

CURRICULUM VITAE

April 2026

A. Biographical Information

1. Personal

Name : A. Ridha Mahjoub
Date of Birth : May 25, 1956
Marital Status : Married
University address : LAMSADE, Université Paris-Dauphine
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Present Position : Professor Emeritus

2. Degrees Held

- Doctorat d'Etat (Habilitation thesis): Combinatorial Optimization and Operations Research, Université Scientifique et Médicale de Grenoble, Institut IMAG, 1981-85.

Thesis title:

Etude de structures combinatoires issues de la physique statistique et d'autres domaines

[Study of combinatorial structures related to statistical physics and other domains].

Supervisor : Professor Jean Fonlupt

- Doctorat 3ème cycle (Ph.D. Thesis), Operations Research, Université Scientifique et Médicale de Grenoble, Institut IMAG, 1979-81.

Thesis title:

I - Amélioration de l'écoulement du trafic par restriction de capacités

[Improvement of traffic flow by restriction of capacities]

II - Polytope des absorbants dans une classe de graphes à seuil

[The dominating set polytope in a class of threshold graphs].

Supervisor: Professor Michel Sakarovitch

- D.E.A. (Master-degree), Operations Research, Université Scientifique et Médicale de Grenoble, 1978-79.
- Bac, Bsc Mathematics, Université de Tunis, Tunisia 1974-78.

B. Positions Held

- Professor Emeritus, Université Paris-Dauphine, since September 2022.
- Full Professor at the rank of Distinguished Professor 2nd Class, Laboratoire LAMSADE, Université Paris-Dauphine, Paris, France, 2016 -2022.
- Full Professor at the rank of Distinguished Professor 1st Class, Laboratoire LAMSADE, Université Paris-Dauphine, Paris, France, 2011-2016.
- Full Professor at the rank of Professor 1st Class, Laboratoire LAMSADE, Université Paris-Dauphine, Paris, France, 2007-2011.
- Full Professor at the rank of Professor 1st Class, Laboratoire LIMOS, Université Blaise Pascal, Clermont-Ferrand, France, 2000-2007.
- Full Professor, Laboratoire LIMOS, Université Blaise Pascal, Clermont-Ferrand, France, 1998-2000.
- Full Professor, Department of Computer Sciences, Université de Bretagne Occidentale, Brest, France, 1991-1998.
- Assistant Professor, Department of Statistics and Operations Research, King Saud University, Riyadh, Saudi Arabia, 1986-1991.
- Postdoctoral Fellow:
 - * Department of Combinatorics and Optimization, University of Waterloo, Canada, October 1985 - February 1986
 - * Department of Computer Sciences, University of Toronto, March 1986 - July 1986
- Assistant Professor, Université de Grenoble, 1984-85.
- Doctoral Fellow, Université de Grenoble, Institut IMAG, 1979-84.

C. Academic History

1. Administrative Experience

- Co-Director (Vice-Dean) of the Math and Computer Science Department, (MIDO), Université Paris-Dauphine, Paris, France, September 2008-January 2014. (A department in Dauphine is equivalent to a faculty. Because of its special status, Dauphine cannot use the terminology of “faculty”, it can only be structured into departments. It is, in fact, organized into three departments.)
- President of the Information System Council (COSI) of Université Paris-Dauphine, April 2009-July 2014.
- Chair of the group « Optimisation Combinatoire, Algorithmique et Données » [Combinatorial Optimization, Algorithmic and Data] of LAMSADE, University Paris-Dauphine, October 2008-April 2013. (Laboratory LAMSADE is structured into two groups : Decision Aid and Combinatorial Optimization, Algorithmic and Data.)
- Chair of the MIAGE Program (Computer Science Methods for Management), Université Paris-Dauphine, September 2008-January 2014.
- Member of the EQUIS (European Quality Improvement System) group in charge of the programs, Université Paris-Dauphine, January 2009-January 2014.
- Chair of the « Polyèdres et Optimisation Combinatoire (POC) » (Polyhedra and Combinatorial Optimization) group of GDR-RO in France, since 2006.
- Chair of the Computer Science program of the Licence degree, Université de Clermont-Ferrand, France, October 1999-June 2007. (The Licence degree corresponds to the 3rd year level of the university.)
- Chair of the Master program "Systèmes d'Information et Aide à la Décision", [Information Systems and Decision Aid] Université de Clermont-Ferrand, June 2000-September 2002.
- Member of the Math and Computer Science Department Council, Université de Clermont-Ferrand, France, December 2000- December 2002.
- Vice-President of the computer science recruitment committee, Université de Clermont-Ferrand, April 2001-May 2004.
- President of the computer science recruitment committee, Université de Clermont, September 2001-september 2002 and April 2004-April 2007.
- Chair of the project "Optimisation Combinatoire" [Combinatorial Optimization] of Laboratory LIMOS, Université de Clermont, 2004-2007.
- Chair of the « Polyèdres et Optimisation Combinatoire (EPOC) » (Polyhedra and Combinatorial Optimization) group of LIMOS, Université de Clermont, 2000-2007.

- Member of the laboratory council (LIMOS), Université de Clermont-Ferrand, 1998-2007.
- Director of the Computer Science Department, Université de Brest, October 1996-June 1998.
- Chair of the Computer Science program in the Licence degree (3rd year level), Université de Brest, France, October 1992-June1998.
- President of the Computer Science recruitment committee, Université de Brest, France, September 1993 - January 1998.
- Founder and Chair of Laboratory "Systèmes de Production et Optimisation (SPO)" [Production Systems and Optimization], Université de Brest, 1993-1998.
- Member of the Computer Science Department Council, Université de Brest 1993-1998.
- Head of Statistics and Operations Research Department, King Saud University, Saudi Arabia, December 1988-July 1991.
- Chair of the Operations Research Program, King Saud University, Saudi Arabia, 1986-1991.

2. Distinctions

- Lifetime achievement award of the Tunisian Operations Research Society (July 2019).
- Honorary award of the IEEE Society (April 2019).
- Distinguished Professor 2 (Professeur Classe Exceptionnelle 2), September 2016.
- Distinguished Professor 1 (Professeur Classe Exceptionnelle 1), September 2011.
- Best student paper award (with my Ph.D. student Meriam Mahjoub) in CIE 45 (2015).
- Price « Ouverture Internationale » [International openness], Free University of Brussels, 2004.
- Best student paper award (with my Ph.D. student Sebastien Martin) in CIE 39 (2009).
- Premium of research: 1994-2021.
- French Government Fellowship for Tunisian outstanding students, 1978-84.

3. Research

3.1. Research interests:

Applications and Theory of Graphs, Operations Research, Combinatorial Optimization and Polyhedral Theory (Solving large-scale problems), Network Design, Integer Programming, Linear Programming, Complexity Theory.

3.2. Collaboration with industry

Some of the Ph.D. and Master theses I supervised have been conducted within projects with companies. I had collaboration with the following companies:

- *France Telecom (Orange-Lab)*

Since many years, I have a strong collaboration with France Telecom. Three Ph.D and eight Master Theses have been prepared within projects with France Telecom. All are related to network design problems.

Ph.D theses:

- Sylvie Borne, « Survivability and routing in telecommunication networks » (December 2006).
- Amal Benhamiche, « Designing optical multi-band networks: polyhedral analysis and algorithms », (December 2013).
- Mohamed Yassine Naghmouchi, « Security Management in Complex Systems : Models, Polyhedra and Algorithms », (June 2019).

Master theses:

- Hajer Ben Fekih, “Optimal allocation of radio resources in a heterogeneous access network”, (September 2017).
- Walid Ibrahim, “Design and development of an innovative solution for optimizing the delivery of partner content in a mobile environment”, (September 2016).
- Yassine Naghmouchi, « Optimization of energy consumption in telecommunications networks », (September 2014).
- Guillaume Vandroyen, « Optimization and Security of Telecommunication Networks », (September 2013).
- Othman Moumni Abdou, « Heuristic and exact solution methods for Time Dependent Vehicle Routing Problem with Time Windows - Applications to Orange intervention workforce management », (September 2012).
- Amal Benhamiche, “Multilayer networks in telecommunications” (September 2009).
- Rawia Taktak “Multilayer networks in telecommunications” (September 2008).

- Sylvie Borne, " Study of some survivable telecommunication network" (September 2002).
- *Huawei Lab, Paris*

Ph.D. Thesis

Isma Bentoumi, "The Multicommodity Flow Blocker Problem : Polyhedral Analysis and Algorithms", (July 2024).

- *SIEMENS (Toulouse, France) and LMS-IMAGINE (Roannes, France)*

A **Ph.D. thesis** has been prepared with these companies:

- Sébastien Martin, "Structural Analysis of Algebraic-Differential Systems : Complexity, Models and Polyhedra » [Analyse Structurale des Systèmes Algébro-Différentiels : Complexité, Modèles et Polyèdres] (December 2011)

This thesis, which has been prepared within a research project with the companies SIMENS and LMS-Imagine (and two other universities) in France, is related to which is called the structural analysis problem for diferrential algebraic systems. These are used for modeling the mouvement of complex physical systems (like engines of cars, planes, ...). A method have been proposed to solve this problem and to permit to the companies to verify whether the systems can be solved by numerical techniques. This permitted to the compagnies to make big saving in time and money in the simulation of these systems.

- *ALTARES, Paris*

A **Ph.D. thesis** has been prepared with ALTARES:

- Mohamed Ould Lemine, « Connaissance Inter-Entreprises et Optimisation Combinatoire » [Inter-company knowledge and Combinatorial Optimization], (June 2014).

In this thesis, combinatorial optimization has been used to approach some problems which arise in data bases, particularly in the field of inter-companies knowledge. The aim is to allow to the different partners of a company to learn about its customers, suppliers and activities. The amount of data processed in this area and the requirements of quality and freshness of information give rise to several optimization problems. Techniques from combinatorial optimization, text algorithms as well as graph theory are used to efficiently solve problems posed by ALTARES.

- *FlexRAS Technologies, Paris*

Two **Master theses** have been prepared with *FlexRAS Technologies*:

- Lamia Zane, « Graph partitioning » (September 2011).
- Lounes Bentaha, « Development of a routing tool in multi-FBGA systems » (September 2011).

Both theses are related to some graph partitioning and routing problems in the field-programmable gate array (FPGA) systems. These are used in the design of integrated circuits in microelectronics.

- *Air Liquide, Paris*

A **Master thesis** was prepared with Air Liquide:

- Yusra Tourki, « Maintenance Planning Optimization », (September 2013).

Air Liquide is the world leader in gases for industry, health and environment. The purpose of this thesis is to develop a decision tool for the maintenance planning. The product proposed permitted to reduce the routing costs by 33%.

- *Aximum, Produits Electroniques, Paris*

A **Master thesis** was prepared with Air Liquide:

- Samira Bouadi, « Study of a traffic forecasting problem » (September 2014).

Aximum, Produits Electroniques is a company that produces electronic equipment for roads. The thesis concerns some traffic forecasting problem. The production of the compagny should be adapted to the traffic and the need of roads.

- *Banque de France, Paris,*

A **Master thesis** was prepared with Banque de France:

- Massipssa Kerrache, “Optimization of Security transactions: Night Time Settlement” (September 2016).

The thesis is related to some security problem for night transactions in the main European banks.

All the projects gave rise to packages provided to the companies. Also some of the projects with France Telecom have led to patents.

3.3. Collaborations with universities and research centers

In addition to Kuwait University, some of my research work has been conducted within collaborations with research centers in France and abroad. These have been with:

- Watson Research Center, IBM, New York
- University of British Columbia, Vancouver, Canada
- University UFF, Rio de Janeiro, Brazil
- Bilkent University, Ankara, Turkey
- Sultan Qaboos University, Muscat, Oman
- Karabük University, Karabük, Turkey

- University of Lisbonne, Portugal
- Carnegie Mellon University, Pittsburg, USA
- University El-Manar, Tunis, Tunisia
- University of Clermont-Ferrand, France
- University of Cean, France
- University of Bordeaux 1, France
- University Pierre & Marie Curie, Paris, France
- University of Metz, France
- University Paris 13, Paris, France.

All these collaborations gave and are giving rise to common publications.

3.4. Refereed Publications:

(The alphabetical order of authors is considered in all the publications)

3.4.1. Books

1. Volker Kaibel, Simge Kucukyavus, Hakan Kutucu, A. Ridha Mahjoub (Eds) "Combinatorial Optimization"; **LNCS 16613** (ISCO 2026), Springer (2026).
2. Amitabh Basu, A. Ridha Mahjoub, Juan Jose Salazar (Eds) "Combinatorial Optimization"; **LNCS 14594** (ISCO 2024), Springer (2024).
3. Ivana Ljubic, Francisco Barahona, Santanu S. Dey, A. Ridha Mahjoub (Eds) "Combinatorial Optimization"; **LNCS 13526** (ISCO 2022), Springer (2022).
4. M. Baiou, B. Gendron, O. Günlük, A. R. Mahjoub (Eds) "Combinatorial Optimization"; **LNCS 12176** (ISCO 2020), Springer (2020).
5. J. Lee, A. R. Mahjoub, G. Rinaldi (Eds) "Combinatorial Optimization"; **LNCS 10856** (ISCO 2018), Springer (2018).
6. R. Cerruli, A. R. Mahjoub, S. Fujishige (Eds) "Combinatorial Optimization"; **LNCS 9849** (ISCO 2016), Springer (2016).
7. P. Fouilhoux, L. Gouveia, A. R. Mahjoub, V. Paschos (Eds) "Combinatorial Optimization" **LNCS 8596** (ISCO 2014), Springer 2014.
8. A. R. Mahjoub, V. Markakis, Y. Milis, V. Th. Paschos (Eds) "Combinatorial Optimization", **LNCS 7422** (ISCO 2012, Springer 2012).
9. A. R. Mahjoub (Ed.) « Progress in Combinatorial Optimization », Wiley-ISTE (2011).

3.4.2. Articles accepted or published in journals

1. Y. Magnouche, A. R. Mahjoub, S. Martin, "The multi-terminal vertex separator problem : Composition of Polyhedra", *Journal of Combinatorial Optimization* 50 (3): 27 (2025).

2. Y. Hadhbi, I. Diarrassouba, A. R. Mahjoub, S. Abukhamseen, “A Machine Learning-based Branch-and-Cut-and-Price Algorithm for the Survivable Constrained Routing and Spectrum Assignment Problem”, to appear in “Forging Bridges between Artificial Intelligence and Operations Research: Applications in Healthcare and Supply Chain Management”, Eds. S. Bhar Layeb, H. Masri, D. La Torre, R. Jayaraman, Springer series: Engineering Optimization, 2025.
3. I. Bentoumi, F. Furini, A. R. Mahjoub, S. Martin, “Integer linear programming formulations for the maximum flow blocker problem”, *European Journal of Operations Research* 324 (2025) 742-758.
4. A. R. Mahjoub, R. Taktak, E. Uchoa, “The Multiple Steiner TSP with Cyclic Order on Terminal: Valid Inequalities and Polyhedra”, *Journal of Combinatorial Optimization*, 49(5): 89 (2025).
5. F. Almathkour, Y. Magnouche, A. R. Mahjoub, R. Taktak, “Design of Survivable Networks with Low Connectivity Requirements”, *International Transaction in Operations Research* (32)2 (2025) pp. 918-960.
6. I. Diarrassouba, A. R. Mahjoub, I. M. Almudahka, “Optimization algorithms for the k edge-connected L -hop constrained network design problem”, *Soft Computing* 28 (11-12) (2024) pp. 7201-7225.
7. I. Diarrassouba, Y. Hadhbi, A. R. Mahjoub, “Branch-and-Cut-and-Price Algorithm for the Constrained-Routing and Spectrum Assignment Problem”, *Journal of Combinatorial Optimization*.47(4) (2024) pp. 1-37.
8. H. Aissi, A. R. Mahjoub, “On the minimum $s - t$ cut problem with budget constraints”, *Mathematical Programming* 203(1) (2024) pp. 421-442.
9. P. H. Liguori, A. R. Mahjoub, G. Marques, R. Sadykov, E. Uchoa, “Non-Robust Strong Knapsack Cuts for Capacitated Location-Routing and Related Problems”, *Operations Research* (71) 5 (2023) pp. 1577- 1595.
10. I. M. Almudahka, I. Diarrassouba, A. R. Mahjoub, R. Taktak, “Two-edge connectivity with disjunctive constraints: Polyhedral analysis and Branch-and-Cut”, *Computers and Industrial Engineering* 184: 109585 (2023).
11. Y. Magnouche, A. R. Mahjoub, S. Martin, “The multi-terminal vertex separator problem: Branch-and-Cut-and-Price, *Discrete Applied Mathematics*, 290 (2021) pp. 86-111.
12. V. Gabrel, A. R. Mahjoub, R. Taktak, E. Uchoa, “The multiple Steiner TSP with

order constraints: complexity and optimization algorithms”, *Soft Computing*, 24(23) (2020) 17957-17968.

13. A. Benhamiche, A. R. Mahjoub, N. Perrot and E. Uchoa, “Capacitated Multi-Layer Network Design with Unsplittable Demand: Polyhedra and Branch-and-Cut”, *Discrete Optimization*, 35 (2020) 100555.
14. A. R. Mahjoub, M. Poss, L. Simonetti and E. Uchoa, “Distance transformation for network design problems”, *SIAM J. on Optimization*, 29(2) (2019) pp. 1687-1713.
15. O. Arslan, O. Ekin Karasan, A. R. Mahjoub, H. Yaman, “A Branch-and-cut Algorithm for the Alternative Fuel Refueling Station Location Problem with Routing”, *Transportation Science*, 53(4) (2019) pp. 1107-1125.
16. M. Aïder, M. Baïou, L. Oudia, A. R. Mahjoub, V. H. Nguyen, “On the star forest polytope for trees and cycles”, *RAIRO – OR*, 53(5) (2019) pp. 1763-1773.
17. I. Diarrassouba, M. K. Labidi, A. R. Mahjoub, “A Parallel Hybrid Optimization Algorithm for some Network Design Problems”, *Soft Computing*, 23(6) (2019) pp. 1947-1964.
18. D. Cornaz, Y. Magnouche, A. R. Mahjoub, S. Martin, “The multi-terminal vertex separator problem: Polyhedral analysis and Branch-and-Cut”, *Discrete Applied Mathematics*, 256 (2019) pp. 11-37.
19. D. Cornaz, F. Furini, M. Lacroix, E. Malaguti, A. R. Mahjoub, S. Martin, « The Vertex k-cut Problem”, *Discrete Optimization*, 31 (2019) pp. 8-28.
20. S. Borne, E. Gourdin, O. Klopfenstein and A. R. Mahjoub, "The Multilayer Capacitated Survivable IP Network Design Problem: Valid Inequalities and Branch-and-Cut", *Computers & Industrial Engineering* 124 (2018), pp. 582-603.
21. I. Diarrassouba, M. Mahjoub, A. R. Mahjoub, H. Yaman, “k-Node-Disjoint Hop-Constrained Survivable Networks: Polyhedral Analysis and Branch & Cut”, *Annals of Telecommunications*, 73 (1-2) (2018), pp. 5-28.
22. N. Kheir, A. R. Mahjoub, M. Y. Nagmouchi, N. Pierrot, “Realtime Risk Assessment in Complex ICT Systems”, *Annals of Telecommunications*, 73 (1-2) (2018), pp. 95-109.
23. P. Fouilhoux, A. R. Mahjoub, A. Quilliot, H. Toussain, “Branch-and-Cut-and-Price algorithms for the preemptive RCPS”, *RAIRO – OR* 52 (2018), pp. 513-523.
24. A. Benhamiche, A. R. Mahjoub, N. Perrot, E. Ucho, « Column generation based algorithms for the capacitated multi-layer network design with unsplittable demands”, *Pesquisa Operacional* (2017) 37(3), pp. 1-26.

25. I. Diarrassouba, M. Mahjoub, A. R. Mahjoub, R. Taktak, "The survivable k-node-connected network design problem: Valid inequalities and Branch-and-Cut », *Computers & Industrial Engineering*, 112 (2017), pp. 690-705.
26. D. Cornaz, H. Kerivin, A. R. Mahjoub, "Minimal arc-sets spanning dicycles", *Discrete Applied Mathematics*, 240 (2018), pp. 33-43.
27. M. Ben Salem, H. Ben Abdallah, R. Mahjoub, R. Taktak, « Optimization Algorithms for the Disjunctively Constrained Knapsack Problem », *Soft Computing* 22(6) (2018), pp. 2025-2043.
28. I. Diarrassouba, H. Kütücü, A. R. Mahjoub, "Two Node-Disjoint Hop-Constrained Survivable Network Design and Polyhedra", *Networks*, 67(4) (2016), pp. 316-337.
29. I. Diarrassouba, V. Gabrel, L. Gouveia, A. R. Mahjoub, P. Pesneau, "Integer programming formulations for the k-edge connected 3-hop constrained network design problem", *Networks* 67(2) (2016), pp. 148-169.
30. A. Benhamiche, A. R. Mahjoub, N. Perrot, Eduardo Uchoa, "Unsplittable non-additive capacitated network design using set functions polyhedral", *Computers and Operations Research* 66 (2016), pp. 105-115.
31. H. Aissi, A. R. Mahjoub, S. Th. McCormick, M. Queyranne, "A strongly polynomial time algorithm for multicriteria global minimum cuts", *Mathematical Programming* 154 (1-2) (2015), pp. 3-28.
32. O. Ekin Karasan, A. R. Mahjoub, O. Özkök, H. Yaman, "Survivability in Hierarchical Telecommunications Networks under Dual Homing", *INFORMS Journal on Computing* 26 (1) (2014), pp. 1-15.
33. I. Diarrassouba, A. Lourimi, A. R. Mahjoub, H. Youssef, "Hose workload based exact algorithm for the optimal design of virtual private networks", *Computer Networks* 57 (14) (2013), pp. 2766-2774.
34. A. R. Mahjoub, Luidi Simonetti, E. Uchoa, "L. Hop-Level Flow Formulation for the Survivable Network Design with Hop Constraints Problem", *Networks* 61, (2) (2013), pp. 171-179.
35. H. L. M. Kerivin, M. Lacroix, A. R. Mahjoub, "On the complexity of the Eulerian closed walk with precedence path constraints problem", *Theoretical Computer Science*, Vol 439 (2012), pp. 16-29.
36. P. Fouilhoux and A. R. Mahjoub, "Bipartization of graphs, VLSI design and DNA sequencing", *Computational Optimization and Applications*. Vol 51, N°2 (2012), pp. 749-781.
37. Lacroix, A. R. Mahjoub, S. Martin and Ch. Picouleau, "On the NP-completeness of the Perfect Matching Free Subgraph problem", *Theoretical Computer Science*, Vol 423 (2012) pp. 25-29.

38. H. L. M. Kerivin, M. Lacroix, A. R. Mahjoub, "Models for the single-vehicle preemptive pickup and delivery problem", *Journal of Combinatorial Optimization*, Vol 23, N°2 (2012) pp. 196-223.
39. P. Fouilhoux, O. Ekin Karasan, R. Mahjoub, O. Özkök, H. Yaman, "Survivability in Hierarchical Telecommunication Networks", *Networks*.Vol 59, N°1 (2012) pp. 37-58.
40. M. Lacroix, A. R. Mahjoub and S. Martin, "Structural Analysis in Differential-Algebraic Systems and Combinatorial Optimization", *Computers and Industrial Engineering*, Vol 61, N° 2 (2011) pp. 422-429.
41. F. Bendali, I. Diarrassouba, A. R. Mahjoub, J. Mailfert, "On the k-edge hop-constrained paths polytope", *Discrete Optimization* Vol 7, N° 4 (2010) pp. 222-233.
42. A. R. Mahjoub and S. T. McCormick, "Max Flow and Min Cut with Bounded-Length Paths: Complexity, Algorithms and Approximation", *Mathematical Programming* Vol 124, N°1-2 (2010) pp. 271-284.
43. F. Bendali, I. Diarrassouba, M. Didi Biha, A. R. Mahjoub, J. Mailfert, "A Branch-and-Cut algorithm for the k-edge connected subgraph problem ", *Networks* Vol 55 (1) (2010) pp. 13-32.
44. P. Fouilhoux, M. Labbé, A. R. Mahjoub, H. Yaman, "Generating procedures and non-rank facets for the independence system polytope", *SIAM Journal on Discrete Mathematics* Vol 23 (3) (2009) pp. 1484-1506.
45. Imed Kacem and A. R. Mahjoub, "Fully polynomial time approximation scheme for the weighted flow time minimization on a single machine with a fixed non-availability interval", *Computers and Industrial Engineering*, Vol 56 (4) (2009) pp. 1708-1712.
46. M. Didi Biha, H. Kerivin and A. R. Mahjoub, "On the (1,2)-Survivable Network Design Polytope", *SIAM Journal on Discrete Mathematics*. Vol 22 (4) (2008) pp. 1640- 1666.
47. A.R. Mahjoub and P. Pesneau "On the Steiner 2-edge connected subgraph polytope", *RAIRO-OR* 42 (2008) pp. 259-283.
48. H. Kerivin, M. Lacroix, A. R. Mahjoub, A. Quilliot, "The splittable pickup and delivery problem with reloads", *European Journal of Industrial Engineering*, Vol 2, N°2 (2008) pp.112-133.
49. M. Bouchakour, T. Contenza, C.W. Lee and A.R. Mahjoub, "On the dominating set polytope", *European Journal of Combinatorics* 29 (2008), pp. 652-661.
50. D. Cornaz and A. R. Mahjoub, "The maximum induced bipartite subgraph

- problem with edge weights”, *SIAM Journal on Discrete Mathematics* 21 (3) (2007), pp. 662-675.
51. D. Huygens and A. R. Mahjoub, “Integer programming formulations for two 4-hop-constrained paths problem”, *Networks* 49 (2) (2007), pp. 135-144.
 52. D. Huygens, M. Labbé, A. R. Mahjoub and P. Pesneau, “The Two-Edge Connected Hop Constrained Network design Problem : Valid Inequalities and Branch-and-Cut”, *Networks* 49 (1) (2007) pp. 116-133.
 53. G. Dahl, D. Huygens, A. R. Mahjoub and P. Pesneau, “On the k edge-disjoint 2-hop-constrained paths polytope”, *Operations Research Letters* 34 (2006), pp. 577-582.
 54. S. Borne, E. Gourdin, B. Liau and A. R. Mahjoub, “Design of Survivable IP-over-Optical Networks”, *Annals of Operations Research* 146 (1) (2006), pp. 41-73.
 55. P. Fouilhoux and A. R. Mahjoub , “Polyhedral results for the bipartite induced subgraph problem”, *Discrete Applied Mathematics* 154 (15) (2006) pp. 2128-2149.
 56. A. R. Mahjoub and J. Mailfert, “On the independent dominating set polytope”, *European Journal of Combinatorics* 27, 4 (2006), pp. 601-616.
 57. J. Fonlupt and A.R. Mahjoub, " Critical extreme points of the 2-edge connected subgraph polytope", *Mathematical Programming* 105 (2006) pp. 289-310.
 58. B. Fortz, T. McCormick, A. R. Mahjoub and P. Pesneau, “The 2-edge connected subgraph with bounded rings problem: Polyhedral results and Branch-and-Cut”, *Mathematical Programming* 105, 1 (2006), pp 85-111.
 59. H. Kerivin and A. R. Mahjoub, “Design of Survivable Networks: A survey”, *Networks*, 46 (2005) pp. 1-21. (Invited paper about the State-of-the-Art for the network design problem).
 60. H. Kerivin and A.R. Mahjoub, "On Survivable Network Polyhedra", *Discrete Mathematics* 290 (2005) pp. 183-210.
 61. D. Huygens, A.R. Mahjoub and P. Pesneau, “Two edge hop-constrained paths and polyhedra”, *SIAM journal on Discrete Mathematics* 18 (2) (2004) pp. 287-312.
 62. M. Didi Biha and A. R. Mahjoub, “The k-edge subgraph problem I: Critical extreme points”, *Linear Algebra and its Applications* 381 (2004) pp. 117-139.
 63. H. Kerivin, A.R. Mahjoub and C. Nocq "(1,2)-Survivable Networks: Facets and Branch&Cut", *The Sharpest-Cut*, M. Grötschel (Editor), *MPS/SIAM Optimization*, (2004) pp. 121-152. (The articles in this book have been evaluated Les articles dans ce livre ont été évalués suivant les normes du journal *Mathematical*

Programming.)

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3.4.4. Chapter in a book

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5. A. R. Mahjoub, "Approches Polyédrales" (in french), in "*Optimisation Combinatoire 1, concepts fondamentaux*", V. Paschos (Ed.), Hermes, Paris, (2005) pp. 263-329.

3.4.5 Articles submitted for publication

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2. R. Al-Jarallah, I. Diarrassouba, Y. Hadhbi, A. R. Mahjoub, "Polyhedral Investigation and Branch-and-Cut Algorithm for the Constrained-Routing and Spectrum Assignment Problem", submitted to *Networks*.
3. F. Almathkour, Y. Magnouche, A. R. Mahjoub, L. Slama, R. Taktak, « On the (1,k)-survivable network design polytope", submitted to *Journal of Combinatorial Optimization*.
4. R. Al-Jarallah, Marcos Roboredo, Eduardo Uchoa, A. R. Mahjoub, " On the Exact Solution of the Cycle Packing Problem", submitted to *Computers and Operations Research*.

3.4.6 Articles to be submitted for publication

1. P. Liguori, A. R. Mahjoub, "On the asymmetric VPN Tree polytope", (to be submitted to *SIAM J. Discrete Mathematics*).

2. F. Almathkour, H. Algattan, A. R. Mahjoub, "The (1,2,3) Survivable Network Design Problem with Node-Connectivity Requirements". (*This work is done within H. Alkattan's master thesis.*) (to be submitted to *Soft Computing*.)
3. M. Chopin, A. R. Mahjoub, M. Y. Naghmouchi, N. Perrot, "Security Management in Complex Systems and Polyhedra », (to be submitted to *Discrete Applied Mathematics*).
4. I. Diarrassouba, P. H. Liguori, A. R. Mahjoub, "The asymmetric VPN tree Problem: valid inequalities, facets and Branch-and-Cut", (to be submitted to *European Journal of Operations Research*).
5. R. Al-Jarallah, M. Didi Biha, A. R. Mahjoub, « The k-edge connected subgraph polytope in generalized Halin graphs", (to be submitted to *Optimization Letters*).
6. Hassene Aissi and A. Ridha Mahjoub, "A new combinatorial algorithm for the linear relaxation of the minimum s-t cut with budget constraints", (to be submitted to *Mathematical Programming*).

3.4.7. Communications at Conferences

1. I. Diarrassouba, P. Liguori, A. R. Mahjoub, "The asymmetric VPN Tree Problem" International Conference on Multiple Objective Programming and Goal Programming – MOPGP (October 2017), Metz, (France).
2. P. Liguori, A. R. Mahjoub, R. Sadykov, E. Uchoa, "An extended formulation for Location-Routing Problem", ROADEF Conference, February 2019, Le Havre (France).
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14. A. R. Mahjoub and L. Slama, "Sur le polytope des sous-graphes arêtes-fiables", 9th ROADEF Conference, (February 2008), Clermont-Ferrand, (France).
15. H. Kerivin, M. Lacroix, A. R. Mahjoub, "Le problème de cueillette et livraison préemptif avec un véhicule", 9th ROADEF Conference, (February 2008), Clermont-Ferrand, (France).
16. A. R. Mahjoub and L. Slama, "On the polytope of the (1, k)-survivable network design problem", Proceedings of the International Conference on Nonconvex Programming (NCP 07), (December 2007), Rouen (France).
17. H. Kerivin, M. Lacroix, A. R. Mahjoub, "The single-vehicle preemptive pickup and delivery problem", Proceedings of the International Conference on Nonconvex Programming (NCP 07), (December 2007), Rouen (France).
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33. P. Fouilhoux and A. R. Mahjoub, "An exact model for the constrained multilayer Via-Minimization problem Subgraph problem", 6th Combinatorial Optimization Conférence, (January 2002), Aussois (France) (on invitation only).
34. P. Fouilhoux and A. R. Mahjoub, "Via Minimization and the Bipartite Induced Subgraph problem", ECCO XIV (June 2001), Bonn (Germany).
35. B. Fortz, A. R. Mahjoub, T. McCormick and P. Pesneau, "The 2-edge connected subgraph problem with bounded ring", ECCO XIV (June 2001) Bonn (Germany).
36. A.R. Mahjoub and P. Pesneau, "On the Steiner 2-edge connected subgraph polytope", 6th Symposium on Graphs and Combinatorics (September 2000), Marseille (France).
37. F. Bendali, J. Mailfert and A.R. Mahjoub, "Compositions of graphs and the triangle free subgraph polytope", 6th Internatinal Symposium on Graphs and Combinatorics (September 2000), Marseille (France).
38. H. Kerivin, A.R. Mahjoub, "Survivable Networks and Polyhedra", 17 th International Symposium on mathematical Programming, (August 2000), Atlanta (USA).
39. H. Kerivin, A.R. Mahjoub, "Conception de Réseaux et Polyèdres", 2nd ROADEF Conference (January 1999), Autrans, (France).
40. A.R. Mahjoub and P. Pesneau, "On the Steiner 2-edge connected subgraph polytope", 6th International Conference on Graphs and Combinatorics (September 2000), Marseille (France).
41. M. Didi Biha, H. Kerivin and A.R. Mahjoub, "Steiner trees and polyhedra Combinatorial Optimization 98 (April 1998), Bruxelles (Belgium) .
42. A.R. Mahjoub, C. Nocq, "On the linear relaxation of the 2-node connected subgraph polytope", 16th International Symposium on Mathematical Programming, (August 1997), Lausanne (Switzerland).
43. M. Baïou, F. Barahona and A.R. Mahjoub, "Partition inequalities and the 2-edge connected subgraph problem" 16 th International Symposium on Mathematical Programming (August 1997), Lausanne (Suisse) (it has also presented in Combinatorial Optimization 98 (April 1998) Bruxelles (Belgium).
44. M. Bouchakour and A.R. Mahjoub, "The dominating set problem: Composition of graphs and polyhedra", 5th International Conference on Graphs and Combinatorics (September 1995), Marseille (France).
45. J. Fonlupt and A.R. Mahjoub, " The minimal non-integer extreme points of two-connected subgraph polyhedra" 15th International Symposium on

Mathematical Programming, (August 1994)Ann Arbor (U.S.A.).

46. M. Baiou and A.R. Mahjoub, "The two-edge connected Steiner subgraph polytope of a series-parallel graph", NATO Conference On Polytopes, (July 1993), Toronto (Canada).
47. A. R. Mahjoub, "On two-edge connected subgraphs", Combinatorial Optimization Conference, Oberwolfach (Germany) (January 1993) (on invitation only).
48. A. R. Mahjoub, " On polytopes associated with 2-edge connected graphs", Days on graphs and Combinatorics, (September 1992), Aussois (France).
49. R. Euler and A.R. Mahjoub, "On a composition of independence system by circuit - identification" Eleventh International Symposium on Mathematical Programming, (August 1985), Boston (U.S.A.).
50. M. Conforti, D. Corneil and A.R. Mahjoub, (June 1984), "Ki-cover II : Ki-perfect graphs", Bonn workshop on combinatorial optimization, Bonn, (Germany).
51. J. Fonlupt, A.R. Mahjoub and J.P. Uhry, "Composition of graphs and the bipartite subgraph polytope". Conference on Combinatorial Optimization, (September 1984), St Gallen, (Switzerland). (also presented at: Conference on computational Issues in combinatorial Optimization" (March 1986), Capri, (Italy).
52. A.R. Mahjoub, "Polytope des absorbants dans une classe de graphes à seuil". Third International Symposium on Combinatorics and Graph Theory, (June 1981), Marseille (France).

4. Editorial work

- Associate Editor of **Journal of Combinatorial Optimization** since February 2026.
- Section Editor of **Kuwait Journal of Science** since 2023.
- Co-Editor with Nelson Maculan and Rym M'Hallah (and Executive Editor) of a special issue of **Kuwait Journal of Science** (in progress).
- Co-Editor in Chief of **RAIRO - Operations Research**, January 2018- June 2024.
- Editor in Chief of **RAIRO - Operations Research**, June 2011-December 2018.
- Area Editor of **Computers and Industrial Engineering**, November 2015-January 2021.
- Advisory Editor of **EURO Journal on Computational Optimization**, July 2011-September 2020.
- Associate Editor of **RAIRO - Operations Research**, January 2005-June 2011.
- Co-Editor (with Volker Kaibel, Simge Kucukyavus, Hakan Kutucu) of a **Lectures Notes in Computer Science** (Vol 16613) associated with ISCO 2026).
- Co-Editor (with A. Basu, and J. J. Salazar) of a **Lectures Notes in Computer Science** (Vol 14594) associated with ISCO 2024).
- Co-Editor (with I. Ljubic, F. Barahona and Santanu S. Dey) of a **Lectures Notes in Computer Science** (Vol 13526) associated with ISCO 2022).
- Co-Editor (with A. Basu, M. Fampa, and J. Lee) of a special issue of **Discrete Applied Mathematics** associated with ISCO 2024 (to appear).

- Co-Editor (with I. Ljubic, F. Barahona and Santanu S. Dey) of a special issue of **Discrete Applied Mathematics** associated with ISCO 2022 (Volume 378, 2026).
- Co-Editor (with S. Layeb, I. Kacem and N. Maculan) of a special issue of **Annals of Operations Research**, in relation with TORS 2022. (*TORS is an annual conference of the Tunisian Operations Research Society (TORS).*)
- Co-Editor (with M. Baïou, B. Gendron, O. Günlük) of a **Lectures Notes in Computer Science** (Vol 12173 associated with ISCO 2020).
- Co-Editor (with J. Lee and G. Rinaldi) of a **Lectures Notes in Computer Science** (Vol 10856 associated with ISCO 2018).
- Co-Editor (with J. Lee and G. Rinaldi) of a special issue of **Discrete Applied Mathematics** Associated with ISCO 2018 ((Volume 308, 2022)).
- Co-Editor (with R. Cerulli and S. Fujishige) of a **Lectures Notes in Computer Science** (Vol 9849 associated with ISCO 2016).
- Co-Editor (with S. Fujishige and F. Rendl) of a special issue of **Journal of Combinatorial Optimization** (Vol 36, 2018), associated with ISCO 2016.
- Co-editor (with L. Gouveia, P. Fouilhoux and V. Th. Paschos) of a **Lectures Notes in Computer Science** (Vol 8596, 2014) associated with ISCO 2014.
- Co-editor (with L. Gouveia and A. Lodi) of a special issue of **Discrete Optimization** (Vol 22, 2016), associated with ISCO 2014.
- Co-editor (with D. De Werra and N. Maculan) of a special issue of **Discrete Applied Mathematics** (Vol 164, 2014) associated with ISCO 2010.
- Co-editor (with G. Rinaldi and G. Woeginger) of a special issue of **Mathematical Programming** (Vol 150, 2015) associated with ISCO 2012.
- Co-editor (with N. Maculan and E. Uchoa) of a special issue of **RAIRO-Operations Research** (Vol. 48, N°2, 2014) associated with ISCO 2012.
- Co-Editor (with M. Haouari) of a special issue of **Electronic Notes on Discrete Mathematics**, ENDM (Vol 36, 2010) in relation with ISCO 2010 (ENDM Volume 36 (2010) pages 1-1326).
- Editor of the book « Progress in Combinatorial Optimization », **WILEY-ISTE** (2011).
<http://eu.wiley.com/WileyCDA/WileyTitle/productCd-1848212062.html>
 (This book contains 22 chapters covering the recent developments in combinatorial optimization (published in October 2011)).
- Co-editor (with M. Hifi and I. Kacem) of a special issue of **IJMOR (International Journal of Mathematics and Operations Research)** (IJMOR 4, N°3,2012).
- Co-editor (with M. Haouari) of a special issue of **Electronic Notes on Discrete Mathematics** dedicated to ISCO 2010 (ENDM Volume 36 (2010) pages 1-1326).
- Co-editor (with Jean-François Maurras) of a special issue of **RAIRO-Operations Research** associated with JPOC 2 (RAIRO-OR, Vol 41, N°23, 2007).

5. (Former) Ph.D. Students

- M. Baïou, *Director of Research, CNRS (National Scientific Research Center of France) , LIMOS, Université Clermont-Auvergne, Clermont-Ferrand, France.*
Thesis title:" Le problème du sous graphe 2-arête connexe: Approche polyédrale" [The Steinet 2-edge connected subgraph problem: Polyhedral Approach], December 1996.

M. Baïou thesis has been submitted to the W.A. Tucker price of the Mathematical Programming Society in August 1997.

M. Baïou won in 2003 the Robert Faure price offered by ROADEF (the French Operations Research Society) for young researchers.

- M. Bouchakour, *Senior Consultant at ALTRAN, Information Systems, Paris.*
Thesis title: " I. Composition dans le polytope des absorbants.
II. Un algorithme de coupes pour le problème du flot à coûts fixes"
[I. Compositions in the dominating subgraph polytope.
II. A cutting plane algorithm for the fixed charge network flow problem.],
December 1996.
- M. Didi Biha, *Distinguished Full Professor, Université de Caen, Caen, France.*
Thesis title: "Graphes k-arêtes connexe et polyèdres" [k-edge connected graphs and polyhedra], September 1998.
- H. Kerivin, *Assistant Professor, Université de Clermont, Clermont-Ferrand, France.*
Thesis title: "Réseaux Fiabes et Polyèdres" [Survivable Networks and polyhedra], November 2000.

H. Kerivin won in 2006 the Robert Faure price offered by ROADEF (the French Operations Research Society) for young researchers.

- P. Pesneau, *Assistant Professor, Université de Bordeaux, France.*
Thesis title: "Conception de reseaux 2-connexes avec des contraintes de bornes"
[Design of 2-connected graphs with bound constraints], November 2003.
- Pierre Fouilhoux, *Full Professor, Université Sorbonne Paris Nord, Paris, France.*
Thesis title : "Graphes k-partis et applications aux circuits VLSI" [k-Partite graphs and applications to VLSI circuits], November 2004).

P. Fouilhoux won in 2006 the young researcher price of the city of Clermont-Ferrand, France.

- D. Huygens, *Senior Consultant at OM Partners, Brussels, Belgium.*
Thesis title: Design of Survivable Networks with Bounded-Length Paths »
(Co-Supervised by M. Labbé, Brussels), November 2005.
- Sylvie Borne, *Assistant Professor, Université Paris 13, Paris, France.*
Thesis title : "Dimensionnement et sécurisation de réseaux de télécommunications: Approche polyédrale" [Survivability and routing in telecommunication networks], December 2006 (*With France Telecom*).
- Lise Slama, *General Director BBS, Clermont-Ferrand, France.*
Thesis title : « Conception de Réseaux Fiabes : Séparation et Polyèdres » [Design of Survivable networks : Separation and Polyhedra], November 2008.
- Mathieu Lacroix, *Assistant Professor, Université Paris 13, Paris, France.*

Thesis title : «Le problème de ramassage et livraison préemptif : complexité, modèles et polyèdres » [The preemptive pickup and delivery problem : complexity, models and polyhedra], December 2009, (co-supervised by A. Quilliot and H. Kerivin).

- Ibrahima Diarrassouba, *Associate Professor, Université du Havre, France*.
Thesis title : « Survivable Network Design Problems with High Connectivity Requirements », December 2009.
- Onur Özkök, *Senior Consultant at Applied Materials, USA*.
Thesis title: « Hub and Regenerator Location and Survivable Network Design”, (co-supervised by O. Ekin Karasan and H. Yaman of Bilkent University, December 2010 at Bilkent University, Ankara.
- Sébastien Martin, *Associate Professor, Université de Metz, Metz, France. On leave at Huawei Technologies, Paris, France*.
Thesis title : « Analyse Structurelle des Systèmes Algébro-Différentiels : Complexité, Modèles et Polyèdres » [Structural Analysis of Algebraic-Differential Systems : Complexity, Models and Polyhedra], December 2011, (*prepared within the project ANR PARADE in collaboration with the companies SIEMENS (Toulouse, France) and LMS-IMAGINE (Roanne, France)*).

S. Martin won in 2009 the Best Student Paper Award in CIE 39, Troyes, France.

- Raouia Taktak, *Assistant Professor, Université de Sfax, Sfax, Tunisia*.
Thesis title: « Survivability in Multilayer Networks : Models and Polyhedra », July 2013.
- Amal Benhamiche, *Researcher at Orange-Lab (France-Telecom), Paris, France*.
Thesis title: « Designing optical multi-band networks: polyhedral analysis and algorithms », December 2013 (*With France Telecom*).
- Mohamed Ould Lemine, *General Director, ADIAS, Paris, France*.
Thesis title: « Connaissance Inter-Entreprises et Optimisation Combinatoire » [Inter-Company Knowledge and Combinatorial Optimization], June 2014 (*With ALTARES, Paris*).
- Youcef Magnouche, *Researcher, Huawei Technologies, Paris, France*
Thesis title : « The multi-terminal vertex separator problem : Complexity, Polyhedra and Algorithms”, June 2017.
- Meriem Mahjoub, *Consultant at Vaisala, Paris, France*.
Thesis title: The survivable network design problem with high node connectivity constraints: Polyhedra and algorithms, December 2017.
- Mohamed Khalil Labidi, *Consultant at CREOS, Luxembourg*.
Thesis title: Parallelization of Hybrid Metaheuristics for Combinatorial Optimization Problems, September 2018.

- Meriem Ben Salem, *Assistant Professor, Université ESPRIT, Tunis, Tunisia.*
Thesis titre « Méthodes d'optimisation exactes et heuristiques pour des variantes du problème du sac à dos ».
[Exact and heuristic optimization methods for variants of the knapsack problem]
June 2017.
- Mohamed Yassine Naghmouchi, *Senior Quantum Algorithm Developer – Optimization, PASQAL, Paris, France.*
Thesis titre, « Security Management in Complex Systems : Models, Polyhedra and Algorithms », (June 2019).
- Pedro Liguori, *Principal Data Scientist at BCG X, Sao Paulo, Brazil.*
Thesis title : « Polyhedral approaches for some location problems ».
(June 2019).
- Youssef Hadhbi, *Researcher at Orange Lab, Paris, France.*
Thesis title : “The Constrained and Spectrum Assignment Problem: Polyhedral Analysis and Algorithms”, (July 2022).
- Isma Bentoumi, *Consultant, Paris*
Thesis title : « The Multicommodity Flow Blocker Problem : Polyhedral Analysis and Algorithms». (July 2024).
- Charles Nourry, *Consultant at Alterys, Paris, France.*
Thesis title: “On some network design problems with budget constraints”. (June 2025)

HDR (Habilitation)

- Imed Kacem, *Full Professor, Université de Metz, Metz, France.*
Habilitation title : « Contribution à la résolution des problèmes d'ordonnancement : approximation, approches hybrides et approches exactes »
[Contributions to the resolution of scheduling problems : approximation, hybrid approaches and exact approaches », November 2007.
- Mohamed Didi Biha, *Full Professor, Université de Cean, Cean, France.*
Habilitation title, “Contributions à l'approche polyédrale pour quelques problèmes d'optimisation combinatoire» [Contributions to the polyhedral approach for some combinatorial optimization problems], December 2008.
- Denis Cornaz, *Associate Professor, University Paris-Dauphine, Paris, France.*
Habilitation title: “Structures and Duality in Combinatorial Programming”, December 2013.
- Jean Mailfert, *Associate Professor, Université de Clermont Auvergne, Clermont-Ferrand, France,*
Habilitation title: « Sur quelques problèmes combinatoires liés aux réseaux »
[On some combinatorial problems related to networks], June 2015.

- Pierre Fouilhoux, *Full Professor, Université Sorbonne Paris Nord, Paris, France*.
Habilitation title : “Linear formulations and exact algorithms for combinatorial optimization problems”, October 2018.
- Hassène Aissi, *Associate Professor, Université Paris-Dauphine, Paris, France*,
Habilitation title : « Multiobjective, parametric and interdiction extensions of combinatorial optimization problems: algorithms and structural results », February 2022.
- Ibrahima Diarrassouba, *Associate Professor, Université Le Havre, France*,
Habilitation title : « ”, May 2025.

Master Degree

- Hervé Kerivin , "Polyhedral study of the 3 edge-connected subgraph problem", September 1995.
- Pierre Pesneau, "The 2-edge connected subgraph problem on Halin graphs, September 1999.
- Pierre Fouilhoux, "Via minimization and the bipartite subgraph problem", September 2000.
- Sylvie Borne, "Study of some survivable telecommunication networks", September 2002 (*With France-Télécom*).
- Ibrahima Diarrassouba, "Survivable k-connected networks", June 2004).
- Mathieu Lacroix, "A routing problem with reloads", June 2005.
- Raouia Taktak, “Multilayer networks in telecommunications”, September 2008 (*With France-Télécom*).
- Amal Benhamiche, “Models for transport optical networks”, September 2009 (*With France-Télécom*).
- Halim Meziane, “The separator problem”, September 2010.
- Lamia Zane, « Graph partitioning », September 2011 (*With FlexRAS Technologies, Paris*).
- Lounes Bentaha, « Dvelopment of a routing tool in multi-FBGA systems », September 2011 (*With FlexRAS Technologies, Paris*).
- Lyes Abdelli, « The minimal 2-edge conneced subgraph», September 2012.
- Othman Moumni Abdou, « Heuristic and exact solution methods for Time Dependent Vehicle Routing Problem with Time Windows - Applications to

Orange intervention workforce management », September 2012 (*With Orange Lab, France Télécom*).

- Yusra Tourki, « Maintenance Planning Optimization », September 2013 (*With Air Liquide, Paris*).
- Guillaume Vandroyen, « Optimization and Security of Telecommunication Networks», September 2013 (*With Orange Lab, France Télécom*).
- Yassine Naghmouchi, « Optimization of energy consumption in telecommunications networks», September 2014 (*with Orange-Lab, France Télécom*).
- Samira Bouadi, « Study of a traffic forecasting problem », September 2014 (*with Aximum, Produits Electroniques, Paris*).
- Massipssa Kerrache, “Optimization of Security transactions: Night Time Settlement”, September 2016 (*with Banque de France, Paris*).
- Walid Ibrahim, “Design and development of an innovative solution for optimizing the delivery of partner content in a mobile environment”, September 2016 (*with Orange-Lab France Télécom, Paris*).
- Hajer Ben Fekih, “Optimal allocation of radio resources in a heterogeneous access network”, September 2017 (*with Orange-Lab France Télécom, Paris*).
- Maria El Hallaoui, « Design of survivable networks with budget constraints » Septembre 2019.
- Charles Nourry, « On some telecommunication problems», Septembre 2019.
- Samuel Gbeya, « The two node connected subgraph problem » , (September 2021)

6. Projects :

- Project with Huawei, Paris, France (Isma Bentoumi thesis) (2019-2022).
- Project with ADIAS, Paris, France (Hajer Ben Fekih thesis) (2018-2021).
- Project with Bilkent University (Ankara, Turkey) funded by TUBITAK, the Scientific and Technological Research Council of Turkey, April-September 2016. (*visited Bilkent University for six months within this project*).
- Project with Orange-Lab France Telecom (Yassine Naghmouchi thesis) (2014-2017).
- Project with Gaspard Monge Program for Optimization and operations research (PGMO) (2014-2017) and (2018-2021).
- Project with ALTARES, Paris, 2011-2014 (Mohamed Ould Mohamed Lemine thesis).
- Project with Orange-Lab, France Télécom, 2009-2012 (Amel Benhamiche thesis).
- Project GDR-RO with France Telecom and Université Paris Nord, 2009-2010.
- Project ANR (French National Agency for Research) for 3 years with: INRIA, Université de Lyon 1, and the companies SIEMENS (in Toulouse) and LMS-IMAGINE (in Roanne). (Sébastien

Martin thesis) 2007-2010.

- Project CMCU-PAI UTIQUE, France-Tunisia, with Université de Sousse (Habib Youssef), (2007-2009)
- Project PAI BOSPHORE, France-Turkey, with Bilkent University (Hande Yaman, Oya Ekin Karasan), Ankara, 2005- 07
- Project with France Telecom (Bernard Liau and Eric Gourdin) (Sylvie Borne thesis).
- Project CNRS-FNRS, France-Belgium, with Free University of Brussels (Martine Labbé), 2003-06.
- Project PAI TOURNESOL, France-Belgium, with Free University of Brussels (Martine Labbé), 1999-02.

7. Conferences Organizing and Scientific Committee member

- Co-initiator and Co-organizer and Co-Chair (with M. Haouari) of « International Symposium on Combinatorial Optimization (ISCO)», Hammamet, Tunisia, March 24-26, 2010, and of the Spring School « Cutting plane methods for mixed integer programming » Hammamet, Tunisia, March 22-23, 2010.
- Co-organizer and Co-Chair (with Y. Milis) of « International Symposium on Combinatorial Optimization (ISCO 2012)», Athens, April 19-21, 2012, and of the Spring School « Approximation algorithms», Athens, April 18-19, 2012.
- Co-Organizer and Co-Chair (with L. Gouveia) of « International Symposium on Combinatorial Optimization (ISCO 2014)», Lisbon, March 5-7, 2014, and of the Spring School « Stochastic Combinatorial Optimization», Lisbon, Portugal, March 3-4 , 2014.
- Co-organizer and Co-Chair (with R. Cerulli and S. Fujishige) of « International Symposium on Combinatorial Optimization (ISCO 2016)», Vietri, Italy, May 18-20, 2016, and of the Spring School « Extended formulations in combinatorial optimization», Vietri, Italy, May 16-17, 2016.
- Co-organizer and Co-Chair (with A. El Afia, J. Lee, and G. Rinaldi) of « International Symposium on Combinatorial Optimization (ISCO 2018)», Marrakesh, Morocco, April 11-13, 2018, and of the Spring School « Advanced Mixed Integer Programming Formulation Techniques», Marrakech, Morocco, April 9-10, 2018.
- Co-organizer and Co-Chair (with M. Baiou, B. Gendron, O. Günlük) of « International Symposium on Combinatorial Optimization (ISCO 2020)», Montreal, Canada, May 2020 (online).
- Co-organizer and Co-Chair (with I. Ljubic, F. Barahona, and S. S. Dey) of « International Symposium on Combinatorial Optimization (ISCO 2022)», Paris, France, May 2022 (online).
- Co-organizer and Co-Chair (with A. Basu and J. J. Salazar) of « International

Symposium on Combinatorial Optimization (ISCO 2024)», Tenerife, Spain, May 2024.

- Co-organizer and Co-Chair (with S. Kucukyavus, V. Kaibel and H. Kutucu) of « International Symposium on Combinatorial Optimization (ISCO 2026)», Kusadasi, Izmir, Turkey, May 2026.
- General Co-Chair of the IEEE - 6th International Conference on Control, Decision and Information Technologies (IEEE-CoDIT 2019), April 23-26, 2019, Paris, France.
- Co-Chair of the Scientific Committee of The joint Tunisian Decision Aid Society and the Tunisian Operational Research Society (TDAS/TORS) Conference, July 8-10, 2019, Djerba, Tunisia.
- Member of the Scientific Committee of the International Conference on Learning and Optimization Algorithms : Theory and Applications (LOPAL'2018), mai 2-5, 2018, Rabat, Morocco.
- Member of the Scientific Committee of The 2018 International Conference of the African Federation of Operational Research Societies (AFROS 2018), July 2-4, 2018, Tunis, Tunisia.
- Member of the Scientific Committee of the 12th International Conference on Challenges in Industrial Engineering and Operations Management, September 11-12, 2018, Ankara, Turkey.
- Member of the Scientific Committee of The 2nd International Conference on Cognitive Analytics Management (CAM 2018), november 28-december 1, 2018, Beyrouth, Libanon.
- Member of the Scientific Committee of the conference “Design of Reliable Communication Networks (DRCN 2016), Paris, France, March 15-17, 2016.
- Member of the Scientific Committee of the conference “Colloque d’Optimisation et Systèmes d’Informations” COSI 2012, Tlemcen, Algeria, May 12-15, 2012; COSI 2014, June 8-10, 2014; Béjaia, Algeria (also President of the Committee); COSI 2015, June 1-3, 2015, Oran, Algeria; COSI 2016, May 30-June 1, 2016, Sétif 1, Algeria; COSI 2017, May 14-17, Bouira, Algeria.
- Co-chair of the Scientific Committee of « International Conference on Control Decision and Information Technologies (IEEE CoDIT’17), April 5-7, 2017, Barcelona, Spain.
- Member of the Scientific Committee of « International Conference on Control Decision and Information Technologies (IEEE CoDIT’14), novembre 2014, Metz, France, and (IEEE CoDIT’16), April 2016, Saint Julian’s, Malta.
- Member of the Scientific Committee of « Computers and Industrial Engineering

45 (CIE 45), October 2015, Metz, France.

- Member of the Scientific Committee of “Operations Research Practice in Africa » ORPA'2015, April 20-21, 2015, Algiers, Algeria.
- Member of the Scientific Committee of the conference “Modelling, Computation and Optimization in Information Systems and Management Sciences » (MCO 2015), May 14-16, Metz, France.
- Member of the Scientific Committee of the conference ICORES (International Conference on Operations Research and Enterprise Systems): ICORES 2014, January 10-12, 2014, Lisbon, Portugal; ICORES 2017, February 23-25, 2017, Porto, Portugal.
- Membre of the Scientific Committee of the International Workshop on Discrete Structures, March 5-7, 2014, Islamabad, Pakistan.
- Member of the Scientific Committee of International Symposium on Operations Research (ISRO 2011), Alger, Algeria, May 30-June 2, 2011.
- Co-organizer of the Spring School of the group “Polyhedra and Combinatorial Optimization” (POC) in 2007, 2008, 2009, 2011, 2013 and 2015.
- Co-organizer of the Spring School of the group “Polyhedra and Combinatorial Optimization” (POC) in 2007, 2008, 2009, 2011, 2013 and 2015.
- Member of the Scientific Committee of International Network Optimization Conference (INOC 2011), Hamburg, Allemagne, 13-16 juin 2011.
- Co-organizer of the Spring School of the group “Polyhedra and Combinatorial Optimization” (POC) in 2007, 2008, 2009, 2011, 2013 and 2015.
- Co-organizer of the Spring School of the group “Polyhedra and Combinatorial Optimization” (POC) in 2007, 2008, 2009, 2011, 2013 and 2015.
- Co-organiser of the international workshop « Pretty Structures, existential polytime, polyhedral combinatorics », April 7, 8, & 9, 2009, Paris, in honor of Jacques Edmonds.
- Co-organizer of the 9th Symposium of ROADEF (French Society of Operations Research), Clermont-Ferrand, February 25-27, 2008.
- Member of the Scientific Committee of:
 - 5th ROADEF Symposium, Avignon, 26-28 February 2003,
 - 6th ROADEF Symposium, Tours, 14-16 February 2005,
 - 7th ROADEF Symposium, Lille, 6-8 February 2006,
 - 8th ROADEF Symposium, Grenoble, 20-23 February 2007,
 - 11th ROADEF Symposium, Toulouse, 24-26 February 2010,

12th ROADEF Symposium, St Etienne, 2-4 February 2011,
 13th ROADEF Symposium, Angers, 11-13 April 2012.
 14th ROADEF Symposium, Troyes, 13-15 February 2013.
 15th ROADEF Symposium, Bordeaux, 26-28 February 2014,
 16th ROADEF Symposium, Marseille, 25-27 February 2015.
 17th ROADEF Symposium, Compiègne, 10-12 February 2016.
 18th ROADEF Symposium, Metz, 22-24 February 2017.
 19th ROADEF Symposium, Lorient 21-23 February 2018.
 20th ROADEF Symposium, Le Havre 19-21 February 2019.

- Member of the Scientific Committee of INOC 2003 (International Network Optimization Conference), Evry (France), October 27-28, 2003.
- Initiator and organizer of the first « Journées Polyèdres et Optimisation Combinatoire (JPOC) » (Days of Polyhedra and Combinatorial Optimization), Clermont-Ferrand, June 19-20, 2003.
- Co-organizer of the following JPOC workshops and the related Spring Schools :
 - JPOC 2, Marseille, June 2-3, 2005.
 - JPOC3, Avignon, June 1-2, 2006.
 - JPOC4, Evry, May 30-31 and June 1st, 2007, and Spring School: Polyhedral Approaches, May 29-30, 2007.
 - JPOC 5, Rouen, June 4-6, 2008, and Spring School: Valid Inequalities and Mixed Integer Programming, June 2-4, 2008.
 - JPOC 6, Bordeaux, June 12-14, 2009, and Spring School: Decomposition Techniques in Combinatorial Optimization, June 8-10, 2009.
 - JPOC7, Valenciennes, June 8-10, 2011, and Spring School: Supply Chain and Polyhedral Approaches, June 6-8, 2011.
 - JPOC8, Clermont-Ferrand, June 24-26, 2013, and the Spring School: Submodular Functions, June 24-26, 2013.
 - JPOC9, Le Havre, June 24-26, 2015, and the Spring School: Polyhedral Approaches and Columns Generation: Theory, Applications and Recent Advances, June 22-24, 2015.
 - JPOC10, Paris, June 14-16, 2017, and the Spring School: Polyhedral Semidefinite programming and combinatorial optimization , June 12-13, 2017.
 - JPOC11, Metz, June 26-28, 2019, and the Spring School: Ordonnancement et Approximation , June 24-25, 2019 .
 - JPOC12 (online), Paris, June 24-25, 2021, and the Spring School: MINLP and Bilevel Problems , June 22-23, 2021.
 - JPOC13, Clermont-Ferrand, June 28-30, 2023, and the Spring School: Combinatorial Optimization and Machine Learning, June 26-28, 2023.
 - JPOC 14, Caen, June 12-13, 2025, and the Spring School: Programmation semi-définie et optimisation conique, June 10-11, 2026
- Member of the Scientific Committee of the 4th Days of group MODE (MODE is the french group « Mathématiques de l'Optimisation et de la DEcision » of the french Society SMAI (Société des Mathématiques Appliquées et Industrielles.)

- [Society of Industrial and Applied Mathematics], Limoges, March 1996.
- Member of the scientific committee of conference INOC 2003 (International Network Optimization Conference), Evry (France), 27-28 October 2003.
- Member of the Scientific Committee of the 3rd Days of group MODE, Brest, March 1995.
- Co-organizer of the 3rd Days of group MODE, Brest, March 23-25, 1995.

8. Visiting Professor

- Qaboos University, Oman, January-May 2020
- Kuwait University, Kuwait, April 2019.
- University of Montreal, (Canada), December 2018.
- University of M'Sila, (Algeria), November 2018.
- University Mohamed VI, ENSIAS, Rabat, (Morocco), September 2017.
- Bilkent University, Ankara, Turkey (April-September 2016).
- Université des Sciences, de Technologie et de Médecine, Noukchott, Mauritania (January 2016).
- Université Farhat Abbas, Sétif, Algeria (October 2015).
- Sultan Qaboos University, Muscat, (Oman), February-June 2015.
- Universidade Federal of Fluminense, Niteroi, Rio de Janeiro (Brasil), April 2014.
- Sauder School of Business, University of British Columbia, Vancouver (Canada), April-may 2013.
- GERAD, University of Montreal (Canada), September 2011.
- Université de Sousse (Tunisia), December 2010.
- Research Institute of Mathematical Science (RIMS), Kyoto University (Japan), June 2010.
- Université de Sousse (Tunisia), February 2009.
- Bilkent University, Ankara, March 2008.
- Université de Sousse (Tunisia), July 2007.

- Lisbon University, April 2007.
- Bilkent University, Ankara, October 2006.
- Ecole Polytechnique et Fédérale de Lausanne, April 2004.
- Lisbon University, June 2004.
- GOM, Free University of Brussels, Septembre 2003-June 2004.
- Department of Mathematical Science, Brunel University, London, August 2003.
- SMG, Free University of Brussels, January 2003.
- SMG, Free University of Brussels, December 2001.
- PUC University, Rio de Janeiro, Brésil, August 2001.
- SMG, Free University of Brussels, November 2000.
- SMG, Free University of Brussels, November 2000.
- Laboratoire GERAD, Montreal, Canada, August 1999.
- Santiago University, Chili, April 1999.
- SMG, Université Libre de Bruxelles, February 1999.
- Thomas J. Watson Research Center, IBM, New York, August 1996.
- Institute IASI, Rome Italie, Decembre 1994.
- Thomas J. Watson Research Center, IBM, New York, August 1994.
- Laboratoire ARTEMIS, Institut IMAG, Université Joseph Fourier, Grenoble, France
, February-March 1991.
- Laboratoire ARTEMIS, IMAG, Université Joseph Fourier, Grenoble,
July 1990.
- Combinatoire and Optimisation Department, University of Waterloo,
Canada, April 1990.
- Laboratoire ARTEMIS, IMAG, Université Joseph Fourier, Grenoble, France
,
September 1988.
- Discrete Mathematics Institute, University of Bonn, Bonn (Germany), August
1988.

9. Invited speaker

- *ISIA 18, M'sila, Algeria, November 2018 (plenary speaker).*
- *ROADEF 18, Metz, France, February 2017 (plenary speaker).*
- *CIE 45, Metz, France, October 2015 (plenary speaker).*
- *ORPA'2015, Algiers, Algeria, April 2015 (plenary speaker)*
- *CoTID'14, Metz, France, November 2014 (plenary speaker).*
- *Operations Research Workshop, Tizi Ouzou, Algeria, October 2013 (plenary speaker).*
- *Optimization Days, Oran, Algeria, November 2012 (plenary speaker).*
- *COSI, Guelma, Algeria, April 2011 (plenary speaker).*
- *8th Network Optimization Days, Paris, October 2011.*
- *International Conference on Multi Objective Programming and Goal Programming, Sousse, Tunisia, May 2010 (plenary speaker).*
- *Winter School on Network Optimization, Lisbon, January 2009.*
- *Computers and Industrial Engineering 39, Troyes, July 2009 (IEEE Conference) (plenary speaker).*
- *Mathematical Programming and Operations Research Days, March 2008, Paris, France.*
- *Mathematical Programming Days, April 2004, Paris, France.*
- *INOC2003 (plenary speaker), October 2003 Evry, France (plenary speaker).*
- *Combinatorial Optimization Workshop, November 2002, Oberwolfach, Germany.*
- *Sharpest Cut, Combinatorial Optimization Workshop on honor of Manfred Padberg on the occasion of his 60th birthday, Berlin, October 2001.*
- *17th International Symposium on Mathematical Programming, August 2000). Atlanta, Georgia, USA.*
- *Network Reliability Workshop , March 1997, Université d'Amiens, France.*
- *16 th International Symposium on Mathematical Programming, August 1997, Lausanne, Switzerland, (also invited to organize a session in the symposium).*

- *Network Reliability Workshop , March 1997, Université d'Amiens, France.*
- *First Days of MODE, SMAI, November 1992, Perpignan , France.*
- *NATO Conference on "POLYTOPES: Abstract, Convex and Computational August 1993, Toronto, Canada.*
- *Combinatorial Optimization Conference, January 1993, Oberwolfach, Germany.*
- *Conference on Computational Issues in Combinatorial Optimization, March 1986, Capri, Italy.*

(I have also been invited several times for giving seminars in different institutions in France and abroad).

10. Member of

- Institute for Operations Research and the Managements Sciences (INFORMS)
- Mathematical Programming Society (MPS)
- Society of Industrial Applied Mathematics (SIAM)
- Société Française de Recherche Opérationnelle et Aide à la Décision (French Society of Operations Research) (ROADEF)

11. Refereeing

Ph.D theses

(All the theses are in France except those for which the country is precised)

- Maria José F. P. Trigueiros, Leibniz, Grenoble
- Ahmed Hadjar, Leibniz, Grenoble
- Stéphane Bulteau, IRISA, Rennes
- Vincent Letruit, Leibniz, Grenoble
- Viet Nguyen, LIF, Marseille
- Eric Tannier, Leibniz, Grenoble
- Yann Kieffer, Leibniz, Grenoble
- Sonia Haddad, LIF, Marseille
- Hande Yaman, SMG, Université Libre de Bruxelles, (Belgium)
- Eric Duchenne, LAMIH, ROI, Valenciennes,
- José Neto, INT, Evry, Paris,
- Renaud Sirdey, Campiègne (et Nortel),
- Tarek Belgacem, Sorbone, Paris 1,
- Alexandre Skoda, Université Pierre&Marie Curie, Paris,
- Ibrahim Mamane Souley, LIP6, Université Pierre&Marie Curie, Paris,
- Mohammadreza Ghaemi, Université Pierre&Marie Curie, Paris,
- Hacène Ouzia, LIP6, LIP6, Université Pierre&Marie Curie, Paris,
- Toufik Saadi, Sorbone, Paris 1,

- Nora Touati, LIPN, Paris 13,
- Roumen Nedev, LIF, Marseille
- Thanh Hai Nguyen, LIF, Marseille
- Jean-Christophe Gay, LIMOS, Clermont-Ferrand
- Jorge Aguera, Laboratoire de Maths, Université de Grenoble
- Djelloul Mameri, LIMOS, Clermont-Ferrand
- Zakharie Ales, Rouens
- Rahimeh Monemi, LIMOS, Clermont-Ferrand
- Ndèye Fatma Ndiaye, LMAH, Le Havre
- Mousaab Bouafia, Université Sétif 1 (Algeria)
- Sonia Chahdoura, Université Sfax (Tunisia)
- Omar Foutlane, GERAD, Montreal (Canada)
- Rafael Colares, LIMOS, Université Clermont Auvergne, Clermont-Ferrand
- Placide Nduwayo, Université Polytechnique Hauts-de-France, Valenciennes
- Etienne de Gastines, INSA, Rouen Normandie.

Habilitations:

- Olivier Goldschmit, Leibniz, Grenoble
- Alain Faye, CEDRIC, CNAM, Paris
- Virginie Gabrel, LAMSADE, Paris
- Yann Vaxes, LIF, Marseille
- Walid Ben Ameer, Evry
- Imed Kacem, UTT, Troyes
- Arnaud Pêcher, Labri, Bordeaux1.
- Gautier Stauffer, Laboratoire de Maths, Bordeaux 1
- Serigne Gueye, LIA-CERI, Avignon
- Mohamed Barkaoui, Bizerte, Tunisia.

I have also been examiner for 20 other Ph.D. and Habilitation theses.

Journals :

I am regularly solicited to referee papers for the following journals:

- Mathematical Programming
- Mathematics of Operations Research
- Discrete Mathematics
- Informs Journal on Computing
- Discrete Applied Mathematics
- SIAM Journal on Discrete Mathematics
- SIAM Journal on Optimization.
- Networks
- European Journal of Combinatorics
- Annals of Operations Research
- Operations Research Letters
- Combinatorica
- Management Science
- Journal of Combinatorial Optimization.

- RAIRO-Operations Research
- Mathematical Methods of Operations Research
- European Journal of Operations Research
- European Journal of Industrial Engineering
- Computer of Industrial Engineering
- 4 OR
- Annals of Telecommunication

12. Further Professional Services and expertises

- Referee for IPCO, INOC, ISCO and other conferences.
- Referee for ANR projects (average 2 a year)
- Referee for projects of FNRS (Fund for Scientific Research), Belgium.
- Referee for ECOS projects (Projects between France and Argentine - Chili - Uruguay), France.
- Referee for projects (Chairs) for HEC-Montreal, Canada.
- Referee for Professor Promotion for Bilkent University.
- President of a Jury for a Chair in Telecommunications, Ecole Polytechnique de Montréal, October 2004.
- Referee for projects of Austrian Science Fund (in 2011).
- Referee for projects of FONDECYT (National Fund for Scientific & Technological Development), Santiago, Chili) (2011).
- Member of the AERES Committee for the evaluation of the laboratories of Mathematics and Optimization in Le Havre and Rouen, France (2011).
- Member of the AERES Committee for the evaluation of Laboratory MASS (Statistics, Algorithmic, Modelization and Multidisciplinarity) of Université Paris 1, France (2012).

13. Polyhedra and Combinatorial Optimization Group (POC Group)

In 2006, I created the French working group Polyhedra and Combinatorial Optimization (POC) of the GDR RO (Working Group in Operations Research in France). The POC group aims at promoting in France polyhedral methods in combinatorial optimization. These have proved powerful to formulate, analyze and solve difficult combinatorial optimization problems of large sizes. The POC group organizes every two years the polyhedra and Combinatorial Optimization Days (JPOC) which I initiated in 2003 in Clermont-Ferrand. This year we celebrate the 20 years of the JPOCs. In addition to these days, the POC group also organizes spring schools and sessions in conferences as ROADEF conference. The group also co-organizes and supervises the International Conference ISCO (International Symposium in Combinatorial Optimization) which I co-initiated in 2010 in Hammamet, Tunisia. ISCO is now a well established international conference. A special volume of *Lecture Notes on Computer Sciences* is associated with each edition of ISCO. Also special issues of rank one journals (like *Mathematical Programming*, *Discrete Applied Mathematics*, *Discrete Optimization*) are also dedicated to the conference. I supervise all the activities of the group. For more information see <http://www.lamsade.dauphine.fr/~poc/spip.php?rubrique3>.

D. Teaching

Courses taught : I taught courses in operations research, mathematical programming, combinatorial optimization, graph theory, computer sciences, operations management, applied mathematics and probability and statistics in different levels.

First Cycle (1st and 2nd levels):

1) Linear Algebra and Calculus:

- DEUG (1st year level) (1984-1985)⁽¹⁾, (2016-2017)⁽⁷⁾

2) Computer Science:

- DEUG (1st year level) (1991-1993)⁽⁴⁾

Second Cycle (3rd and 4th levels):

3) Compilation and language theory:

Master degree (4th year level) (1991-1998)⁽⁴⁾

4) Algorithmic and data structure

- Licence (3rd year level) (1998-2000)⁽⁵⁾

5) Optimization methods in computer science:

Master degree (4th year level) (1996-1998)⁽⁴⁾

6) Network optimization and graphs:

- ENSIMAG (1980-1982)⁽²⁾,

- Master Operations Research (4th level) (1987-1990)⁽³⁾,

- Master Math engineering (4th level) (1995-98)⁽⁴⁾

- Licence (2000-2007)⁽⁵⁾

- Licence MIAGE (2007-2008)⁽⁶⁾

7) Applied mathematics:

- Master degree (4th level) (1991-1996)⁽⁴⁾

(1) Université des Sciences Sociales de Grenoble, France.

(2) Ecole Nationale Supérieure d'Informatique et de Mathématiques Appliquées de Grenoble, France.

(3) King Saud University, Riyadh, Saudi Arabia.

(4) Université de Bretagne Occidentale, Brest, France.

(5) Université Blaise Pascal, Clermont-Ferrand, France

(6) Université Paris-Dauphine, France.

(7) Sultan Qaboos University

(8) Kuwait University

8) Probability and Statistics

- Licence (3rd level) (1991-1998)⁽⁴⁾, (2004-2007)⁽⁵⁾, (2017-)⁽⁶⁾
- (2021)⁽⁸⁾

9) Numerical methods:

- Master degree (4th level) (1996-1998) ⁽⁴⁾

10) Linear programming:

- 2nd level (1979-1985)⁽¹⁾
- ENSIMAG (1980-1982) ⁽²⁾
- Licence of Operations Research (3rd level) (1988-1989) ⁽³⁾ (2021,2023)⁽⁸⁾
- Master degree (4th level) (1995-1998)⁽⁴⁾, (2015-2017)⁽⁶⁾
- Licence of Computer Science (1998)-(1999)⁽⁵⁾
- 1st year of the CUST (Centre Universitaire de Science et Technologie) (1998)-
(1999)⁽⁵⁾
- Master degree in social science (4th level) (2001)-(2007)⁽⁵⁾

11) Modelization

- Licence of Operations Research (1986-1991) ⁽³⁾

12) Combinatorial Optimization :

- ENSIMAG (1980-1982)⁽²⁾
- Master of Operation Research (4th level) (1987-1990)⁽³⁾
- Master of Computer Sciences (4th level) (1998)-(2007)⁽⁵⁾
- Master of Computer Sciences (4th level) (2015-2017)⁽⁶⁾

13) Stochastic Processes :

- Master of Statistics (4th level) (1986-1987) ⁽³⁾

14) Nonlinear programming :

- Master of Operations Research (4th level) (1986-1987)⁽²⁾

15) Optimization:

- Licence of Operations Research (1986)-(1989)⁽³⁾
- Licence of Computer Sciences (1998-2000)⁽⁵⁾
- Master of Operations Management & Business Statistics (4th level) (2015)
Sultan Qaboos University, Muscat, Oman.

- 4th level (2022-2025-2026) ⁽⁸⁾

16) Mathematical programming in finance

Master degree (4th level) (2007-2014)⁽⁶⁾

Graduate level (Master2, 5th level):

17) Combinatorial Optimization

- Master of Operation Research (5th level) (1989-91)⁽³⁾
- Master of Computer Science (5th level) (1998-2006)⁽⁵⁾
- Master of Statistics and Operations Research (5th level) (2022)⁽⁸⁾

18) Foundation of Operations Research

- Master of Statistics and Operations Research (5th level) (2022,2023)⁽⁸⁾

19) Mathematical programming

- Master of Operations Research and Optimization (MODO) (5th level) since (2007-2022)⁽⁶⁾

20) Network flows

- Master of Computer Science (5th level) (1992-1998)⁽⁴⁾

21) Applied combinatorial optimization

- Master of Computer Science (5th level) (1992-1993)⁽⁴⁾

22) Optimization and Decision Aid

- Master of Computer Science (5th level) (1999-2007)⁽⁵⁾.

23) Applications of Operations research

Master of Computer Science (5th level) since 2007⁽⁶⁾

24) Optimization in Finance

Master of Computer Science and Finance (5th level) since 2010⁽⁶⁾

25) Operations Management

MBA (6th level) (20014-2015)⁽⁷⁾