Short profile

Nicolas Zufferey is a full professor of operations management at the University of Geneva in Switzerland. His research activities are focused on designing metaheuristics for difficult and large combinatorial optimization problems, with applications mainly in transportation, scheduling, production, inventory management, network design, and telecommunications. He is member of the CIRRELT transportation and logistics research center (www.cirrelt.ca) and of the GERAD decision analysis research center (www.gerad.ca).

He received his BSc and MSc degrees in Mathematics at EPFL (the Swiss Federal Institute of Technology in Lausanne), as well as his PhD degree in operations research (2002). He was then successively a post-doctoral trainee at the University of Calgary (2003 – 2004) and an assistant professor at Laval University (2004 – 2007).

He is the (co)author of more than 60 publications (papers in professional journals, proceedings of conferences, and book chapters) and has reviewed papers for more than 30 international journals. He has had research activities with about 15 Universities in Europe and North America, as well as with about 10 private companies.

Published or accepted papers in journals with review process

2014


2013


2012

2011


2010


2009


2008


Before 2008


**Published or accepted papers in conference proceedings with review process**

2014

• N. Zufferey, Graph Coloring and Job Scheduling: from Models to Powerful Tabu Search Solution Methods, *Proceedings of the 14th International Workshop on Project Management and Scheduling, PMS 2014*, Munich, Germany, March 31 – April 2, 2014

2013


2012


2011


2010


Before 2008


## Chapters of books


• N. Zufferey, M. Verma, *Tabu Search for an Intermodal Transportation Problem*, Chapter 1 (pp 7 – 20) in Selected Logistics Problems and Solutions (Eds K. Grzybowska and P. Golińska), Publishing House of Poznan University of Technology, Poland, 2011
• Hertz, N. Zufferey, Vertex Coloring using Ant Colonies, Chapter in Artificial Ants (Eds N. Monmarché, F. Guinand, P. Siarry), Iste & Wiley, France, 2010 (October), ISBN: 978-1-8482-1194-0

Conferences with presentation

2014

• Tabu Search with Diversity Control and Simulation for an Inventory Management Problem, 5th International Conference on Metaheuristics and Nature Inspired Computing, META 2014, Marrakech, Morocco, October 27 – 31, 2014
• Graph Coloring and Job Scheduling: from Models to Powerful Tabu Search Solution Methods, 14th International Workshop on Project Management and Scheduling, PMS 2014, Munich, Germany, March 31 – April 2, 2014
• Enlarging the Paradigm of Ant Algorithms, 5th International Conference on Metaheuristics and Nature Inspired Computing, META 2014, Marrakech, Morocco, October 27 – 31, 2014 (KEYNOTE SPEAKER)
• Optimization by Unconventional Ant Algorithms, 3rd International Conference on Operations Research and Enterprise Systems, ICORES 2014, Angers, France, March 6 – 8, 2014 (KEYNOTE SPEAKER)
• Design and Classification of Ant Metaheuristics, 22nd Euromicro International Conference on Parallel, Distributed and Network-Based Processing, PDP 2014, Torino, Italy, February 12 – 14, 2014

2013


2012

• Consistent Neighborhood Search for Constrained Assignment Problems, 9th International Conference on Modeling, Optimization & Simulation, MOSIM 2012, Bordeaux, France, June 6 – 8, 2012
• Tabu search using variable amplitudes for dimensioning an assembly/disassembly production system, 13th International Workshop on Project Management and Scheduling, PMS 2012, Leuven, Belgium, April 1 – 4, 2012

2011

• A Reconstructive Evolutionary Metaheuristic for the Vertex Coloring Problem, 23rd Benelux Conference on Artificial Intelligence, BNAIC 2011, Gent, Belgium, November 3 – 4, 2011.
• A local search for refueling locomotives, 54th annual conference of the Administrative Science Association of Canada, ASAC 2011, Montreal, Canada, July 2 – 5, 2011
• Online optimization for a vehicle routing problem, European Chapter on Combinatorial Optimization, ECCO XXIV, Amsterdam, Nederland, May 30 – June 1, 2011
• Tabu search for a project scheduling problem with incompatibility and assignment costs, 12th International Workshop on Project Management and Scheduling, PMS 2010, Tours, France, April 26 – 28, 2010
• Solution methods for a project scheduling problem, 7th International Colloquium on Graphs and Optimization, GO VII, Ovronnaz, Switzerland, June 13 – 17, 2010
• Ants and graph coloring, European Chapter on Combinatorial Optimization, ECCO XXIII, Malaga, Spain, May 27 – 29, 2010

Before 2008

• Variable space search, 6th International Colloquium on Graphs and Optimization, GO VI, Cademario, Switzerland, August 19 – 23, 2007
• Variable space search for graph coloring, The 7th Metaheuristics International Conference, MIC 2007, Montreal, Canada, June 25 – 29, 2007
• A solution method based on graph models, linear programming and neighborhood search for a car fleet management problem, 22nd European Conference on Operational Research, EURO XXII, Prague, Czech Republic, July 8 – 11, 2007
• A New Ant Colony Algorithm Graph Coloring, Workshop on Nature Inspired Cooperative Strategies for Optimization, NICSO 2006, Granada, Spain, June 29 – 30, 2006
• Tabu Search for a Car Sequencing Problem, 19th International Florida Artificial Intelligence Research Society Conference, FLAIRS 2006, Melbourne, USA, May 11 – 13, 2006
• Tabu search for a car fleet management problem with maintenance constraints, 5th International Colloquium on Graphs and Optimization, GO V, Leukerbad, Switzerland, August 20 – 24, 2006
• Inventory Control of Raw Materials under Stochastic and Seasonal Lead Times, INFORMS 2004, Banff, Canada, May 16 – 19, 2004
• Méthode tabou pour un problème d’affectation de fréquences avec polarisation, 3e Journées Francophone de Recherche Opérationnelle, FRANCORO III, Quebec City, Canada, May 9 – 12, 2001
• Variable neighborhood search for graph coloring, European Chapter on Combinatorial Optimization, ECCO XIII, Capri, Italy, May 18 – 20, 2000
• Variable neighborhood search for graph coloring, 4th International Colloquium on Graphs and Optimization, GO IV, Leukerbad, Switzerland, August, 2000
• Local search for graph coloring, 18th Euro Winter Institute, EWI XVIII, Schwarzsee, Switzerland, March 4 – 18, 2000

Invited seminars

2014

• International Institute for the Management of Logistics – Paris (France), Graph Coloring Tools for Scheduling Production, December 2, 2014
• GERAD – Montreal (Canada), Exact and solution methods for a car sequencing problem, August 7, 2013
• CIRRELT – University of Montreal, Unconventional Ant Metaheuristics for Combinatorial Optimization, June 26, 2014
• EPFL, Consistent Neighborhood Search for a Multi-Resource Range Scheduling Problem, May 6, 2014
• Procter & Gamble (Geneva, Switzerland), Linear Programming for Logistics, February 20, 2014

2013

• International Institute for the Management of Logistics – Paris (France), Tabu Search for Scheduling Cars on a Single Production Line, October 22, 2013
• GERAD – Montreal (Canada), Metaheuristics for a truck loading problem proposed by the car manufacturer Renault, August 6, 2013
• Faculty of Business Administration – University Laval (Quebec City, Canada), Guidelines to efficiently build an academic career from a PhD position, July 10, 2013
• FORAC Research Centre – University Laval (Quebec City, Canada), Gestion de stock lorsque les temps de livraison sont aléatoires et dont la distribution varie selon la saison, July 10, 2013
• Procter & Gamble (Geneva, Switzerland), *Modeling and Solving Logistic Problems with Linear Programming Tools*, June 14, 2013
• University of Lille (France), *Learning Tabu Search for Combinatorial Optimization*, May 28, 2013

2012

• Renault R&D – Paris (France), *Solution methods for a constrained truck loading problem*, October 23, 2012
• GERAD – Montreal (Canada), *Consistent Neighborhood Search for Assignment Problems with Incompatibility Constraints*, August 7, 2012
• CIRRELT – University Laval (Quebec City, Canada), *Algorithmes de recherche locale et méthodes évoluves pour un problème d’ordonnancement de tâches avec coûts de réglages, pénalités de retards et coûts d’abandon*, July 4, 2012

2011

• CIRRELT – University Laval (Quebec City, Canada), *Gestion de l’approvisionnement énergétique d’une flotte de locomotives dans un réseau ferroviaire nord-américain*, July 7, 2011
• Politecnico di Milano (Italy), *A heuristic for tank refueling over a railway network*, February 8, 2011

2010

• EDF – Paris (France), *Algorithme tabou et son application à des problèmes de production, gestion de stocks et ordonnancement*, October 12, 2010
• CIRRELT – University Laval (Quebec City, Canada), *Heuristiques pour un problème de gestion de projet avec coûts d’incompatibilités et d’affectations*, June 29, 2010

2009

• Alès School of Mines (France), *Méta-heuristiques récentes et leur adaptation au problème de la coloration de graphes*, December 2, 2009
• Columbia University (New York, USA), *Consistent neighborhood in a tabu search and its success in various combinatorial optimization problems*, July 10, 2009
• CIRRELT – University Laval (Quebec City, Canada), *Recent developments in metaheuristics for combinatorial optimization*, June 25, 2009

2008

• CIRRELT – University Laval (Quebec City, Canada), *Heuristiques pour un problème d’ordonnancement de tâches sur satellites*, July 17, 2008
• EPFL, *Variable Space Search, Ant Local Search, and Graph Coloring*, April 18, 2008

Before 2008

• EPFL, *Graph Coloring Approaches for a Satellite Range Scheduling Problem*, November, 2006
• EPFL, *Inventory Control of Raw Material Under Stochastic and Seasonal Lead Time*, November 30, 2005
• EPFL, *Heuristique tabou pour un problème d’ordonnancement de la production de voitures*, December 2, 2004
• GERAD – École Polytechnique de Montréal (Canada), *Le problème de la coloration des sommets d’un graphe : analyse des principales méthodes et proposition d’une nouvelle heuristique tabou agissant dans un espace des solutions original*, April, 2003
• University of Liege (Belgium), *Aperçu et analyse des principales heuristiques pour la coloration des sommets d’un graphe*, February 7, 2002