Vichi (2012). *On the design of a Boolean-network robot swarm: Collective recognition of ground patterns*. Università di Bologna, Italy.

Master thesis co-supervisor: Simon Lefort (2012). *TAM, un module d'abstraction de tâches pour la recherche en intelligence d'essaim*. EPHEC, Institut Supérieur des Aumôniers di Travail, Brussels, Belgium.

Master thesis supervisor: Mikaël Lenaertz (2012). *Formal verification of flexibility in swarm robotics*. Université Libre de Bruxelles, Belgium.

Master thesis co-supervisor: Lorenzo Garattoni (2012). *Advanced stochastic local search methods for automatic design of Boolean network robots*. Università di Bologna, Italy.

Master thesis co-supervisor: Matteo Amaducci (2012). *Design of Boolean network robots for dynamics tasks*. Università di Bologna, Italy.

Master thesis co-supervisor: Gianpiero Francesca (2011). *Studio sulla selezione di operatori per un algoritmo memetico applicato al quadratic assignment problem*. Università Degli Studi Del Sannio, Benevento, Italy.

Master thesis supervisor: Laurent Compère (2011). *Self organised task allocation in swarm robotics: Partitionnement de tâches vu comme un problème du bandit à multiples bras*. Université Libre de Bruxelles, Belgium.

Master thesis supervisor: Wenjie Sun (2011). *Self-organized flocking with conflicting target directions*. Université Libre de Bruxelles, Belgium.

Master thesis co-supervisor: Mattia Manfroni (2010). *Towards Boolean network design for robotics applications*. Università di Bologna, Italy.

Master thesis supervisor: Nadir Baiboun (2010). *Allocation des tâches en parallèles dans un essaim de robots: Étude et mise en œuvre sur la plateforme e-puck*. ECAM, Haute École Léonard de Vinci, Brussels, Belgium.

Master thesis supervisor: Nam-Luc Tran (2010). *Robotique en essaim et spécialisation: Etude sur la plateforme e-puck*. Université Libre de Bruxelles, Belgium.

Master thesis co-supervisor: Marco Frison (2010). *Adaptive task partitioning in a homogeneous swarm of robots*. Università di Bologna, Italy.

Master thesis co-supervisor: Manuele Brambilla (2009). *Group size estimation in swarm robotics*. Politecnico di Milano, Italy.

Master thesis supervisor: Avit Sidis (2009). *Etude du déplacement en essaim de robots e-pucks*. Université Libre de Bruxelles, Belgium.

Master thesis supervisor: Charlotte Philippe (2009). *Etude de la conception d'un système d'assemblage pour robots e-pucks*. Université Libre de Bruxelles, Belgium.

Master thesis supervisor: Antal Decugnière (2008). *Conception et réalisation d'une palette de transport intelligente pour le projet d'intelligence en essaim Swarmanoid*. Université Libre de Bruxelles, Belgium.

Master thesis supervisor: Benjamin Poulain (2008). *Développement d'une stratégie de transport collectif dans le cadre du projet d'intelligence en essaim Swarmanoid: spécification d'une palette intelligente et de son environnement de simulation*. Université Libre de Bruxelles, Belgium.

Master thesis co-supervisor: Francesco Cuffaro (2008). *Catene di robot nella robotica a sciame: localizzazione, comunicazione e stima di distanze tramite l'utilizzo di sensori di prossimità*. Politecnico di Milano, Italy.

Master thesis co-supervisor: Mouhcine Zekkri (2007). *Étude d'un mécanisme de mesure collective dans un comportement collectif auto-organisé en robotique en essaim via une tâche d'agrégation avec les robots e-puck*. Université Libre de Bruxelles, Belgium.

Master thesis co-supervisor: Huynh Trung Truc (2007). *An ant colony optimization algorithm for biobjective permutation flowshop problems*. Université Libre de Bruxelles, Belgium.

Master thesis co-supervisor: Antoine Dubois (2007). *Contrôle de la taille de groupe en robotique en essaim: conception et étude d'une méthode scalable et robuste*. Université Libre de Bruxelles, Belgium.

Master thesis co-supervisor: Olivier Colot (2007). *Recherche basée sur un modèle en optimisation continue*. Université Libre de Bruxelles, Belgium.

Master thesis co-supervisor: Olivier Dédriche (2007). *La Prise de décision au sein d'un groupe de robots: conception et développement d'une plateforme de travail libre et gratuite pour les robot e-puck à destination de la communauté académique, et étude d'un comportement collectif auto-organisé via une tâche d'agrégation en robotique en essaim*. Université Libre de Bruxelles, Belgium.

Master thesis co-supervisor: Laurent Bury (2007). *Conception et implémentation en c++ d'un simulateur pour les robot e-puck et réalisation de tests de validation pour la cinématique de base*. Université Libre de Bruxelles, Belgium.

Master thesis co-supervisor: Magny Denis (2005). *Optimization basée sur l'algorithme Race*. Université Libre de Bruxelles, Belgium.

Master thesis co-supervisor: Michela Lunghi (2005). *Il metodo della superficie di risposta per la configurazione di metaeuristiche*. Università degli Studi di Ferrara, Ferrara, Italy.

Master thesis co-supervisor: Denis Darquennes (2005). *Implementation and application of ant colony algorithms*, Facultés Universitaires Notre Dame de la Paix. Namur, Belgium.

Master thesis co-supervisor: Max Manfrin (2003). *Metaeuristiche per la costruzione degli orari dei corsi universitari*. Università degli Studi di Firenze, Florence, Italy. Teaching assistant at Fachbereich Informatik, Technische Universität Darmstadt, Germany. Lecture on the configuration of metaheuristics through design of experiments, for the course *Lokale Suchverfahren und Metaheuristike* of Dr. T. Stützle. Academic Year 2001–2002.

Teaching assistant at Institutionen för Teknik, Örebro Universitet, Sweden. *Labs on Machine Learning*, for the course on Neural Networks of Dr. T. Duckett. Academic Year 2000–2001.

Teaching assistant at Ecole de Commerce Solvay, Faculté des Sciences Sociales, Politiques et Economiques, Université Libre de Bruxelles, Belgium. *Labs on Java and Object Oriented Programming*, for the course on computer science of Prof. H. Bersini. Academic Years 1997–1998 and 1998–1999.

Invited lecturer at Faculté des Sciences Appliquées, Université Libre de Bruxelles, Belgium. *Seminars on supervised learning, neural networks, and lazy learning*, for the course on artificial intelligence of Prof. H. Bersini. Academic Year 1999–2000.

Invited lecturer at Applied Autonomous Sensor Systems, Institutionen för Teknik, Örebro Universitet, Sweden. *Two lectures on lazy learning for doctoral students*. August 1999.

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EDITORIAL  
ACTIVITIES

**Associate Editor** of *Frontiers in Robotics and AI: Multi-Robot Systems*, since March 2015.

**Academic Editor** of *PeerJ Computer Science*, since November 2014.

**Associate Editor** of *Swarm Intelligence*, from October 2006 to May 2019.

**Area Editor** of *Computers & Industrial Engineering*, from December 2007 to December 2013.

**Editorial Board Member** of the *Swarm Intelligence*, since June 2019.

**Editorial Board Member** of the *International Journal of Metaheuristics*, since March 2012.

**Editorial Board Member** of the *International Journal of Applied Metaheuristic Computing*, since January 2009.

**Editorial Board Member** of the *International Journal of Intelligent Computing and Cybernetics*, since May 2007.

**Editorial Board Member** of *Evolutionary Computation*, from February 2007 to January 2011.

**Vice-general Chair** of *ANTS 2018 – Eleventh International Conference on Swarm Intelligence*. Rome, Italie, October 29–31, 2018.

**Vice-Chair** of *ANTS 2016 – Tenth International Conference on Swarm Intelligence*. Brussels, Belgium, September 7–9, 2016.

**Track Co-Chair** of the *AAAI-15*, AI Video Competition 2015. Austin, TX, USA, January 26, 2015.

**Organization Co-Chair** of *ANTS 2014 – Ninth International Conference on Swarm Intelligence*. Brussels, Belgium, September 10–12, 2014.

**Track Chair** of the *AAAI-14*, AI Video Competition 2014. Québec City, Canada, July 28, 2014.

**Track Co-Chair** of *AAAI-13*, AI Video Competition 2013. Bellevue, WA, USA, July 14, 2013.

**Organization Co-Chair** of *ANTS 2012 – Eight International Conference on Swarm Intelligence*. Brussels, Belgium, September 12–14, 2012.

**Track Co-Chair** of the *AAAI-12*, AI Video Competition 2012. Toronto, Canada, July 23, 2012.

**Organization Co-Chair** of *ANTS 2010 – Seventh International Conference on Swarm Intelligence*. Brussels, Belgium, September 8–10, 2010.

**Program Co-Chair** of *SLS 2009 – Engineering Stochastic Local Search Algorithms, Designing, Implementing and Analyzing Effective Heuristics*. Brussels, Belgium, September 3–5, 2009.



**Track Co-Chair** of *GECCO 2009 – Genetic and Evolutionary Computation Conference*, track on ant colony optimization and swarm intelligence. Montréal, Canada, July 8–12, 2009.

**Publication Chair** of *ANTS 2008 – Sixth International Conference on Ant Colony Optimization and Swarm Intelligence*. Brussels, Belgium, September 22–24, 2008.

**Program Co-Chair** of *SLS 2007 – Engineering Stochastic Local Search Algorithms, Designing, Implementing and Analyzing Effective Heuristics*. Brussels, Belgium, September 6–8, 2007.

**Track Co-Chair** of *GECCO 2007 – Genetic and Evolutionary Computation Conference*, track on ant colony optimization, swarm intelligence, and artificial immune systems. London, UK, July 7–11, 2007.

**Publication Chair** of *ANTS 2006 – Fifth International Workshop on Ant Colony Optimization and Swarm Intelligence*. Brussels, Belgium, September 4–7, 2006.

**Publication Chair** of *ANTS 2004 – Fourth International Workshop on Ant Colony Optimization and Swarm Intelligence*. Brussels, Belgium, September 5–8, 2004.

**Local Arrangement Chair** of *ANTS 2002 – From Ant Colonies to Artificial Ants: Third International Workshop on Ant Algorithms*. Brussels, Belgium, September 12–14, 2002.

**Senior Program Committee Member** of *IJCAI – 31th International Joint Conference on Artificial Intelligence*. Vienna, Austria. 2022.

**Program Committee Member** of *CEC 2022 AUTODESIGN4EC – Automated Algorithm Design for Evolutionary Computation*. Padua, Italy. July 18–23, 2022.

**Program Committee Member** of *ICINCO 2022 – 19th International Conference on Informatics in Control, Automation and Robotics*. Lisbon, Portugal. July 14–16, 2022.

**Program Committee Member** of *GECCO 2022 – Genetic and Evolutionary Computation Conference*. Boston MA, USA. July 9–13, 2022.

**Senior Program Committee Member** of *IJCAI – 30th International Joint Conference on Artificial Intelligence*. Montreal, Canada. August 21–26, 2021.

**Program Committee Member** of *GECCO 2021 – Genetic and Evolutionary Computation Conference*. Lille, France. July 10–14, 2021.

**Program Committee Member** of *ICINCO 2021 – 18th International Conference on Informatics in Control, Automation and Robotics*. Online. July 6–8, 2021.

**Program Committee Member** of *DARS-SWARM 2021 – Int. Symposium on Distributed Autonomous Robotic Systems*. Kyoto, Japan. June 1–4, 2021.

**Program Committee Member** of *DARS 2020 – Int. Symposium on Distributed Autonomous Robotic Systems*. Kyoto, Japan. November 24–27, 2020.

**Program Committee Member** of *SWARM 2020 – International Symposium on Swarm Behavior and Bio-Inspired Robotics*. Kyoto, Japan. November 24–27, 2020.

**Program Committee Member** of *PPSN 2020 – Parallel Problem Solving from Nature*. Leiden, The Netherlands. September 7–9, 2020

**Program Committee Member** of *LOD 2020 – 6th International Conference on machine Learning, Optimization and Data Science*. Siena, Italy. July 19–22, 2020.

**Senior Program Committee Member** of *IJCAI-PRICAI – 29th International Joint Conference on Artificial Intelligence and the 17th Pacific Rim International Conference on Artificial Intelligence*. Yokohama, Japan. July 11–17, 2020.

**Program Committee Member** of *GECCO 2020 – Genetic and Evolutionary Computation Conference*. Cancún, Mexico. July 8–12, 2020.

**Program Committee Member** of *ICINCO 2020 – 17th International Conference on Informatics in Control, Automation and Robotics*. Lieusaint-Paris, France. Jul 7–9, 2020.

**Senior Program Committee Member** of *ECAI 2020 – European Conference on Artificial Intelligence*. Santiago de Compostela, Spain. June 8–12, 2020.

**Program Committee Member** of *TPNC 2019 – International Conference on the Theory and Practice of Natural Computing*. Kingston, Canada. December 9–11, 2019.

**Program Committee Member** of *SWARM 2019 – The 3rd International Symposium on Swarm Behavior and Bio-Inspired Robotics*. Okinawa, Japan. November 20–22, 2019.

**Program Committee Member** of *LOD 2019 – 5th International Conference on machine Learning, Optimization and Data Science*. Siena, Italy. September 10–13, 2019.

**Program Committee Member** of *ICINCO 2019 – 16th International Conference on Informatics in Control, Automation and Robotics*. Prague, Czech Republic. July 29–31, 2019.

**Program Committee Member** of *GECCO 2019 – Genetic and Evolutionary Computation Conference*. Prague, Czech Republic. July 13–17, 2019.

**Program Committee Member** of *TPNC 2018 – International Conference on the Theory and Practice of Natural Computing*. Dublin, Ireland. December 12–14, 2018.

**Program Committee Member** of *CIE48 – International Conference on Computers & Industrial Engineering*. Lisbon, Portugal. December 2–5, 2018.

**Program Committee Member** of *DARS 2018 – 14th Int. Symposium on Distributed Autonomous Robotic Systems*. Boulder, CO, USA. October 15–17, 2020.

**Program Committee Member** of *LOD 2018 – 4th International Conference on machine Learning, Optimization and Data Science*. Volterra, Italy. September 13–16, 2018.

**Program Committee Member** of *PPSN 2018 – Parallel Problem Solving from Nature*. Coimbra, Portugal. September 8–12, 2018

**Program Committee Member** of *ICINCO 2018 – 15th International Conference on Informatics in Control, Automation and Robotics*. Porto, Portugal. July 29–31, 2018.

**Program Committee Member** of *GECCO 2018 – Genetic and Evolutionary Computation Conference*. Kyoto, Japan. July 15–19, 2018.

**Senior Program Committee Member** of *IJCAI 2018: International Joint Conferences on Artificial Intelligence*. Stockholm, Sweden. July 13–19, 2018.

**Program Committee Member** of *RoSE 2018: 1st International Workshop on Robotics Software Engineering*. Gothenburg, Sweden. May 28, 2018.

**Program Committee Member** of *BNAIC 2017 – 29th Benelux Conference on Artificial Intelligence*. Groningen, The Netherlands. November 8–9, 2017.

**Program Committee Member** of *SWARM 2017 – The 2nd International Symposium on Swarm Behavior and Bio-Inspired Robotics*. Kyoto, Japan. October 29–November 1, 2017.

**Program Committee Member** of *CIE47 – International Conference on Computers & Industrial Engineering*. Lisbon, Portugal. October 11–13, 2017.

**Program Committee Member** of *MOD 2017 – 3rd International Workshop on Machine learning, Optimization and big Data*. Volterra, Italy. September 14–17, 2017.

**Program Committee Member** of *ICINCO 2017 – 14th International Conference on Informatics in Control, Automation and Robotics*. Madrid, Spain. July 29–31, 2017.

**Program Committee Member** of *GECCO 2017 – Genetic and Evolutionary Computation Conference*. Berlin, Germany. July 15–19, 2017.

**Program Committee Member** of *AAAI Video Competition 2017 – 11th artificial intelligence video competition*. San Francisco CA, USA. February 4–9, 2017.

**Program Committee Member** of *BNAIC 2016 – 28th Benelux Conference on Artificial Intelligence*. Amsterdam, The Netherlands. November 10–11, 2016.

**Program Committee Member** of *DARS 2016 – 13th Int. Symposium on Distributed Autonomous Robotic Systems*. London, UK. November 7–9, 2016.

**Program Committee Member** of *CIE46 – International Conference on Computers & Industrial Engineering*. Tianjin, China. October 29–31, 2016.

**Program Committee Member** of *PPSN 2016 – Parallel Problem Solving from Nature*. Edinburgh, UK. September 17–21, 2016.

**Program Committee Member** of *MOD 2016 – 2nd International Workshop on Machine learning, Optimization and big Data*. Volterra, Italy. August 26–29, 2016.

**Program Committee Member** of *VALID 2016 – Advances in System Testing and Validation Lifecycle*. Brussels, Belgium. Aug 21–25, 2016

**Program Committee Member** of *ICINCO 2016 – 13th International Conference on Informatics in Control, Automation and Robotics*. Lisbon, Portugal. July 29–31, 2016.

**Program Committee Member** of *GECCO 2016 – Genetic and Evolutionary Computation Conference*. Denver CO, USA. July 20–24, 2016.

**Program Committee Member** of *HM 2015 – 10th International Workshop on Hybrid Metaheuristics*. Plymouth, UK. June 8–10, 2016.

**Program Committee Member** of *COGNITIVE 2016 – Eighth International Conference on Advanced Cognitive Technologies and Applications*. Rome, Italy. March 20–24, 2016.

**Program Committee Member** of *AAAI Video Competition 2016 – 10th artificial intelligence video competition*. Phoenix AZ, USA. February 12–17, 2016.

**Program Committee Member** of *SIS 2015 – IEEE Swarm Intelligence Symposium*. Cape Town, South Africa, December 7–10, 2015.

**Program Committee Member** of *VALID 2015 – Advances in System Testing and Validation Lifecycle*. Barcelona, Spain. November 15–20, 2015

**Program Committee Member** of *CIE45 – International Conference on Computers & Industrial Engineering*. Metz, France. October 28–30, 2015.

**Program Committee Member** of *SWARM 2015 – The First International Symposium on Swarm Behavior and Bio-Inspired Robotics*. Kyoto, Japan. October 28–30, 2015.

**Program Committee Member** of *IJCAI 2015 – International Joint Conference on Artificial Intelligence*. Buenos Aires, Argentina. July 25–31, 2015.

**Program Committee Member** of *ICINCO 2015 – 12th International Conference on Informatics in Control, Automation and Robotics*. Colmar, France. July 21–23, 2015.

**Program Committee Member** of *GECCO 2015 – Genetic and Evolutionary Computation Conference*. Madrid, Spain. July 11–15, 2015.

**Program Committee Member** of *MIC 2015 – Metaheuristics International Conference*. Agadir, Morocco. June 7–10, 2015.

**Program Committee Member** of *COGNITIVE 2015 – Seventh International Conference on Advanced Cognitive Technologies and Applications*. Nice, France. March 22–27, 2015.

**Program Committee Member** of *AlgoConf – AAAI-15 Workshop on Algorithm Configuration*. Austin Texas, USA. January 25, 2015. < **Program Committee Member** of *AAAI-15 – AAAI Conference on Artificial Intelligence*. Austin Texas, USA. January 25–29, 2015.

**Program Committee Member** of *LION 9 – Learning and Intelligent Optimization*. Lille, France. January 12–16, 2015.

**Program Committee Member** of *VALID 2014 – Advances in System Testing and Validation Lifecycle*. Nice, France. October 12–16, 2014.

**Program Committee Member** of *PPSN 2014 – Parallel Problem Solving from Nature*. Ljubljana, Slovenia. September 13–17, 2014.

**Program Committee Member** of *ICINCO 2014 – 11th International Conference on Informatics in Control, Automation and Robotics*. Vienna, Austria. September 1–3, 2014.

**Program Committee Member** of *ECAI 2014 – European Conference on Artificial Intelligence*. Prague, Czech Republic. 18–22 August 2014.

**Program Committee Member** of *GECCO 2014 – Genetic and Evolutionary Computation Conference*. Vancouver, Canada. July 12–16, 2014.

**Program Committee Member** of *HM 2014 – Ninth International Workshop on Hybrid Metaheuristics*. Hamburg, Germany. June 9–13, 2014.

**Program Committee Member** of *COGNITIVE 2014 – Sixth International Conference on Advanced Cognitive Technologies and Applications*. Venice, Italy. May 25–29, 2014.

**Program Committee Member** of *AAMAS 2014 – 13th International Conference on Autonomous Agents and Multiagent Systems*. Paris, France. May 5–9, 2014.

**Program Committee Member** of *LION 8 – Learning and Intelligent Optimization*. Gainesville FL, USA. February 16–21, 2014.

**Program Committee Member** of *TPNC 2013 – Theory and Practice of Natural Computing*. Caceres, Spain. December 3–5, 2013.

**Program Committee Member** of *GCIS 2013 – Global Congress on Intelligent Systems*. Hong Kong. December 3–4, 2013.

**Program Committee Member** of *BNAIC 2013 – 25th Benelux Conference on Artificial Intelligence*. Delft, The Netherlands. November 7–8, 2013.

**Program Committee Member** of *CIE43 – International Conference on Computers & Industrial Engineering*. Hong Kong. October 16–18, 2013.

**Program Committee Member** of *ECAL 2013 – European Conference on Artificial Life*. Taormina, Italy. September 2–6, 2013.

**Program Committee Member** of *MIC 2013 – Metaheuristics International Conference*. Singapore. August 5–8, 2013.

**Program Committee Member** of *ICINCO 2013 – 10th International Conference on Informatics in Control, Automation and Robotics*. Reykjavik, Iceland. July 29–31, 2013.

**Program Committee Member** of *GECCO 2013 – Genetic and Evolutionary Computation Conference*. Amsterdam, The Netherlands. July 6–10, 2013.

**Program Committee Member** of *COGNITIVE 2013 – Fifth International Conference on Advanced Cognitive Technologies and Applications*. Valencia, Spain. May 27–June 1, 2013.

**Program Committee Member** of *HM 2013 – Eight International Workshop on Hybrid Metaheuristics*. Ischia, Italy. May 23–25, 2013.

**Program Committee Member** of *AAMAS 2013 – 12th International Conference on Autonomous Agents and Multiagent Systems*. Saint Paul, MN, USA. May 6–10, 2013.

**Program Committee Member** of *LION 7 – Learning and Intelligent Optimization*. Catania, Italy. January 7–11, 2013.

**Program Committee Member** of *IEEE ICDM 2012 PhD Forum – International Conference on Data Mining*. Brussels, Belgium. December 10–13, 2012.

**Program Committee Member** of *BNAIC 2012 – 24th Benelux Conference on Artificial Intelligence*. Maastricht, The Netherlands. October 25–26, 2012.

**Program Committee Member** of *TPNC 2012 – Theory and Practice of Natural Computing*. Tarragona, Spain. October 1–5, 2012.

**Program Committee Member** of *PPSN 2012 – Parallel Problem Solving from Nature*. Taormina, Italy. September 1–5, 2012.

**Program Committee Member** of *ECAI 2012 – European Conference on Artificial Intelligence*. Montpellier, France. 27–31 August 2012.

**Program Committee Member** of *ICINCO 2012 – 9th International Conference on Informatics in Control, Automation and Robotics*. Rome, Italy, July 28–31, 2012.

**Program Committee Member** of *COGNITIVE 2012 – Fourth International Conference on Advanced Cognitive Technologies and Applications*. Nice, France, July 22–27, 2012.

**Program Committee Member** of *ICIEA 2012 – 7th IEEE Conference on Industrial Electronics and Applications*. Singapore. July 18–20, 2012.

**Program Committee Member** of *GECCO 2012 – Genetic and Evolutionary Computation Conference*. Philadelphia, USA, July 7–11, 2012.

**Program Committee Member** of *LION 6 – Learning and Intelligent Optimization*. Paris, France, January 16–20, 2012.

**Program Committee Member** of the *Workshop on Bayesian Optimization, Experimental Design and Bandits, NIPS 2011*. Sierra Nevada, Spain, December 16, 2011.

**Program Committee Member** of *COGNITIVE 2011 – Third International Conference on Advanced Cognitive Technologies and Applications*. Rome, Italy, September 25–30, 2011.

**Program Committee Member** of *ECAL 2011 – European Conference on Artificial Life*. Paris, France, August 8–12, 2011.

**Program Committee Member** of *ICINCO 2011 – 8th Int. Conference on Informatics in Control, Automation and Robotics*. Noordwijkerhout, The Netherlands, July 28–31, 2011.

**Program Committee Member** of *MIC 2011 – Metaheuristics International Conference*. Udine, Italy, July 25–28, 2011.

**Program Committee Member** of *GECCO 2011 – Genetic and Evolutionary Computation Conference*. Dublin, Ireland, July 12–16, 2011.

**Program Committee Member** of *ICIEA 2011 – 6th IEEE Conference on Industrial Electronics and Applications*. Beijing, China, June 21–23, 2011.

**Program Committee Member** of *CSIE 2011 – 2nd World Congress on Computer Science and Information Engineering*. Changchun, China, June 17–19, 2011.

**Program Committee Member** of *AAMAS 2011 – International Joint Conference on Autonomous Agents and Multiagent Systems*. Taipei, Taiwan, May 2–6, 2011.

**Program Committee Member** of *SIS 2011 – IEEE Swarm Intelligence Symposium*. Paris, France, April 11–15, 2011.

**Program Committee Member** of *LION 5 – Learning and Intelligent Optimization*. Rome, Italy, January 17–21, 2011.

**Program Committee Member** of *GCIS 2010 – Global Congress on Intelligent Systems*. Wuhan, China, December 16–17, 2010.

**Program Committee Member** of *HM 2010 – Seventh International Workshop on Hybrid Metaheuristics*. Vienna, Austria, October 1–2, 2010.

**Program Committee Member** of *EMACS – Experimental Methods for the Assessment of Computational Systems*. Krakow, Poland, September 11, 2010.

**Program Committee Member** of *GECCO 2010 – Genetic and Evolutionary Computation Conference*. Portland, Oregon. July 7–11, 2010.

**Program Committee Member** of *ICINCO 2010 – 7th International Conference on Informatics in Control, Automation and Robotics*. Madeira, Portugal, June 15–18, 2010.

**Program Committee Member** of *ICIEA 2010 – 5th IEEE Conference on Industrial Electronics and Applications*. Taichung, Taiwan, June 15–17, 2010.

**Program Committee Member** of *LION 4 – Learning and Intelligent Optimization*. Venice, Italy, January 18–22, 2010.

**Program Committee Member** of *ISDA 2009 – 9th International Conference on Intelligent Systems Design and Applications*. Pisa, Italy, November 30–December 2, 2009.

**Program Committee Member** of *HM 2009 – Sixth International Workshop on Hybrid Metaheuristics*. Udine, Italy, October 16–17, 2009.

**Program Committee Member** of *SLS-DS 2009 – Second Doctoral Symposium on Engineering Stochastic Local Search Algorithms*. Brussels, Belgium, September 4, 2009.

**Program Committee Member** of *CIE39 – International Conference on Computers & Industrial Engineering*. Troyes, France, July 6–8, 2009.

**Program Committee Member** of *ICIEA 2009 – The 4th IEEE Conference on Industrial Electronics and Applications*. Xi’an, China, May 25–27, 2009.

**Program Committee Member** of *GCIS 2009 – Global Congress on Intelligent Systems*. Xiamen, China, May 19–21, 2009.

**Program Committee Member** of *CEC 2009 – IEEE Congress on Evolutionary Computation*. Trondheim, Norway, May 18–21, 2009.

**Program Committee Member** of *SIS 2009 – IEEE Swarm Intelligence Symposium*. Nashville, TN, USA, March 30–April 2, 2009.

**Program Committee Member** of *LION 3 – Learning and Intelligent Optimization*. Trento, Italy, January 14–18, 2009.

**Program Committee Member** of *HM 2008 – Fifth International Workshop on Hybrid Metaheuristics*. Málaga, Spain, October 8–9, 2008.

**Program Committee Member** of *HIS 2008 – 8th International Conference on Hybrid Intelligent Systems*. Barcelona, Spain, September 10–12, 2008.

**Program Committee Member** of *WCCI 2008 – IEEE World Congress on Computational Intelligence*. Hong Kong, June 1–6, 2008.

**Program Committee Member** of *HM 2007 – Fourth International Workshop on Hybrid Metaheuristics*. Dortmund, Germany, October 8–9, 2007.

**Program Committee Member** of *SIS 2007 – IEEE Swarm Intelligence Symposium*. Honolulu, HI, USA, April 1–5, 2007.

**Program Committee Member** of *EMAA 2006 – Workshop on Empirical Methods for the Analysis of Algorithms*. Reykjavik, Iceland September 9, 2006.

**Program Committee Member** of *HM 2006 – Third International Workshop on Hybrid Metaheuristics*. Agaete, Spain, October 13–15, 2006.

**Program Committee Member** of *HM 2005 – Second International Workshop on Hybrid Metaheuristics*. Barcelona, Spain, August 29–30, 2005.

**Referee** for several international conferences and for a number of international journals including: *IEEE Transactions on Evolutionary Computation*, *IEEE Transactions on Systems, Man, and Cybernetics*, *Journal of Artificial Intelligence Research*, *Journal of Mathematical Modelling and Algorithms*, *Annals of Operations Research*, *Computers and Operations Research*, *Genetic Programming and Evolvable Machines*, *Constraints Journal*, *Connection Science*, *International Journal of Systems Science*, *Theoretical Computer Science*, *ACM Computing Surveys*, *Environmental Modelling and Software*, *Fuzzy Sets and Systems*, and *Autonomous Robots*.

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ACADEMIC AND PROFESSIONAL SOCIETIES Senior Member of *ACM* since 2018; member since 2010.

Senior Member of the *IEEE* since 2012; member since 2005. Member of the *IEEE Computational Intelligence Society*, of the *IEEE Robotic and Automation Society*, and of the *IEEE AADCs: Task Force on Automated Algorithm Design, Configuration and Selection*.

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ACADEMIC AND INDUSTRIAL RESEARCH PROJECTS **SwarmUP**. Principal investigator of the *crédit de recherche* F.R.S.–FNRS aiming at realizing robots for studying the automatic design of collective behaviors.

**Swarm Mapping.** Principal investigator of the project funded by the *Fondation Jaumotte-Demoulin* on the study of collective distributed mapping with a robot swarm.

**GbO–Guaranteed by Optimization.** Principal investigator of the *Action de Recherche Concertée* aiming at generating automatically robotics systems with guaranteed properties.

**SwarmSim.** Principal investigator of the *crédit d'équipement* F.R.S.–FNRS aiming at realizing a simulation environment for the automatic off-line design of robot swarms

**DEMIURGE.** Principal investigator of the project on the automatic design of robot swarms selected for funding by the European Research Council via an ERC Consolidator Grant.

**ASCENS.** Member of the project on autonomic service-component ensembles funded by the European Union within the *Future and Emerging Technologies* (IST-FET) program.

**Swarm-Morph.** Research director of the project on robot morphogenesis funded by the *Fonds de la Recherche Fondamentale Collective* (FRFC) of Belgium's Wallonia-Brussels Federation.

**Meta-X.** Main investigator of the *action de recherche concertée* (ARC) on metaheuristics for complex optimization problems funded by Belgium's Wallonia-Brussels Federation.

**Evolving a Collective Consciousness for a Swarm of Pico-Satellites.** Member of the project funded by the *Ariadna* initiative of the European Space Agency.

**SWARMANOID.** Member of the scientific committee of the *future and emerging technologies* project funded by the European Commission.

**COMP<sup>2</sup>SYS.** Member of the training staff of the *early stage researchers training site* funded by the European Commission within the Marie Curie Actions program.

**ANTS.** Member of the *action de recherche concertée* (ARC) on the theoretical and experimental analysis of ant algorithms, funded by Belgium's Wallonia-Brussels Federation.

**METAHEURISTICS.** Grant holder in the *training and research network* on metaheuristics funded by the European Commission.

**FAMIMO.** Contribution to the *Esprit* project funded by the European Commission, through the implementations of local techniques for nonlinear prediction and control.

**MARCH.** Participation in the *action de recherche concertée* (ARC) on pattern recognition funded by Wallonia-Brussels Federation.

**Masterfood.** Collaboration with the research center of Masterfood for the prediction of market indices using lazy learning techniques.

**D'Ieteren.** Lazy learning techniques for predicting the annual amount of sales of a Belgian retailer, on the basis of historical data.

**FaFer Usinor.** Lazy learning for modeling the rolling mill process of the steel company FaFer in Charleroi, Belgium. FIRST Project funded by the Walloon Region, Belgium.

**Honeywell.** Collaboration on a data mining project with Honeywell Technology in Minneapolis, MN, USA, and in Prague, Czech Republic.

**Tractebel.** Feasibility study for the adoption of local lazy learning techniques for forecasting electrical loads. In collaboration with the Belgian electric power company.

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CONTACT	<b>Mauro Birattari</b>	
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PERSONAL DATA	Born in Milan, Italy, on June 24, 1969. Italian and Belgian citizen. Languages: Italian, English, and French.
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EXTRA-  
PROFESSIONAL  
ACTIVITIES

Mauro Birattari holds a black belt 2nd degree in Brazilian jiu-jitsu. He is the president, co-founder, and co-head instructor of Kaizen BJJ Brussels, a Brazilian jiu-jitsu academy that currently counts more than one hundred members. His hobbies include street photography, music, and cooking.



# Scientific Publications of Mauro Birattari

as of February 2022

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- BOOKS
- [B02] M. Birattari (2009). *Tuning Metaheuristics: A Machine Learning Perspective*. Springer, Berlin, Germany.
- [B01] M. Birattari (2005). *The Problem of Tuning Metaheuristics as Seen from a Machine Learning Perspective*. DISKI 292, Infix/Aka, Berlin, Germany.
- 
- ARTICLES IN JOURNALS
- [J68] F. Pagnozzi and M. Birattari (2021). Off-policy evaluation of the performance of a robot swarm: Importance sampling to assess potential modifications to the finite-state machine that controls the robots. *Frontiers in Robotics and AI*, 8:625125
- [J67] M. Kegeleirs, G. Grisetti, and M. Birattari (2021). Swarm SLAM: challenges and perspectives. *Frontiers in Robotics and AI*, 8:618268
- [J66] M. Salman, D. Garzón Ramos, K. Hasselmann, and M. Birattari (2020). Phormica: Photochromic pheromone release and detection system for stigmergic coordination in robot swarms. *Frontiers in Robotics and AI*, 7:591402
- [J65] J. Kuckling, T. Stützle, and M. Birattari (2020). Iterative improvement in the automatic modular design of robot swarms. *PeerJ Computer Science*, 6:e322
- [J64] A. Ligot, J. Kuckling, D. Bozhinoski, and M. Birattari (2020). Automatic modular design of robot swarms using behavior trees as a control architecture. *PeerJ Computer Science*, 6:e314
- [J63] K. Hasselmann and M. Birattari (2020). Modular automatic design of collective behaviors for robots endowed with local communication capabilities. *PeerJ Computer Science*, 6:e291.
- [J62] M. Birattari, A. Ligot, and K. Hasselmann (2020). Disentangling automatic and semi-automatic approaches to the optimization-based design of control software for robot swarms. *Nature Machine Intelligence*, 2(9):494–499.
- [J61] D. Garzón Ramos and M. Birattari (2020). Automatic design of collective behaviors for robots that can display and perceive colors. *Applied Sciences*, 10(13):4654.
- [J60] A. Ligot and M. Birattari (2020). Simulation-only experiments to mimic the effects of the reality gap in the automatic design of robot swarms. *Swarm Intelligence*, 14(1):1–24.
- [J59] A. Roli, A. Ligot and M. Birattari (2019). Complexity measures: questions and novel opportunities in the automatic design and analysis of robot swarms. *Frontiers in Robotics and AI*, 6(130):1–8.
- [J58] M. Salman, A. Ligot, and M. Birattari (2019). Concurrent design of control software and configuration of hardware for robot swarms under economic constraints. *PeerJ Computer Science*, 5:e221.
- [J57] M. Birattari, A. Ligot, D. Bozhinoski, M. Brambilla, G. Francesca, L. Garattoni, D. Garzón Ramos, K. Hasselmann, M. Kegeleirs, J. Kuckling, F. Pagnozzi, A. Roli, M. Salman, and T. Stützle (2019). Automatic off-line design of robot swarms: a manifesto. *Frontiers in Robotics and AI*, 6(59):1–6.
- [J56] L. Garattoni and M. Birattari (2018). Autonomous task sequencing in a robot swarm. *Science Robotics*, 3(20):eaat0430.
- [J55] M. López-Ibáñez, J. Dubois-Lacoste, L. Pérez Cáceres, M. Birattari, and T. Stützle (2016). The irace package: Iterated racing for automatic algorithm configuration. *Operations Research Perspectives*, 3:43–58.
- [J54] G. Francesca and M. Birattari (2016). Automatic design of robot swarms: achievements and challenges. *Frontiers in Robotics and AI*, 3(29):1–9.
- [J53] Y. Khaluf, M. Birattari, and F. Rammig (2016). Analysis of long-term swarm performance based on short-term experiments. *Soft Computing*, 20(1):37–48

- [J52] G. Francesca, M. Brambilla, A. Brutschy, L. Garattoni, R. Miletitch, G. Podevijn, A. Reina, T. Soleymani, M. Salvaro, C. Pinciroli, F. Mascia, V. Trianni, M. Birattari (2015). AutoMoDe-Chocolate: automatic design of control software for robot swarms. *Swarm Intelligence*, 9(2/3):125–152.
- [J51] P. Balaprakash, M. Birattari, T. Stützle, and M. Dorigo (2015). Estimation-based metaheuristics for the single vehicle routing problem with stochastic demands and customers. *Computational Optimization and Applications*, 61(2):463–487.
- [J50] A. Brutschy, L. Garattoni, M. Brambilla, G. Francesca, G. Pini, M. Dorigo, and M. Birattari (2015). The TAM: Abstracting complex tasks in swarm robotics research. *Swarm Intelligence*, 9(1):1–22.
- [J49] C. Pinciroli, M. Birattari, and M. Dorigo (2014). ARGoS: un simulatore modulare e multi-motore per sistemi multi-robot. *Sistemi intelligenti* 26(3):495–520.
- [J48] M. Brambilla, E. Ferrante, A. Prima, M. Birattari, and M. Dorigo (2014). Robotica di sciame: una rassegna bibliografica. *Sistemi intelligenti* 26(3):465–494.
- [J47] G. di Tollo, T. Stützle, and M. Birattari (2014). A metaheuristic multi-criteria optimisation approach to portfolio selection. *Journal of Applied Operational Research*, 6(4):222–242.
- [J46] M. Brambilla, A. Brutschy, M. Dorigo, and M. Birattari (2014). Property-driven design for robot swarms: A design method based on prescriptive modeling and model checking. *ACM Transactions on Autonomous and Adaptive Systems*, 9(4):17/1–17/28.
- [J45] P. Pellegrini, F. Mascia, T. Stützle, and M. Birattari (2014). On the sensitivity of reactive tabu search to its meta-parameters. *Soft Computing*, 18(11):2177–2190.
- [J44] G. Francesca, M. Brambilla, A. Brutschy, V. Trianni, and M. Birattari (2014). AutoMoDe: A novel approach to the automatic design of control software for robot swarms. *Swarm Intelligence*, 8(2):89–112.
- [J43] G. Pini, A. Brutschy, A. Scheidler, M. Dorigo, and M. Birattari (2014). Task partitioning in a robot swarm: object retrieval as a sequence of sub-tasks with direct object transfer. *Artificial Life*, 20(3):291–317.
- [J42] E. Ferrante, A.E. Turgut, A. Stranieri, C. Pinciroli, M. Birattari, and M. Dorigo (2014). A self-adaptive communication strategy for flocking in stationary and non-stationary environments. *Natural Computing*, 13(2):225–245.
- [J41] M. Dorigo, M. Birattari, M. Brambilla (2014). Swarm robotics. *Scholarpedia*, 9(1):1463.
- [J40] F. Mascia, P. Pellegrini, M. Birattari, and T. Stützle (2014). An analysis of parameter adaptation in reactive tabu search. *International Transactions in Operational Research*, 21(1):127–152.
- [J39] A. Brutschy, G. Pini, C. Pinciroli, M. Birattari, and M. Dorigo (2014). Self-organized task allocation to sequentially interdependent tasks in swarm robotics. *Autonomous Agents and Multi-Agent Systems*, 28(1):101–125.
- [J38] Dorigo M., D. Floreano, L. M. Gambardella, F. Mondada, S. Nolfi, T. Baaboura, M. Birattari, M. Bonani, M. Brambilla, A. Brutschy, D. Burnier, A. Campo, A. L. Christensen, A. Decugnière, G. Di Caro, F. Ducatelle, E. Ferrante, A. Förster, J. Guzzi, V. Longchamp, S. Magnenat, J. Martinez Gonzales, N. Mathews, M. Montes de Oca, R. O’Grady, C. Pinciroli, G. Pini, P. Réturnaz, J. Roberts, V. Sperati, T. Stirling, A. Stranieri, T. Stützle, V. Trianni, E. Tuci, A. E. Turgut, and F. Vaussard (2013). Swarmanoid: A Novel Concept for the Study of Heterogeneous Robotic Swarms. *IEEE Robotics & Automation Magazine*, 20(4):60–71.
- [J37] C. Pinciroli, R. O’Grady, A. Christensen, M. Birattari, and M. Dorigo (2013). Parallel formation of differently sized groups in a robotic swarm. *Journal of the Society of Instrument and Control Engineers*, 52(3):213–226.
- [J36] G. Pini, A. Brutschy, C. Pinciroli, M. Dorigo, and M. Birattari (2013). Autonomous task partitioning in robot foraging: an approach based on cost estimation. *Adaptive Behavior*, 21(2):118–136.

- [J35] M. Massink, M. Brambilla, D. Latella, M. Dorigo, and M. Birattari (2013). On the use of Bio-PEPA for modelling and analysing collective behaviours in swarm robotics. *Swarm Intelligence*, 7(2/3):201-228.
- [J34] G. Pini, M. Gagliolo, A. Brutschy, M. Dorigo, and M. Birattari (2013). Task partitioning in a robot swarm: a study on the effect of communication. *Swarm Intelligence*, 7(2/3):173-199.
- [J33] M. Brambilla, E. Ferrante, M. Birattari, and M. Dorigo (2013). Swarm robotics: A review from the swarm engineering perspective. *Swarm Intelligence*, 7(1):1-41.
- [J32] S. Benedettini, M. Villani, A. Roli, R. Serra, M. Manfroni, A. Gagliardi, C. Pinciroli, and M. Birattari (2013). Dynamical regimes and learning properties of evolved Boolean networks. *Neurocomputing*, 99:111-123.
- [J31] A. Brutschy, N.-L. Tran, N. Baiboun, M. Frison, G. Pini, A. Roli, M. Dorigo, and M. Birattari (2012). Costs and benefits of behavioral specialization. *Robotics and Autonomous Systems*, 60(11):1408-1420.
- [J30] C. Pinciroli, V. Trianni, R. O’Grady, G. Pini, A. Brutschy, M. Brambilla, N. Mathews, E. Ferrante, G. Di Caro, F. Ducatelle, M. Birattari, L. M. Gambardella, and M. Dorigo (2012). ARGoS: a modular, multi-engine simulator for heterogeneous swarm robotics. *Swarm Intelligence*, 6(4):271-295.
- [J29] Z. Yuan, M. Montes de Oca, M. Birattari, and T. Stützle (2012). Continuous optimization algorithms for tuning real and integer parameters of swarm intelligence algorithms. *Swarm Intelligence*, 6(1):49-75.
- [J28] P. Pellegrini, T. Stützle, M. Birattari (2012). A critical analysis of parameter adaptation in ant colony optimization. *Swarm Intelligence*, 6(1):23-48.
- [J27] M. Montes de Oca, E. Ferrante, A. Scheidler, C. Pinciroli, M. Birattari, and M. Dorigo (2011). Majority-rule opinion dynamics with differential latency: A mechanism for self-organized collective decision-making. *Swarm Intelligence*, 5(3/4):305-327.
- [J26] G. Pini, A. Brutschy, M. Frison, A. Roli, M. Dorigo, and M. Birattari (2011). Task partitioning in swarms of robots: An adaptive method for strategy selection. *Swarm Intelligence*, 5(3/4):283-304.
- [J25] J.A. Sabino, J.E. Leal, T. Stützle, and M. Birattari (2010). A multi-objective ant colony optimization method applied to switch engine scheduling in railroad yards. *Pesquisa Operacional*, 30(2):487-514.
- [J24] P. Balaprakash, M. Birattari, T. Stützle, and M. Dorigo (2010). Estimation-based metaheuristics for the probabilistic travelling salesman problem. *Computers & Operations Research*, 37(11):1939-1951.
- [J23] C. Piscopo and M. Birattari (2010). A critique of the constitutive role of truthlikeness in the similarity approach. *Erkenntnis*, 72(3):379-386.
- [J22] C. Twomey, T. Stützle, M. Dorigo, M. Manfrin, and M. Birattari (2010). An analysis of communication policies for homogeneous multi-colony ACO algorithms. *Information Sciences*, 180(12):2390-2404.
- [J21] P. Balaprakash, M. Birattari, T. Stützle, Z. Yuan, and M. Dorigo (2009). Estimation-based ant colony optimization and local search for the probabilistic traveling salesman problem. *Swarm Intelligence*, 3(3):223-242.
- [J20] M. A. Montes de Oca, T. Stützle, M. Birattari, and M. Dorigo (2009). Frankenstein’s PSO: A composite particle swarm optimization algorithm. *IEEE Transactions on Evolutionary Computation*, 13(5):1120-1132.
- [J19] P. Balaprakash, M. Birattari, T. Stützle, and M. Dorigo (2009). Adaptive sample size and importance sampling in estimation-based local search for the probabilistic traveling salesman problem. *European Journal of Operational Research*, 199:98-110.
- [J18] M. Birattari, P. Balaprakash, T. Stützle, and M. Dorigo (2008). Estimation-based local search for stochastic combinatorial optimization using delta evaluations: A case study on the probabilistic traveling salesman problem. *INFORMS Journal on Computing*, 20(4):644-658.

- [J17] C. Piscopo and M. Birattari (2008). The metaphysical character of the criticisms raised against the use of probability for dealing with uncertainty in artificial intelligence. *Minds and Machines*, 18(2):273–288.
- [J16] A. L. Christensen, R. O’Grady, M. Birattari, and M. Dorigo (2008). Fault detection in autonomous robots based on fault injection and learning. *Autonomous Robots*, 24(1):49–67.
- [J15] M. Dorigo and M. Birattari (2007). Swarm intelligence. *Scholarpedia*, 2(9):1462.
- [J14] M. Birattari, P. Pellegrini, and M. Dorigo (2007). On the invariance of ant colony optimization. *IEEE Transactions on Evolutionary Computation*, 11(6):732–742.
- [J13] M. Birattari and M. Dorigo (2007). How to assess and report the performance of a stochastic algorithm on a benchmark problem: Mean or best result on a number of runs? *Optimization Letters*, 1(3):309–311.
- [J12] M. Dorigo, M. Birattari, and T. Stützle (2006). Ant colony optimization: Artificial ants as a computational intelligence technique. *IEEE Computational Intelligence Magazine*, 1(4):28–39.
- [J11] M. Birattari, M. Zlochin, and M. Dorigo (2006). Towards a theory of practice in metaheuristics design: A machine learning perspective. *Theoretical Informatics and Applications*, 40(2):353–369.
- [J10] M. Chiarandini, M. Birattari, K. Socha, and O. Rossi-Doria (2006). An effective hybrid approach for the university course timetabling problem. *Journal of Scheduling*, 9(5):403–432.
- [J09] L. Bianchi, M. Birattari, M. Chiarandini, M. Manfrin, M. Mastrolilli, L. Paquete, O. Rossi-Doria, and T. Schiavinotto (2006). Hybrid metaheuristics for the vehicle routing problem with stochastic demands. *Journal of Mathematical Modelling and Algorithms*, 5(1):91–110.
- [J08] S. Nouyan, R. Ghizzioli, M. Birattari, and M. Dorigo (2005). An insect-based algorithm for the dynamic task allocation problem. *Künstliche Intelligenz*, 4/05:25–31.
- [J07] G. Bontempi and M. Birattari (2005). From linearization to lazy learning: A survey of divide-and-conquer techniques for nonlinear control, *International Journal of Computational Cognition*, 3(1):56–73.
- [J06] D. Villacci, G. Bontempi, A. Vaccaro, and M. Birattari (2005). The role of learning methods in the dynamic assessment of power components loading capability, *IEEE Transactions on Industrial Electronics*, 52(1):280–290.
- [J05] M. Zlochin, M. Birattari, N. Meuleau, and M. Dorigo (2004). Model-based search for combinatorial optimization: a critical survey, *Annals of Operations Research*, 131(1–4):375–395.
- [J04] E. Bertolissi, M. Birattari, G. Bontempi, A. Duchâteau, and H. Bersini (2002). Data-driven techniques for direct adaptive control: The lazy and the fuzzy approaches, *Fuzzy Sets and Systems*, 128(1):3–14.
- [J03] G. Bontempi, H. Bersini, and M. Birattari (2001). The local paradigm for modeling and control: From neuro-fuzzy to lazy learning, *Fuzzy Sets and Systems*, 121(1):59–72.
- [J02] G. Bontempi, M. Birattari, and H. Bersini (2000). A model selection approach for local learning, *AI Communications*, 13(1):41–47.
- [J01] G. Bontempi, M. Birattari, and H. Bersini (1999). Lazy learning for local modeling and control design, *International Journal of Control*, 72(7/8):643–658.

---

EDITED  
CONFERENCE  
PROCEEDINGS  
AND JOURNAL  
SPECIAL ISSUES

[E22] M. Dorigo, M. Birattari, C. Blum, A.L. Christensen, A. Reina, and V. Trianni (Eds.) (2019/2020). *ANTS 2018 Special Issue*, Swarm Intelligence, 13(3/4) and 14(1).

[E21] M. Dorigo, M. Birattari, C. Blum, A. Christensen, A. Reina, V. Trianni (Eds.) (2018). *Swarm Intelligence, 11th International Conference, ANTS 2018*, LNCS 11172, Springer, Cham, Switzerland.

- [E20] M. Dorigo, M. Birattari, X. Li, M. López-Ibáñez, K. Ohkura, C. Pinciroli, T. Stützle (Eds.) (2017). *ANTS 2016 Special Issue*, Swarm Intelligence, 11(3/4).
- [E19] M. Dorigo, M. Birattari, X. Li, M. López-Ibáñez, K. Ohkura, C. Pinciroli, T. Stützle (Eds.) (2016). *Swarm Intelligence, 10th International Conference, ANTS 2016*, LNCS 9882, Springer, Cham, Switzerland.
- [E18] M. Dorigo, M. Birattari, S. Garnier, H. Hamann, M. A. Montes de Oca, C. Solnon, T. Stützle (Eds.) (2015). *ANTS 2014 Special Issue*, Swarm Intelligence, 9(2/3).
- [E17] S. Hauert and M. Birattari (Eds.) (2015). *AAAI Video Competition 2015*, online video proceedings, <http://www.aaavideos.org>
- [E16] M. Dorigo, M. Birattari, S. Garnier, H. Hamann, M. Montes de Oca, C. Solnon, T. Stützle (Eds.) (2014). *Swarm Intelligence, 9th International Conference, ANTS 2014*, LNCS 8667, Springer, Berlin, Germany.
- [E15] M. Birattari and S. Hauert (Eds.) (2014). *AAAI Video Competition 2014*, online video proceedings, <http://www.aaavideos.org>
- [E14] M. Dorigo, M. Birattari, C. Blum, A.L. Christensen, A. Engelbrecht, R. Groß, T. Stützle (Eds.) (2013) *ANTS 2012 Special Issue*, Swarm Intelligence, 7(2/3).
- [E13] M. Dorigo, M. Birattari, and R. O’Grady (Eds.) (2013). *AAAI Video Competition 2013*, online video proceedings, <http://www.aaavideos.org>
- [E12] M. Dorigo, M. Birattari, C. Blum, A. L. Christensen, A. P. Engelbrecht, R. Groß, and T. Stützle (Eds.) (2012). *Swarm Intelligence, 8th International Conference, ANTS 2012*, LNCS 7461, Springer, Berlin, Germany.
- [E11] M. Dorigo, M. Birattari, and R. O’Grady (Eds.) (2012). *AAAI Video Competition 2012*, online video proceedings, <http://www.aaavideos.org>
- [E10] M. Dorigo, M. Birattari, G. Di Caro, R. Doursat, A. Engelbrecht, L. M. Gambardella, R. Groß, E. Şahin, and T. Stützle (Eds.) (2011/2012) *ANTS 2010 Special Issue*, Swarm Intelligence, 5(3/4) and 6(1).
- [E09] M. Dorigo, M. Birattari, G. A. Di Caro, R. Doursat, A. P. Engelbrecht, D. Floreano, L. M. Gambardella, R. Groß, E. Şahin, H. Sayama, and T. Stützle (Eds.) (2010). *Swarm Intelligence, 7th International Conference, ANTS 2010*, LNCS 6234, Springer, Berlin, Germany.
- [E08] T. Stützle, M. Birattari, and H. H. Hoos (Eds.) (2009). *Engineering Stochastic Local Search Algorithms: Designing, Implementing and Analyzing Effective Heuristics, 2nd International Workshop, SLS 2009*, LNCS 5752. Springer, Berlin, Germany.
- [E07] G.R. Raidl, E. Alba, J. Bacardit, H.-G. Beyer, M. Birattari, C. Blum, P.A.N. Bosman, C.B. Congdon, D. Corne, C. Cotta, M. Di Penta, B. Doerr, R. Drechsle, M. Ebner, J. Grahl, T. Jansen, J.D. Knowles, T. Lenaerts, M. Middendorf, J. F. Miller, M. O’Neill, R. Poli, G. Squillero, K.O. Stanley, T. Stützle, J. van Hemert (Eds.) (2009) *GECCO 2009: Genetic and Evolutionary Computation Conference*. ACM, New York, NY, USA.
- [E06] M. Dorigo, M. Birattari, C. Blum, M. Clerc, T. Stützle, and A.F.T. Winfield (Eds.) (2008). *Ant Colony Optimization and Swarm Intelligence, 6th International Conference, ANTS 2008*, LNCS 5217. Springer, Berlin, Germany.
- [E05] T. Stützle, M. Birattari, and H. H. Hoos (Eds.) (2007). *Engineering Stochastic Local Search Algorithms: Designing, Implementing and Analyzing Effective Heuristics, International Workshop, SLS 2007*, LNCS 4638. Springer, Berlin, Germany.
- [E04] E. Ridge, T. Stützle, M. Birattari, and H. H. Hoos (Eds.) (2007). *SLS-DS 2007: Doctoral Symposium on Engineering Stochastic Local Search Algorithms*, IRIDIA–Technical Report Series, TR/IRIDIA/2007-018. IRIDIA, Université Libre de Bruxelles, Brussels, Belgium.
- [E03] D. Thierens, H.-G. Beyer, M. Birattari, J. Bongard, J. Branke, J.A. Clark, D. Cliff, C. B. Congdon, K. Deb, B. Doerr, T. Kovacs, S. Kumar, J.F. Miller, J. Moore, F. Neumann, M. Pelikan, R. Poli, K. Sastry, K.O. Stanley, T. Stützle, R.A. Watson, and I. Wegener (Eds.) (2007). *GECCO 2007: Genetic and Evolutionary Computation Conference*. ACM, New York, NY, USA.

[E02] M. Dorigo, L. M. Gambardella, M. Birattari, A. Martinoli, R. Poli, and T. Stützle (Eds.) (2006). *Ant Colony Optimization and Swarm Intelligence, 5th International Workshop, ANTS 2006*, LNCS 4150. Springer, Berlin, Germany.

[E01] M. Dorigo, M. Birattari, C. Blum, L. M. Gambardella, F. Mondada, and T. Stützle (Eds.) (2004). *Ant Colony Optimization and Swarm Intelligence, 4th International Workshop, ANTS 2004*, LNCS 3172. Springer, Berlin, Germany.

---

THESES [T03] M. Birattari (2004). The Problem of Tuning Metaheuristics as Seen from a Machine Learning Perspective. Ph.D. Thesis, Université Libre de Bruxelles. Belgium.

[T02] M. Birattari (2001). On the Formal Foundation of Ant Programming. DEA Thesis, Université Libre de Bruxelles. Belgium.

[T01] M. Birattari (1997). Modelli Locali per l'Apprendimento: Dall'approccio neuro-fuzzy al lazy learning. Tesi di Laurea, Politecnico di Milano. Italy.

---

BOOK [C17] M. Birattari, A. Ligot, and G. Francesca (2021). AutoMoDe: a modular approach to the automatic off-line design and fine-tuning of control software for robot swarms. In N. Pillay and R. Qu (Eds.) *Automated Design of Machine Learning and Search Algorithms*, pp. 73–90. Springer Nature, Cham, Switzerland. In press.

CHAPTERS AND [C16] G. Spaey, M. Kegeleirs, D. Garzón Ramos, and M. Birattari (2020). Evaluation of alternative exploration schemes in the automatic modular design of robot swarms. In B. Bogaerts et al. (Eds.) *Artificial Intelligence and Machine Learning*, CCIS 1196, pp. 18–33. Springer, Cham, Switzerland.

ARTICLES IN [C15] J. Kuckling, K. Ubeda Arriaza, and M. Birattari(2020). AutoMoDe-IcePop: Automatic modular design of control software for robot swarms using simulated annealing. In B. Bogaerts et al. (Eds.) *Artificial Intelligence and Machine Learning*, CCIS 1196, pp. 3–17. Springer, Cham, Switzerland.

POST- [C14] A. Roli, A. Ligot, and M. Birattari (2018). Complexity measures in automatic design of robot swarms: an exploratory study. In M. Perillo et al. (Eds.) *Artificial Life and Evolutionary Computation*, CCIS 860, pp. 243–256. Springer, Cham, Switzerland.

PROCEEDINGS [C13] L. Garattoni and M. Birattari (2016). Swarm robotics. In J.G. Webster (Ed.) *Wiley Encyclopedia of Electrical and Electronics Engineering*. John Wiley & Sons, Hoboken, NJ.

OF [C12] C. Piscopo and M. Birattari (2013). Invention Versus Discovery. In E.G. Carayannis (Ed.) *Encyclopedia of Creativity, Invention, Innovation, and Entrepreneurship*, pp. 1139–1146. Springer, Berlin, Germany.

CONFERENCES [C11] E. Ferrante, M. Brambilla, M. Birattari, and M. Dorigo (2013). Socially-mediated negotiation for obstacle avoidance in collective transport. In A. Martinoli, F. Mondada, N. Correll, and G. Mermoud (Eds.) *Distributed Autonomous Robotic Systems*, STAR 83, pp. 571-583. Springer, Berlin, Germany.

[C10] T. Stützle, M. López-Ibañez, P. Pellegrini, M. Maur, M. Montes de Oca, M. Birattari, and M. Dorigo (2012). Parameter adaptation in ant colony optimization. In Y. Hamadi, E. Monfroy, and F. Saubion (Eds.) *Autonomous Search*, pp. 191–215. Springer, Berlin, Germany.

[C09] P. Pellegrini and M. Birattari (2011). Out-of-the-box and custom implementation of metaheuristics. A case study: The vehicle routing problem with stochastic demand. In M. Köppen et al. (Eds.) *Intelligent Computational Optimization in Engineering*, SCI 366, pp. 273–295, Springer, Berlin, Germany.

[C08] G. Pini, A. Brutschy, M. Birattari, and M. Dorigo (2011). Task partitioning in swarms of robots: Reducing performance losses due to interference at shared resources. In J.A. Cetto, J. Filipe, and J.-L. Ferrier (Eds.) *Informatics in Control Automation and Robotics*, LNEE 85, pp. 217–228. Springer, Berlin, Germany.

[C07] M. Dorigo, M. Birattari, and T. Stützle (2010). Metaheuristics. In C. Sammut and G. Webb (Eds.) *Encyclopedia of Machine Learning*, pp. 662. Springer, Berlin, Germany.

- [C06] M. Dorigo and M. Birattari (2010). Ant Colony Optimization. In C. Sammut and G. Webb (Eds.) *Encyclopedia of Machine Learning*, pp. 37–40. Springer, Berlin, Germany.
- [C05] M. Birattari, Z. Yuan, P. Balaprakash, and T. Stützle (2010). F-race and iterated F-race: An overview. In T. Bartz-Beielstein, M. Chiarandini, L. Paquete, and M. Preuss (Eds.) *Experimental Methods for the Analysis of Optimization Algorithms*, pp. 311–336. Springer, Berlin, Germany.
- [C04] P. Balaprakash, M. Birattari, and T. Stützle (2008). Engineering stochastic local search algorithms: A case study in estimation-based local search for the probabilistic travelling salesman problem. In C. Cotta and J. van Hemert (Eds.) *Recent Advances in Evolutionary Computation for Combinatorial Optimization*, Studies in Computational Intelligence 153, pp. 53–66. Springer, Berlin, Germany.
- [C03] M. Birattari, P. Balaprakash, and M. Dorigo (2006). The ACO/F-RACE algorithm for combinatorial optimization under uncertainty. In K. F. Doerner, M. Gendreau, P. Greistorfer, W. J. Gutjahr, R. F. Hartl, and M. Reimann (Eds.) *Metaheuristics - Progress in Complex Systems Optimization*, pp. 189–203. Operations Research/Computer Science Interfaces Series, Springer, Berlin, Germany.
- [C02] O. Rossi-Doria, M. Sampels, M. Birattari, M. Chiarandini, M. Dorigo, L. M. Gambardella, J. Knowles, M. Manfrin, M. Mastrolilli, B. Paechter, L. Paquete, and T. Stützle (2003). A comparison of the performance of different metaheuristics on the timetabling problem. In E. Burke and P. D. Causmaecker (Eds.) *Practice and Theory of Automated Timetabling IV. 4th International Conference, PATAT 2002*, LNCS 2740, pp. 329–351. Springer, Berlin, Germany.
- [C01] G. Bontempi, M. Birattari, and H. Bersini (2001). Lazy learning: A local method for supervised learning, in L. C. Jain and J. Kacprzyk (Eds.) *New Learning Paradigms in Soft Computing*, pp. 97–137. Springer, Heidelberg, Germany.

---

ARTICLES IN  
REFEREED  
CONFERENCE  
PROCEEDINGS

- [P89] J. Kuckling, V. van Pelt, and M. Birattari (2021). Automatic modular design of behavior trees for robot swarms with communication capabilities. In P. Castillo and J. Jiménez-Laredo (Eds.) *Applications of Evolutionary Computation: 24rd European Conference, EvoApplications 2021*. LNCS. Springer International Publishing, Cham, Switzerland.
- [P88] A. Ligot, K. Hasselmann and M. Birattari (2020). AutoMoDe-Arlequin: neural networks as behavioral modules for the automatic design of probabilistic finite state machines. In M. Dorigo et al. (Eds.) *Swarm Intelligence, 12th International Conference, ANTS 2020*. LNCS 12421, pp. 271–281. Springer International Publishing, Cham, Switzerland.
- [P87] J. Kuckling, K. Ubeda Arriaza, and M. Birattari (2019). Simulated annealing as an optimization algorithm in the automatic modular design of control software for robot swarms. In K. Beuls et al. (Eds.) *BNAIC/BENELEARN 2019: Proceedings of the 31st Benelux Conference on Artificial Intelligence and the 28th Belgian Dutch Conference on Machine Learning*. CEUR Workshop Proceedings, vol. 2491, abstract58, 2 pages. Aachen, Germany. **Best Paper Award**.
- [P86] G. Spaey, M. Kegeleirs, D. Garzón Ramos, M. Birattari (2019) Comparison of different exploration schemes in the automatic modular design of robot swarms. In K. Beuls et al. (Eds.) *BNAIC/BENELEARN 2019: Proceedings of the 31st Benelux Conference on Artificial Intelligence and the 28th Belgian Dutch Conference on Machine Learning*. CEUR Workshop Proceedings, vol. 2491, abstract55, 2 pages. Aachen, Germany.
- [P85] M. Kegeleirs, D. Garzón Ramos, and M. Birattari (2019). Random walk exploration for swarm mapping. In K. Althoefer et al. (Eds.) *Towards Autonomous Robotic Systems, TAROS 2019*. LNAI 11650, pp. 211–222. Springer International Publishing, Cham, Switzerland.
- [P84] A. Ligot and M. Birattari (2018). On mimicking the effects of the reality gap with simulation-only experiments. In M. Dorigo et al. (Eds.) *Swarm Intelligence, 11th International Conference, ANTS 2018*. LNCS 11172, pp. 109–122. Springer International Publishing, Cham, Switzerland.

- [P83] J. Kuckling and A. Ligot and D. Bozhinoski and M. Birattari (2018). Behavior trees as a control architecture in the automatic modular design of robot swarms. In M. Dorigo et al. (Eds.) *Swarm Intelligence, 11th International Conference, ANTS 2018*. LNCS 11172, pp. 30–43. Springer International Publishing, Cham, Switzerland.
- [P82] K. Hasselmann and F. Robert and M. Birattari (2018). Automatic design of communication-based behaviors for robot swarms. In M. Dorigo et al. (Eds.) *Swarm Intelligence, 11th International Conference, ANTS 2018*. LNCS 11172, pp. 16–29 Springer International Publishing, Cham, Switzerland.
- [P81] D. Bozhinoski and M. Birattari (2018). Designing control software for robot swarms: Software engineering for the development of automatic design methods. In F. Ciccozzi et al. (Eds.) *ACM/IEEE 1st International Workshop on Robotics Software Engineering, RoSE*, pp. 33–35. ACM, New York.
- [P80] M. Birattari, B. Delhaise, G. Francesca, and Y. Kerdoncuff (2016). Observing the effects of overdesign in the automatic design of control software for robot swarms. In M. Dorigo et al. (Eds.) *Swarm Intelligence, 10th International Conference, ANTS 2016*. LNCS 9882, pp. 149–160. Springer International Publishing, Cham, Switzerland.
- [P79] A. Roli, M. Villani, R. Serra, S. Benedettini, C. Pinciroli, and M. Birattari (2015). Dynamical properties of artificially evolved Boolean network robots. In M. Gavanelli, F. Riguzzi, and E. Lamma (Eds.) *AI\*IA 2015: Advances in Artificial Intelligence*. LNAI 9336, pp. 45–57. Springer, Berlin, Germany.
- [P78] A. Reina, M. Salvaro, G. Francesca, L. Garattoni, C. Pinciroli, M. Dorigo, and M. Birattari (2015). Augmented reality for robots: virtual sensing technology applied to a swarm of e-pucks. In G. Beltrame et al. (Eds.) *2015 NASA/ESA Conference Adaptive Hardware and Systems*. Paper ID sB\_p3. IEEE Computer Society, Los Alamitos, CA, USA
- [P77] G. Francesca, M. Brambilla, A. Brutschy, L. Garattoni, R. Miletitch, G. Podevijn, A. Reina, T. Soleymani, M. Salvaro, C. Pinciroli, V. Trianni, and M. Birattari (2014). An experiment in automatic design of robot swarms: AutoMoDe-Vanilla, EvoStick, and Human Experts. In Dorigo et al. (Eds.) *Swarm Intelligence, 9th International Conference, ANTS 2014*, LNCS 8667, pp. 25–37. Springer, Berlin, Germany.
- [P76] M. Castillo-Cagigal, A. Brutschy, A. Gutiérrez, and M. Birattari (2014). Temporal task allocation in periodic environments: An approach based on synchronization. In Dorigo et al. (Eds.) *Swarm Intelligence, 9th International Conference, ANTS 2014*, LNCS 8667, pp. 182–193. Springer, Berlin, Germany.
- [P75] Y. Khaluf, M. Birattari, and H. Hamann (2014). A swarm robotics approach to task allocation under soft deadlines and negligible switching costs. In A.P. Del Pobil et al. (Eds.) *From Animals to Animats 13: 13th International Conference on Simulation of Adaptive Behavior, SAB 2014*, LNAI 8575, pp. 270–279. Springer. Berlin, Germany.
- [P74] A. Roli, M. Villani, R. Serra, L. Garattoni, C. Pinciroli, and M. Birattari (2013). Identification of dynamical structures in artificial brains: An analysis of Boolean network controlled robots. In M. Baldoni et al. (Eds.) *AI\*IA 2013: Advances in Artificial Intelligence*, LNAI 8249, pp. 324–335. Springer, Berlin, Germany.
- [P73] Y. Khaluf, M. Birattari, F.-J. Rammig (2013). Probabilistic analysis of long-term swarm performance under spatial interferences. In A.-H. Dediu, et al. (Eds.) *Theory and Practice of Natural Computing, TPNC 2013*, LNCS 8273, pp. 121–132. Springer, Berlin, Germany.
- [P72] L. Garattoni, A. Roli, M. Amaducci, C. Pinciroli and M. Birattari. (2013) Boolean network robotics as an intermediate step in the synthesis of finite state machines for robot control. In P. Liò, O. Miglino, G. Nicosia, S. Nolfi and M. Pavone (Eds.) *Advances in Artificial Life, ECAL 2013: Proceedings of the Twelfth European Conference on the Synthesis and Simulation of Living Systems*, pp. 783–790. MIT press, Cambridge, MA, USA.
- [P71] Z. Yuan, T. Stützle, M.A. Montes De Oca, H.C. Lau, M. Birattari (2013). An analysis of post-selection in automatic configuration. In E. Alba et al. (Eds.) *GECCO 2013: Proceedings of the 2013 Genetic and Evolutionary Computation Conference*, pp. 1557–1564. ACM, New York, NY, USA.



- [P70] F. Mascia, M. Birattari, and T. Stützle (2013). Tuning algorithms for tackling large instances: An experimental protocol. In G. Nicosia and P. Pardalos (Eds.) *Learning and Intelligent Optimization, 7th International Conference, Lion 7*, LNCS 7997, pp. 410-422. Springer, Berlin, Germany.
- [P69] E. Gjondrekaj, M. Loreti, R. Pugliese, F. Tiezzi, C. Pinciroli, M. Brambilla, M. Birattari, and Dorigo (2012). Towards a formal verification methodology for collective robotic systems. In T. Aoki and K. Taguchi (Eds.) *Formal Methods and Software Engineering 14th International Conference on Formal Engineering Methods, ICFEM 2012*, LNCS 7635, pp. 54-70. Springer, Berlin, Germany.
- [P68] A. Brutschy, A. Scheidler, E. Ferrante, M. Dorigo, and M. Birattari (2012). Can ants inspire robots? Self-organized decision making in robotic swarms. *IEEE/RSJ International Conference on Intelligent Robots and Systems, IROS 2012*, pp. 4272-4273. IEEE Press, Piscataway, NJ.
- [P67] G. Pini, A. Brutschy, G. Francesca, M. Dorigo, and M. Birattari (2012). Multi-armed bandit formulation of the task partitioning problem in swarm robotics. In M. Dorigo, M. Birattari, C. Blum, A. L. Christensem, A. P. Engelbrecht, R. Groß, and T. Stützle (Eds.) *Swarm Intelligence, 8th International Conference, ANTS 2012*, LNCS 7461, pp. 109-120. Springer, Berlin, Germany.
- [P66] M. Massink, M. Brambilla, D. Latella, M. Dorigo, and M. Birattari (2012). Analysing robot swarm decision-making with Bio-PEPA. In M. Dorigo, M. Birattari, C. Blum, A. L. Christensem, A. P. Engelbrecht, R. Groß, and T. Stützle (Eds.) *Swarm Intelligence, 8th International Conference, ANTS 2012*, LNCS 7461, pp. 25-36. Springer, Berlin, Germany.
- [P65] G. Valentini, M. Birattari, and M. Dorigo (2012). Majority rule with differential latency: An absorbing Markov chain to model consensus. In T. Gilbert, M. Kirkilionis, and G. Nicolis (Eds.) *Proceedings of the 12th European Conference on Complex Systems, ECCS 2012*, Springer Proceedings in Complexity, pp. 651-658. Springer, Berlin, Germany.
- [P64] E. Ferrante, W. Sun, A.E. Turgut, M. Dorigo, M. Birattari, and T. Wenseleers (2012). Self-organized flocking with conflicting goal directions. In T. Gilbert, M. Kirkilionis, and G. Nicolis (Eds.) *Proceedings of the 12th European Conference on Complex Systems, ECCS 2012*, Springer Proceedings in Complexity, pp. 607-614. Springer, Berlin, Germany.
- [P63] A. Roli, M. Amaducci, L. Garattoni, C. Pinciroli, and M. Birattari (2012). State space properties of Boolean networks trained for sequence tasks. In T. Gilbert, M. Kirkilionis, and G. Nicolis (Eds.) *Proceedings of the 12th European Conference on Complex Systems, ECCS 2012*, Springer Proceedings in Complexity, pp. 235-240. Springer, Berlin, Germany.
- [P62] G. Francesca, M. Brambilla, V. Trianni, M. Dorigo, and M. Birattari (2012). Analysing an evolved robotic behaviour using a biological model of collegial decision making. In T. Ziemke, C. Balkenius, and J. Hallam (Eds.) *From Animals to Animats 12: 12th International Conference on Simulation of Adaptive Behavior, SAB 2012*, LNAI 7426, pp. 381-390. Springer, Berlin, Germany.
- [P61] E. Ferrante, A.E. Turgut, C. Huepe, M. Birattari, M. Dorigo and T. Wenseleers (2012). Explicit and implicit directional information transfer in collective motion. In C. Adami, D.M. Bryson, C. Ofria, and R.T. Pennock (Eds.) *Artificial Life 13: Proceedings of the 13th International Conference on the Synthesis and Simulation of Living Systems, Alife 13*, pp. 551-552. MIT Press, Cambridge, MA, USA.
- [P60] M. Brambilla, C. Pinciroli, M. Birattari, and M. Dorigo (2012). Property-driven design for swarm robotics. In V. Conitzer, M. Winikoff, L. Padgham, and W. van der Hoek (Eds.) *Proceedings of the 11th International Conference on Autonomous Agents and Multiagent Systems, AAMAS 2012*, pp.139-146. IFAAMAS.
- [P59] A. Brutschy, N.-L. Tran, N. Baiboun, M. Frison, G. Pini, A. Roli, M. Dorigo, and M. Birattari (2011). Costs and benefits of behavioral specialization. In R. Groß, L. Alboul, C. Melhuish, M. Witkowski, T. J. Prescott, and J. Penders (Eds.) *Towards Autonomous Robotic Systems - 12th Annual Conference, TAROS 2011*, LNCS 6856, pp. 90-101. Springer, Berlin, Germany.

- [P58] A. Stranieri, E. Ferrante, A. E. Turgut, V. Trianni, C. Pinciroli, M. Birattari, and M. Dorigo (2011). Self-organized flocking with a heterogeneous mobile robot swarm. In T. Lenaerts, M. Giacobini, H. Bersini, P. Bourguine, M. Dorigo, and R. Doursat (Eds.) *Advances in Artificial Life, ECAL 2011: 11th European Conference on the Synthesis and Simulation of Living Systems*, pp. 789–796. MIT Press, Cambridge, MA, USA.
- [P57] M. Dorigo, M. Birattari, R. O’Grady, L. M. Gambardella, F. Mondada, D. Floreano, S. Nolfi, T. Baaboura, M. Bonani, M. Brambilla, A. Brutschy, D. Burnier, A. Campo, A. Christensen, A. Decugnière, G. Di Caro, F. Ducatelle, E. Ferrante, J. Martinez Gonzales, J. Guzzi, V. Longchamp, S. Magnenat, N. Mathews, M. Montes de Oca, C. Pinciroli, G. Pini, P. Réturnaz, F. Rey, J. Roberts, F. Rochat, V. Sperati, T. Stirling, A. Stranieri, T. Stützle, V. Trianni, E. Tuci, A. E. Turgut, and F. Vaussard (2011). Swarmanoid, the movie. In D. Aha and A. Jhala (Eds.) *AAAI-11, AI Video Competition*, AAAI Press. Winner of the Best Video award.
- [P56] A. Roli, M. Manfroni, C. Pinciroli, and M. Birattari (2011). On the design of Boolean network robots. In C. Di Chio, S. Cagnoni, C. Cotta, M. Ebner, A. Ekart, A.I. Esparcia-Alcázar, J.J. Merelo, F. Neri, M. Preuss, H. Richter, J. Togelius, and G.N. Yannakakis (Eds.) *Applications of Evolutionary Computation, EvoApplications 2011: EvoCOMPLEX, EvoGAMES, EvoIASP, EvoINTELLIGENCE, EvoNUM, and EvoSTOC*, LNCS 6624/5, pp. 43–52. Springer. Berlin, Germany.
- [P55] G. Francesca, P. Pellegrini, T. Stützle, and M. Birattari (2011) Off-line and On-line Tuning: A Study on Operator Selection for a Memetic Algorithm Applied to the QAP. In P. Merz, J.-K. Hao (Eds.) *Evolutionary Computation in Combinatorial Optimization, 11th European Conference, EvoCOP 2011*, LNCS 6622, pp. 203–214. Springer. Berlin, Germany.
- [P54] W. Schäfer, M. Birattari, J. Blömer, M. Dorigo, G. Engels, R. O’Grady, M. Platzner, F. Rammig, W. Reif, and A. Trächtler (2010). Engineering Self-Coordinating Software Intensive Systems. In G.-C. Roman and K. Sullivan (Eds.) *FoSER’10: Proceedings of the FSE/SDP workshop on future of software engineering research*, pp. 321–324, ACM Press. New York, NY, USA.
- [P53] M.A. Montes de Oca, T. Stützle, M. Birattari, and M. Dorigo (2010). Incremental social learning applied to a decentralized decision-making mechanism: collective learning made faster. In I. Gupta, S. Hassas, and J. Rolia (Eds.) *Proceedings of the Fourth IEEE Conference on Self-Adaptive and Self-Organizing Systems, SASO 2010*, pp. 243–252, IEEE Computer Society Press. Los Alamitos, CA, USA.
- [P52] E. Ferrante, A. E. Turgut, N. Mathews, M. Birattari, and M. Dorigo (2010). Flocking in stationary and non-stationary environments: A novel communication strategy for heading alignment. In R. Schaefer, C. Cotta, J. Kołodziej, and G. Rudolph (Eds.) *Parallel Problem Solving from Nature, PPSN XI: 11th International Conference*, LNCS 6239, pp. 331–340, Springer. Berlin, Germany.
- [P51] Z. Yuan, M. A. Montes de Oca, M. Birattari, and T. Stützle (2010). Modern continuous optimization algorithms for tuning real and integer algorithm parameters. In M. Dorigo, M. Birattari, G. A. Di Caro, R. Doursat, A. P. Engelbrecht, D. Floreano, L. M. Gambardella, R. Groß, E. Sahin, H. Sayama, and T. Stützle (Eds.) *Swarm Intelligence, 7th International Conference, ANTS 2010*, LNCS 6234, pp. 203–214, Springer. Berlin, Germany.
- [P50] P. Pellegrini and T. Stützle, and M. Birattari (2010). Off-line vs. on-line tuning: A study on MAX-MIN ant system for the TSP. In M. Dorigo, M. Birattari, G. A. Di Caro, R. Doursat, A. P. Engelbrecht, D. Floreano, L. M. Gambardella, R. Groß, E. Sahin, H. Sayama, and T. Stützle (Eds.) *Swarm Intelligence, 7th International Conference, ANTS 2010*, LNCS 6234, pp. 239–250, Springer. Berlin, Germany.
- [P49] M. A. Montes de Oca, E. Ferrante, N. Mathews, M. Birattari, and M. Dorigo (2010). Opinion dynamics for decentralized decision-making in a robot swarm. In M. Dorigo, M. Birattari, G. A. Di Caro, R. Doursat, A. P. Engelbrecht, D. Floreano, L. M. Gambardella, R. Groß, E. Sahin, H. Sayama, and T. Stützle (Eds.) *Swarm Intelligence, 7th International Conference, ANTS 2010*, LNCS 6234, pp. 251–262, Springer. Berlin, Germany.
- [P48] M. Frison, N.-L. Tran, N. Baiboun, A. Brutschy, G. Pini, A. Roli, M. Dorigo, and M. Birattari (2010). Adaptive task partitioning in swarms of homogeneous robots. In M.

- Dorigo, M. Birattari, G. A. Di Caro, R. Doursat, A. P. Engelbrecht, D. Floreano, L. M. Gambardella, R. Groß, E. Sahin, H. Sayama, and T. Stützle (Eds.) *Swarm Intelligence, 7th International Conference, ANTS 2010*, LNCS 6234, pp. 287–298, Springer. Berlin, Germany.
- [P47] E. Ferrante, M. Brambilla, M. Birattari, and M. Dorigo (2010). Look out!: Socially-mediated obstacle avoidance in collective transport. In M. Dorigo, M. Birattari, G. A. Di Caro, R. Doursat, A. P. Engelbrecht, D. Floreano, L. M. Gambardella, R. Groß, E. Sahin, H. Sayama, and T. Stützle (Eds.) *Swarm Intelligence, 7th International Conference, ANTS 2010*, LNCS 6234, pp. 572–573, Springer. Berlin, Germany.
- [P46] Z. Yuan, T. Stützle, and M. Birattari (2010). MADS/F-Race: Mesh adaptive direct search meets F-Race. In N. García-Pedrajas, H. Francisco, C. Fyfe, J.M. Benitez, and M. Ali (Eds.) *Trends in Applied Intelligent Systems, 23rd International Conference on Industrial Engineering and Other Applications of Applied Intelligent Systems, IEA/AIE 2010*, LNAI 6096, pp. 41–50. Springer, Berlin, Germany.
- [P45] M. Gagliolo, C. Legrand, and M. Birattari (2009). Mixed-effects modeling of optimisation algorithm performance. In T. Stützle, M. Birattari, and H. H. Hoos (Eds.) *Engineering Stochastic Local Search Algorithms, 2nd International Workshop, SLS 2009*, LNCS 5752, pp. 150–154. Springer. Berlin, Germany.
- [P44] M. Birattari, Z. Yuan, P. Balaprakash, T. Stützle (2009). Automated algorithm tuning using F-races: Recent developments. In S. Voss and M. Caserta (Eds.) *MIC 2009: The 8th Metaheuristics International Conference*, proceedings on CD-ROM, 10 pages.
- [P43] G. Pini, A. Brutschy, M. Birattari, and M. Dorigo (2009). Interference reduction through task partitioning in a robotic swarm. In J. Filipe, J. A. Cetto, and J.-L. Ferrier (Eds.) *ICINCO 2009: 6th International Conference on Informatics in Control, Automation and Robotics*, proceedings on CD-ROM, paper ID 156, 8 pages. INSTICC Press. Setúbal, Portugal.
- [P42] M. Brambilla, C. Pinciroli, M. Birattari, and M. Dorigo (2009). A reliable distributed algorithm for group size estimation with minimal communication requirements. In E. Prassler *et al.* (Eds.) *ICAR 2009: 14th International Conference on Advanced Robotics*, proceedings on CD-ROM, paper ID 137, 6 pages.
- [P41] A. Decugnière, B. Poulain, A. Campo, C. Pinciroli, B. Tartini, M. Osée, M. Dorigo, and M. Birattari (2008). Enhancing the cooperative transport of multiple objects. In M. Dorigo, M. Birattari, C. Blum, M. Clerc, T. Stützle, and A.F.T. Winfield (Eds.) *Ant Colony Optimization and Swarm Intelligence, 6th International Conference, ANTS 2008*, LNCS 5217, pp. 307–314, Springer. Berlin, Germany.
- [P40] C. Pinciroli, M. Birattari, E. Tuci, M. Dorigo, M. del Rey Zapatero, T. Vinko, and D. Izzo (2008). Lattice formation in space for a swarm of pico satellites. In M. Dorigo, M. Birattari, C. Blum, M. Clerc, T. Stützle, and A.F.T. Winfield (Eds.) *Ant Colony Optimization and Swarm Intelligence, 6th International Conference, ANTS 2008*, LNCS 5217, pp. 347–354, Springer. Berlin, Germany.
- [P39] C. Pinciroli, M. Birattari, E. Tuci, M. Dorigo, M. del Rey Zapatero, T. Vinko, and D. Izzo (2008). Self-organizing and scalable shape formation for a swarm of pico satellites. In D. Keymeulen, T. Arslan, M. Suess, A. Stoica, A.T. Erdogan, and D. Merodio (Eds.) *2008 NASA/ESA Conference on Adaptive Hardware and Systems*, pp. 57–61. IEEE Computer Society, Los Alamitos, CA, USA.
- [P38] R. Lenne, C. Solnon, T. Stützle, E. Tannier, and M. Birattari (2008). Reactive stochastic local search algorithms for the genomic median problem. In J. van Hemert and C. Cotta (Eds.) *Evolutionary Computation in Combinatorial Optimization, 8th European Conference, EvoCOP 2008*, LNCS 4972, pp. 266–276, Springer. Berlin, Germany.
- [P37] P. Balaprakash, M. Birattari, T. Stützle (2007). Improvement strategies for the F-Race algorithm: Sampling design and iterative refinement. In T. Bartz-Beielstein, M. J. Blesa Aguilera, C. Blum, B. Naujoks, A. Roli, G. Rudolph, and M. Sampels (Eds.) *Hybrid Metaheuristics, 4th International Workshop, HM 2007*, LNCS 4771, pp. 108–122. Springer. Berlin, Germany.

- [P36] A. L. Christensen, R. O’Grady, M. Birattari, and M. Dorigo (2007). Exogenous fault detection in a collective robotic task. In F. Almeida e Costa, L. Mateus, E. Costa, I. Harvey, and A. Coutinho (Eds.) *Advances in Artificial Life, 9th European Conference, ECAL 2007*, LNCS 4648, pp. 555–564. Springer. Berlin, Germany.
- [P35] P. Pellegrini and M. Birattari (2007). Implementation effort and performance: A comparison of custom and out-of-the-box metaheuristics on the vehicle routing problem with stochastic demand. In T. Stützle, M. Birattari, and H. H. Hoos (Eds.) *Engineering Stochastic Local Search Algorithms: Designing, Implementing and Analyzing Effective Heuristics, International Workshop, SLS 2007*, LNCS 4638, pp. 31–45. Springer. Berlin, Germany.
- [P34] A. L. Christensen, R. O’Grady, M. Birattari, and M. Dorigo (2007). Automatic synthesis of fault detection modules for mobile robots. In T. Arslan *et al.* (Eds.) *2007 NASA/ESA Conference on Adaptive Hardware and Systems*, pp. 693–700, IEEE Computer Society, Los Alamitos, CA, USA.
- [P33] M. Birattari, P. Balaprakash, T. Stützle, and M. Dorigo (2007). Estimation-based local search for the probabilistic traveling salesman problem. In M. Gendreau, T. G. Crainic, L.-M. Rousseau, and P. Soriano (Eds.) *MIC 2007: The 7th Metaheuristics International Conference*, p. 141, CIRRELT, Montreal, Canada.
- [P32] A. Campo, S. Nouyan, M. Birattari, R. Groß, and M. Dorigo (2006). Enhancing cooperative transport using negotiation of goal direction. In P.-Y. Schobbens, W. Vanhoof, and G. Schwanen (Eds.) *BNAIC 2006: 18th Belgium - Netherlands Conference on Artificial Intelligence*, pp. 365–366, University of Namur, Namur, Belgium.
- [P31] M. Manfrin, M. Birattari, T. Stützle, and M. Dorigo (2006). Parallel Multicolony ACO Algorithm with Exchange of Solutions. In P.-Y. Schobbens, W. Vanhoof, and G. Schwanen (Eds.) *BNAIC 2006: 18th Belgium - Netherlands Conference on Artificial Intelligence*, pp. 409–410, University of Namur, Namur, Belgium.
- [P30] M. Birattari, P. Pellegrini, and M. Dorigo (2006). On the invariance of ant system. In M. Dorigo, L. M. Gambardella, M. Birattari, A. Martinoli, R. Poli, and T. Stützle (Eds.), *Ant Colony Optimization and Swarm Intelligence, 5th International Workshop, ANTS 2006*, LNCS 4150, pp. 215–223. Springer. Berlin, Germany.
- [P29] A. Campo, S. Nouyan, M. Birattari, R. Groß, and M. Dorigo (2006). Negotiation of goal direction for cooperative transport. In M. Dorigo, L. M. Gambardella, M. Birattari, A. Martinoli, R. Poli, and T. Stützle (Eds.), *Ant Colony Optimization and Swarm Intelligence, 5th International Workshop, ANTS 2006*, LNCS 4150, pp. 191–202. Springer. Berlin, Germany.
- [P28] M. A. Montes de Oca, T. Stützle, M. Birattari, and M. Dorigo (2006). A comparison of particle swarm optimization algorithms based on run-length distributions. In M. Dorigo, L. M. Gambardella, M. Birattari, A. Martinoli, R. Poli, and T. Stützle (Eds.), *Ant Colony Optimization and Swarm Intelligence, 5th International Workshop, ANTS 2006*, LNCS 4150, pp. 1–12. Springer. Berlin, Germany.
- [P27] P. Balaprakash, M. Birattari, T. Stützle, and M. Dorigo (2006). Incremental local search in ant colony optimization: Why it fails for the quadratic assignment problem. In M. Dorigo, L. M. Gambardella, M. Birattari, A. Martinoli, R. Poli, and T. Stützle (Eds.), *Ant Colony Optimization and Swarm Intelligence, 5th International Workshop, ANTS 2006*, LNCS 4150, pp. 156–166. Springer. Berlin, Germany.
- [P26] M. Manfrin, M. Birattari, T. Stützle, and M. Dorigo (2006). Parallel ant colony optimization for the traveling salesman problem. In M. Dorigo, L. M. Gambardella, M. Birattari, A. Martinoli, R. Poli, and T. Stützle (Eds.), *Ant Colony Optimization and Swarm Intelligence, 5th International Workshop, ANTS 2006*, LNCS 4150, pp. 224–234. Springer. Berlin, Germany.
- [P25] J. A. Sabino, T. Stützle, M. Birattari, and J. E. Leal (2006). Ant colony optimization applied to switch engine scheduling in a railroad yard. In M. Dorigo, L. M. Gambardella, M. Birattari, A. Martinoli, R. Poli, and T. Stützle (Eds.), *Ant Colony Optimization and Swarm Intelligence, 5th International Workshop, ANTS 2006*, LNCS 4150, pp. 502–503. Springer. Berlin, Germany.

- [P24] M. Birattari, P. Balaprakash, and M. Dorigo (2005). ACO/F-Race: Ant colony optimization and racing techniques for combinatorial optimization under uncertainty. In K. F. Doerner, M. Gendreau, P. Greistorfer, W. J. Gutjahr, R. F. Hartl, and M. Reimann (Eds.) *MIC 2005: The 6th Metaheuristics International Conference*, pp. 107–112. University of Vienna, Department of Business Administration, Vienna, Austria.
- [P23] G. Bontempi, M. Birattari, and P. E. Meyer (2005). Combining lazy learning, racing and subsampling for effective feature selection. In B. Ribeiro, R. F. Albrecht, A. Dobnikar, D. W. Pearson, and N. C. Steele (Eds.), *ICANNGA05: 7th International Conference on Adaptive and Natural Computing Algorithms*, pp. 393–396. Springer, Vienna, Austria.
- [P22] L. Bianchi, M. Birattari, M. Chiarandini, M. Manfrin, M. Mastrolilli, L. Paquete, O. Rossi-Doria, and T. Schiavinotto (2004). Metaheuristics for the Vehicle Routing Problem with Stochastic Demands. In X. Yao, E. Burke, J. A. Lozano, J. Smith, J. J. Merelo-Guervós, J. A. Bullinaria, J. Rowe, P. Tino, A. Kabán, and H.-P. Schwefel (Eds.), *Parallel Problem Solving from Nature, 8th International Conference, PPSN VIII*, LNCS 3242, pp. 450–460. Springer, Berlin, Germany.
- [P21] C. Piscopo and M. Birattari (2002). Invention vs. Discovery. A critical discussion. In S. Lange, K. Satoh, and C. H. Smith (Eds.), *Discovery Science. 5th International Conference, DS 2002*, LNCS 2534, pp. 457–462. Springer, Berlin, Germany.
- [P20] M. Birattari, G. Di Caro, and M. Dorigo (2002). Toward the formal foundation of Ant Programming. In M. Dorigo, G. Di Caro, and M. Sampels (Eds.), *Ant Algorithms, 3rd International workshop, ANTS 2002*. LNCS 2463, pp. 188–201. Springer, Berlin, Germany.
- [P19] O. Rossi-Doria, M. Sampels, M. Birattari, M. Chiarandini, M. Dorigo, L. M. Gambardella, J. Knowles, M. Manfrin, M. Mastrolilli, B. Paechter, L. Paquete, and T. Stützle (2002). A comparison of the performance of different metaheuristics on the timetabling problem. In E. Burke and P. De Causmaecker (Eds.), *PATAT 2002: Proceedings of the Fourth International Conference on the Practice and Theory of Automated Timetabling*, pp. 115–119. KaHo Sint-Lieven, Department of Industrial Engineering, Gent, Belgium.
- [P18] M. Birattari, T. Stützle, L. Paquete, and K. Varrentrapp (2002). A Racing Algorithm for Configuring Metaheuristics. In W. B. Langdon, E. Cantú-Paz, K. Mathias, R. Roy, D. Davis, R. Poli, K. Balakrishnan, V. Honavar, G. Rudolph, J. Wegener, L. Bull, M. A. Potter, A. C. Schultz, J. F. Miller, E. Burke, and N. Jonoska (Eds.), *GECCO 2002: Proceedings of the Genetic and Evolutionary Computation Conference*. pp. 11–18. Morgan Kaufmann, San Francisco, CA, USA.
- [P17] M. Dorigo, M. Zlochin, N. Meuleau, and M. Birattari (2002). Updating ACO pheromones using Stochastic Gradient Ascent and Cross-Entropy methods. In S. Cagnoni, J. Gottlieb, E. Hart, M. Middendorf, and R. Raidl (Eds.) *Applications of Evolutionary Computing. EvoWorkshops 2002: EvoCOP, EvoSTIM, EvoPLAN*, LNCS 2279, pp. 21–30. Springer, Berlin, Germany.
- [P16] E. Bertolissi, M. Birattari, G. Bontempi, A. Duchâteau, and H. Bersini (2000). Data-Driven Techniques for Divide and Conquer Adaptive Control. In V. Zackharov (Ed.) *Control Applications of Optimization. Proceedings of the 11th IFAC International Workshop, CAO 2000*, pp 70–75. Pergamon Press/Elsevier, Oxford, United Kingdom.
- [P15] E. Bertolissi, M. Birattari, G. Bontempi, A. Duchâteau, and H. Bersini (2000). Multiple Models for Adaptive Control: The Lazy and the Fuzzy Approach. In R. Smith (Ed.) *System Identification. A Proceedings volume from the 12th IFAC Symposium on System Identification. SYSID 2000*, Pergamon Press/Elsevier, Oxford, United Kingdom.
- [P14] G. Bontempi and M. Birattari (2000). A multi-step-ahead prediction method based on local dynamic properties. In M. Verleysen (Ed.) *ESANN 2000: European Symposium on Artificial Neural Networks*, pp. 311–316, D-Facto Publications, Brussels, Belgium.
- [P13] G. Bontempi, E. Bertolissi, and M. Birattari (2000). Predicting stock markets in boundary conditions with local models. In *CIFER 2000: Proceedings of the IEEE/IAFE/INFORMS Conference on Computational Intelligence for Financial Engineering*, pp. 158–161. New York, NY, USA. March 26–28, 2000.

- [P12] E. Bertolissi, M. Birattari, G. Bontempi, A. Duchâteau, and H. Bersini (2000). Lazy Learning vs. Fuzzy Systems: Two multiple-model approaches for adaptive control. In *ACIDCA 2000: International Conference on Artificial and Computational Intelligence for Decision, Control and Automation in Engineering and Industrial Applications*, pp 6–11. Monastir, Tunisia. March 22–24, 2000.
- [P11] G. Bontempi and M. Birattari (1999). A bound on the cross-validation estimate for algorithm assessment. In E. Postma and M. Gyssens (Eds.) *BNAIC'99: Proceedings of the 11th Belgium-Netherlands Conference on Artificial Intelligence*, pp. 115–122. Universiteit Maastricht, Maastricht, The Netherlands.
- [P10] G. Bontempi, M. Birattari, and H. Bersini (1999). Lazy Learners at Work: The Lazy Learning Toolbox. In *EUFIT'99: The 7th European Congress on Intelligent Techniques and Soft Computing*, Aachen, Germany.
- [P09] G. Bontempi, M. Birattari, and H. Bersini (1999). Local learning for iterated time-series prediction. In I. Bradko and S. Dzeroski (Eds.) *ICML'99: International Conference on Machine Learning*, pp. 32–38. Morgan Kaufmann, San Francisco, CA, USA.
- [P08] M. Birattari, G. Bontempi, and H. Bersini (1999). Lazy learning meets the recursive least squares algorithm. In M. S. Kearns, S. A. Solla, and D. A. Cohn (Eds.) *NIPS'98: Advances in Neural Information Processing Systems 11*, pp. 375–381. MIT Press, Cambridge, MA, USA.
- [P07] G. Bontempi, M. Birattari, and H. Bersini (1998). Lazy learning for iterated time-series prediction. In J. A.K. Suykens and J. Vandewalle (Eds.) *International Workshop on Advanced Black-Box Techniques for Nonlinear Modeling*, pp. 62–68. K. U. Leuven, Leuven, Belgium.
- [P06] M. Birattari, G. Bontempi, and H. Bersini (1998). Local learning for data analysis. In F. Verdenius and W. van den Broek (Eds.) *Benelearn'98: Proceedings of the 8th Belgian-Dutch Conference on Machine Learning*, pp. 55–61. ATO-DLO, Wageningen, The Netherlands.
- [P05] G. Bontempi, M. Birattari, and H. Bersini (1998). Local learning for nonlinear control. In H. J.C. Huiberts and H. Nijmeijer (Eds.) *NOLCOS'98: Nonlinear Control Systems Design Symposium*, pp. 360–365. University of Twente, Enschede, The Netherlands.
- [P04] H. Bersini, G. Bontempi, and M. Birattari (1998). Is readability compatible with accuracy? From neuro-fuzzy to lazy learning. In W. Brauer (Ed.) *Fuzzy-Neuro Systems'98. Computational Intelligence: Proceedings of the 5th International Workshop on Fuzzy-Neuro Systems*, pp. 10–25. IOS Press, Amsterdam, The Netherlands.
- [P03] G. Bontempi, M. Birattari, and H. Bersini (1998). Lazy learning for control design. In M. Verleysen (Ed.) *ESANN'98: European Symposium on Artificial Neural Networks*, pp. 73–78, D-Facto Publications, Brussels, Belgium.
- [P02] G. Bontempi, M. Birattari, and H. Bersini (1998). Recursive lazy learning for modeling and control. In C. Nédellec and C. Rouveirol (Eds.) *Machine Learning: ECML'98. 10th European Conference on Machine Learning*, LNCS 1398, pp. 292–303. Springer, Berlin, Germany.
- [P01] H. Bersini, M. Birattari, and G. Bontempi (1998). Adaptive memory based regression methods. In *IJCNN'98: Proceedings of the 1998 IEEE World Congress on Computational Intelligence*, pp. 2102–2106. IEEE Publications, Piscataway, NJ, USA.

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ARTICLES  
PRESENTED AT  
WORKSHOPS  
(NO FORMAL  
PROCEEDINGS  
PUBLISHED)

- [W21] D. Garzón Ramos, D. Bozhinoski, G. Francesca, L. Garattoni, K. Hasselmann, M. Kegeleirs, J. Kuckling, A. Ligot, F. J. Mendiburu, F. Pagnozzi, M. Salman, T. Stützle, and M. Birattari (2021). The automatic off-line design of robot swarms: recent advances and perspectives. In G. De Masi, E. Ferrante, and P. Dario (Eds.) *R2T2: Robotics Research for Tomorrow's Technology*. Technology Innovation Institute, Abu Dhabi, United Arab Emirates.
- [W20] A. Roli, S. Benedettini, M. Birattari, C. Pinciroli, R. Serra, M. Villani (2011). Robustness, evolvability and complexity in Boolean network robots. In S. Thurner and M.

- Szell (Eds.) *Book of Abstracts, ECCS'11 Vienna: European Conference on Complex Systems*, pp. 117–118. Löcker Verlag, Vienna, Austria.
- [W19] M. Birattari, M. Chiarandini, M. Saerens, and T. Stützle (2011). Learning Graphical Models for Algorithm Configuration. In T. Berthold, A.M. Gleixner, S. Heinz, and T. Koch (Eds.) *CPAIOR 2011: 8th International Conference on Integration of Artificial Intelligence and Operations Research techniques in Constraint Programming for Combinatorial Optimization Problems*. Berlin, Germany.
- [W18] E. Ferrante, M. Brambilla, M. Birattari, and M. Dorigo (2011). Socially-mediated negotiation for obstacle avoidance in collective transport. In A. Martinoli and F. Mondada (Eds.) *DARS 2010: 10th International Symposium on Distributed Autonomous Robotic Systems*. Lausanne, Switzerland.
- [W17] P. Pellegrini, T. Stützle, and M. Birattari (2010) On the importance of the initial setting when tuning on-line the parameters of metaheuristics.. In J. P. Paixão et al (Eds.) *EURO 2010: 24th European Conference on Operation Research*. Lisbon, Portugal.
- [W16] M. A. Montes de Oca, E. Ferrante, N. Mathews, M. Birattari, and M. Dorigo (2009) Optimal collective decision-making through social influence and different action execution times. In D. Curran and C. O’Riordan (Eds.) *Organisation, Cooperation and Emergence in Social Learning Agents – ECAL 2009 Workshop*. Budapest, Hungary.
- [W15] Z. Yuan, T. Stützle, and M. Birattari (2009) Combining F-Race and mesh adaptive direct search for automatic algorithm configuration. In F. Hutter and M. A. Montes de Oca (Eds.) *SLS-DS 2009: Doctoral Symposium on Engineering Stochastic Local Search Algorithms*, pp. 21–25. Brussels, Belgium.
- [W14] P. Balaprakash, M. Birattari, T. Stützle, and M. Dorigo (2008) Estimation-based stochastic local search algorithms for the stochastic routing problems. In E.-G. Talbi and K. Mellouli (Eds.) *International Conference on Metaheuristics and Nature Inspired Computing, META’08*. Hammamet, Tunisia.
- [W13] P. Balaprakash, M. Birattari, T. Stützle, and M. Dorigo (2008) Applications of estimation-based SLS algorithms to the stochastic routing problems. In P. Hansen and S. Voss (Eds.) *Metaheuristics 2008, Second International Workshop on Model Based Metaheuristics*. Bertinoro, Italy.
- [W12] P. Balaprakash, M. Birattari, T. Stützle, and M. Dorigo (2007). An experimental study of estimation-based metaheuristics for the probabilistic traveling salesman problem. In V. Maniezzo, R. Battiti, and J.-P. Watson (Eds.) *LION 2007 II: Learning and Intelligent Optimization*. Trento, Italy.
- [W11] R. Lenne, C. Solnon, T. Stützle, E. Tannier, and M. Birattari (2007). Effective stochastic local search algorithms for the genomic median problem. In E. Ridge, T. Stützle, M. Birattari, and H. H. Hoos (Eds.) *SLS-DS 2007: Doctoral Symposium on Engineering Stochastic Local Search Algorithms*, pp. 1–5. Brussels, Belgium.
- [W10] M. Montes de Oca, T. Stützle, M. Birattari, and M. Dorigo (2007). Composing particle swarm optimization algorithms. In E. Ridge, T. Stützle, M. Birattari, and H. H. Hoos (Eds.) *SLS-DS 2007: Doctoral Symposium on Engineering Stochastic Local Search Algorithms*, pp. 6–10. Brussels, Belgium.
- [W09] M. S. Bin Hussin, T. Stützle, and M. Birattari (2007). A study of stochastic local search algorithms for the quadratic assignment problem. In E. Ridge, T. Stützle, M. Birattari, and H. H. Hoos (Eds.) *SLS-DS 2007: Doctoral Symposium on Engineering Stochastic Local Search Algorithms*, pp. 11–15. Brussels, Belgium.
- [W08] P. Balaprakash, M. Birattari, T. Stützle, and M. Dorigo (2007). Sampling strategies and local search for stochastic combinatorial optimization. In E. Ridge, T. Stützle, M. Birattari, and H. H. Hoos (Eds.) *SLS-DS 2007: Doctoral Symposium on Engineering Stochastic Local Search Algorithms*, pp. 16–20. Brussels, Belgium.
- [W07] M. Manfrin, M. Birattari, T. Stützle, and M. Dorigo (2007). Communication policies for a parallel multi-colony ACO algorithm with identical colonies. In E. Ridge, T. Stützle, M. Birattari, and H. H. Hoos (Eds.) *SLS-DS 2007: Doctoral Symposium on Engineering Stochastic Local Search Algorithms*, pp. 31–35. Brussels, Belgium.

- [W06] T. T. Huynh, T. Stützle, M. Birattari, and Y. De Smet (2007). A study of ant colony optimization algorithms for a biobjective permutation flowshop problem. In E. Ridge, T. Stützle, M. Birattari, and H. H. Hoos (Eds.) *SLS-DS 2007: Doctoral Symposium on Engineering Stochastic Local Search Algorithms*, pp. 58–62. Brussels, Belgium.
- [W05] M. Birattari and T. Stützle (2006). F-Races: A tool for the automatic configuration of stochastic local search algorithms. In *ECCO XIX - CO2006 Joint Meeting*. Porto, Portugal.
- [W04] M. Manfrin, M. Birattari, and M. Dorigo (2005). Parallelization of ant colony optimization. In *Making Europe more attractive for researchers. A Marie Curie Action*. Pisa/Livorno, Italy.
- [W03] M. Chiarandini, T. Stützle, and M. Birattari (2005). Applying stochastic local search methods to timetabling: an engineering process. In R. De Leone, E. Marchitto, and A. G. Quaranta (Eds.) *XXXVI Annual Conference of the Italian Operational Research Society*, p. 74. Camerino, Italy.
- [W02] G. Bontempi and M. Birattari (1997). Lazy learning indirect control for discrete time non-linear systems. In T. A. Johansen and B. A. Foss (Eds.) *Abstracts of Workshop on Multiple Model Approaches to Modelling and Control*, pp. 72–80. Trondheim, Norway.
- [W01] H. Bersini, M. Birattari, and G. Bontempi (1997). Combining Dynamic Programming and Neurocontrol: Some Basic Issues. In H. Bersini, M. Dorigo, P. Y. Glorennec, L. Jouffe, and E. Anquetil (Eds.) *Third European Workshop on Reinforcement Learning*. Rennes, France.