

Personal information

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Education

2001-2004	Ph.D. in Mathematics, Swiss Federal Institute of Technology (EPFL), <i>Some combinatorial optimization problems in graphs with applications in telecommunications and tomography</i> , supervised by Prof. Dominique de Werra
1996-2001	Studies in Mathematics, Swiss Federal Institute of Technology (EPFL)

Employment history

2019-today	Senior researcher and Lecturer , Dpt of Informatics, U. of Fribourg, Switzerland (40%)
2009-today	Lecturer , Haute Ecole de Gestion (HEG) of Geneva, Switzerland (only 60% since 2019)
2008-2009	Research fellow and teacher at HEG
2005-2007	Postdoctoral Fellow , Group for Research in Decision Analysis (GERAD), Montreal, Canada

Teaching activities

Since 2019	Graph Theory and Applications (UniFR)
Since 2018	Recherche opérationnelle (HEG)
2008-2017	Mathématiques 1-4, Statistiques 1-4 (HEG)
2007	Calcul I (Ecole Polytechnique de Montréal)
2004	Optimisation combinatoire (Lebanese University, Beirut, Lebanon)
2001-2004	Algorithmique, Graphes et réseaux (EPFL, teaching assistant)

Institutional responsibilities

2010 - today	In charge of the course and exams timetabling for HEG, as well as student allocation of student to optional courses
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Memberships in boards, scientific societies and individual scientific reviewing activities

2015-2016	Guest editor for the "Graphs and Optimization IX" (GO IX) Special Issue in Discrete Applied Mathematics (DAM).
Since 2001	Reviewing activities for various journals : Discrete Applied Mathematics, Mathematical Programming Computation, Journal of Heuristics, EURO Journal on Computational, Optimization, Computers and Operations Research, Algorithmica
Since 2001	Member of the Swiss Operations Research Society

Organization of conferences, workshops

Conferences	Graphs and Optimisation VII (GO VII) 2010, GO IX 2014, GO X 2016
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Approved research projects

2004 **SNF grant** for postdoctoral research at GERAD

Prizes, awards and fellowships

2001 **Ranked 5th** out of 27 teams in the *French Operations Research Society Challenge for the best optimization program on an industrial application*

2000-2001 **Swiss Operations Research Society Best Master Thesis Award** in Operations Research in Switzerland

Major scientific achievements

Conjecture 747 solution

During his postdoctoral stay at GERAD (2005-2007), David Schindl joined a team of researchers working since several years on a well-circulated conjecture on graph theory, called the "747" conjecture. David Schindl proposed a more general and natural version of this conjecture and made the decisive steps to prove it. He then formulated a more general conjecture which is still open today.

Development of a complete software solution for the courses and exams timetabling at HEG

The courses schedule at HEG is subject to various constraints, among others : each teacher and each student timetable must be conflict free ; teachers have specific unavailabilities and timeslot preferences ; teachers and students timetable must in general be compact, i.e. if possible not spread out over the week. Some of these constraints are not straightforward to express as linear constraints. David Schindl modelled the complete problem as a mixed integer linear program and the obtained schedule with the solution method is applicable almost as is, with only few postoptimization changes. This is used since several years at HEG. He is still developing his solution to make the timetabling process at HEG as efficient as possible.

List of publications

Refereed international journals

1. D. Schindl. Optimal student sectioning on mandatory courses with various sections numbers. *Annals of Operations Research*, 275(1) :209–221, 2019
2. D. Schindl and N. Zufferey. A learning tabu search for a truck allocation problem with linear and nonlinear cost components. *Naval Research Logistics (NRL)*, 62(1) :32–45, 2015
3. A. Hertz, O. Marcotte, and D. Schindl. On the maximum orders of an induced forest, an induced tree, and a stable set. *Yugoslav Journal of Operations Research*, 24(2) :199–215, 2014
4. D. Schindl and N. Zufferey. Solution methods for fuel supply of trains. *INFOR : Information Systems and Operational Research*, 51(1) :23–30, 2013
5. N. Zufferey, O. Labarthe, and D. Schindl. Heuristics for a project management problem with incompatibility and assignment costs. *Computational Optimization and Applications*, 51(3) :1231–1252, 2012
6. M. Plumettaz, D. Schindl, and N. Zufferey. Ant local search and its efficient adaptation to graph colouring. *Journal of the Operational Research Society*, 61(5) :819–826, 2010
7. P. Hansen, A. Hertz, R. Kilani, O. Marcotte, and D. Schindl. Average distance and maximum induced forest. *Journal of Graph Theory*, 60(1) :31–54, 2009
8. P. Hansen, M. Labbé, and D. Schindl. Set covering and packing formulations of graph coloring : Algorithms and first polyhedral results. *Discrete Optimization*, 6(2) :135 – 147, 2009
9. A. Hertz, D. Schindl, and N. Zufferey. A solution method for a car fleet management problem with maintenance constraints. *Journal of Heuristics*, 15(5) :425–450, 2009
10. T. Bornand-Jaccard, D. Schindl, and D. de Werra. Some simple optimization techniques for self-organized public key management in mobile ad hoc networks. *Discrete Applied Mathematics*, 154(8) :1223 – 1235, 2006

11. M. Costa, D. de Werra, C. Picouleau, and D. Schindl. A solvable case of image reconstruction in discrete tomography. *Discrete Applied Mathematics*, 148(3) :240 – 245, 2005
12. D. Schindl. Some new hereditary classes where graph coloring remains NP-hard. *Discrete Mathematics*, 295(1-3) :197–202, 2005
13. A. Hertz, D. Schindl, and N. Zufferey. Lower bounding and tabu search procedures for the frequency assignment problem with polarization constraints. *4OR*, 3(2) :139–161, 2005
14. A. Hertz, V. Lozin, and D. Schindl. Finding augmenting chains in extensions of claw-free graphs. *Information Processing Letters*, 86(6) :311 – 316, 2003
15. M. U. Gerber, A. Hertz, and D. Schindl. P5-free augmenting graphs and the maximum stable set problem. *Discrete Applied Mathematics*, 132(1-3) :109–119, 2003. Stability in Graphs and Related Topics

Refereed proceedings

1. Z. Deniz, S. Nivelle, B. Ries, and D. Schindl. On some subclasses of split B1-EPG graphs. In Y. Kohayakawa and F. K. Miyazawa, editors, *LATIN 2020 : Theoretical Informatics*, pages 625–636, Cham, 2020. Springer International Publishing
2. Z. Deniz, S. Nivelle, B. Ries, and D. Schindl. On split B1-EPG graphs. In M. A. Bender, M. Farach-Colton, and M. A. Mosteiro, editors, *LATIN 2018 : Theoretical Informatics*, pages 361–375, Cham, 2018. Springer International Publishing
3. D. Schindl. Student sectioning for minimizing potential conflicts in multi-section courses. In *Practice and Theory on Automated Timetabling 2016 (PATAT 2016)*, 2016
4. N. Zufferey and D. Schindl. Learning tabu search for combinatorial optimization. In E. Pinson, F. Valente, and B. Vitoriano, editors, *Proceedings of the third International Conference Operations Research and Enterprise Systems (ICORES 2014)*, Proceedings of the third International Conference Operations Research and Enterprise Systems - ICORES 2014, pages 3–11, Piscataway, 2015. Springer. ID : unige :73313
5. S. Varone and D. Schindl. Course opening, assignment and timetabling with student preferences. In *Proceedings of the 2nd International Conference on Operations Research and Enterprise Systems (ICORES 2013)*, pages 153–158, 2013
6. D. Schindl and N. Zufferey. Ant local search for fuel supply of trains in america. In *Proceedings of the 1st IEEE International Conference on Logistics Operations Management (LOM 2012)*, Proceedings of the 1st IEEE International Conference on Logistics Operations Management, 2012. ID : unige :26481
7. D. Schindl and N. Zufferey. A local search for refueling locomotives. In *Proceedings of the 54th annual conference of the Administrative Science Association of Canada, Production & Operations Management Division (ASAC 2011)*, 2011
8. N. Zufferey, O. Labarthe, and D. Schindl. Tabu search for a project scheduling problem with incompatibility and assignment costs. In *Proceedings of the 12th International Workshop on Project Management and Scheduling (PMS 2010)*, 2010