Curriculum vitae of Dritan Nace

PERSONAL DETAILS

Full name and title: Prof. Dritan Nace
School/Institute: University of Technology of Compiègne, France.
Title of current appointment: Professor in Optimization at Computing Science department.

Born in Beijing, China, on October 4, 1967.
Married, two children, French, Albanian.

APPOITMENTS HELD

1. September 2008 – to date: Full professor at *University of Technology of Compiegne, France*.
2. September 1998 – August 2008: Associate professor at *University of Technology of Compiegne, France*.
3. August 1997 – September 1998: Research Engineer in R&D French Telecommunication Centre, (CNET).
4. September 1991- august 1992: assistant professor in mathematics at *University of Tirana*.

EDUCATION/QUALIFICATION

- *Habilitated in Computing Science (in French: Habilitation à Diriger des Recherches).* Title "Network optimisation: max-min fairness and network dimensioning", July 2006, *University of Technology of Compiegne, France.*
- *Ph.D. degree in Computing Science.* Title "Distributed rerouting in telecommunications networks" March 1997, *University of Technology of Compiegne*.
- *Masters degree in Computing Science* at *University of Technology of Compiegne, September 1993*.
- *Mathematician degree, University of Tirana, Faculty of Natural Sciences, 1991*.

RESEARCH: Operations research, optimization and networks

- Network design, Robust optimization, Max-min fairness, Combinatorial Optimization, etc.

Ph.D. STUDENT SUPERVISION

- 19 PhD supervised students and 3 PhD ongoing supervision.
- Three of my PhD Students have received the prize of the best thesis in University of Technology of Compiegne (Renaud Sirdey, Olivier Klopfentein and Yoann Fouquet).
- Best PhD in Computer Science in France for Olivier Klopfenstein.

NATIONAL AND INTERNATIONAL RECOGNITION

- Invited professor at Polytechnic University of Warsaw, may 2011, April 2017, December 2018, as well as short invited stays in University of Michigan in march 2007, Laboratory

GERAD in Montreal 2009, Enchede (University of Twente) in 2013, in Polytechnic University of Tirana regular stays one or two weeks/year from 2010 to date, University of Genova one week in October 2017, and October 2018.

- Best paper award in RNDM 2013, RNDM 2017 and 3PGCIC 2013.
- Manuscript Peer Reviewer for journals like (Discrete Applied Mathematics, SIAM Optimization, Annals of Operations Research, Computers and OR, EJOR, Information Sciences Journal, IEEE Transactions on Networking, Optical Switching and Networking, EURO Journal on Computational Optimization, International Journal of Grid and Utility Computing, Adhoc Networks, International Transactions on OR), and member of numerous Program committees (International Conference on Research, Innovation and Vision for the Future in computing & communications technologies, (RIVF 2002, 2003, 2004, 2005, 2009, 2010), International Conference on Research in Air Transportation (ICRAT 2004,2010), conference Design Reliable Communication Networks (DRCN'2007,2009,2014,2016), conference Operations and Management in IP-based networks (IPOM'2008), International Workshop on Optical Networks (IWON2009) ICUMT'2009, RNDM 2011-2019, MOPAS 2010, Networks 2008 - 2018, INOC 2003-2021, Balkor 2012-2018, BalkanCom 2017-2021, and others like ROADEF, NBIS, BWWCA, 3CPGCIC etc.).
- Member of editorial board of IJGUC and co-editor for special numbers as Journal of Applied Mathematics, on Max-Min Fairness, in 2014.
- Regular member of selection committees in other Universities in France.

ADMINSTRATIVE AND ELECTIVE DUTIES

- Elected member of different bodies of the University (currently member of the laboratory council) and former responsible of "ICT apprenticeships" leading to a Compiègne University of Technology engineering diploma (speciality ICT).
- Director of Master in Computer Science at Compiègne University of Technology from 2017 and responsible of speciality "Optimization and Machine Learning".

Industrial collaboration

15 industrial contracts and a close collaboration with companies like Orange Labs, Lyonnaise des Eaux, ASIS, Savoye, CEA, Eurocontrol, Sanofi-Aventis, SNCF, etc. leading also to financing of 15 of my PhD students.

Expertise:

Expert for the National Science Centre (Narodowe Centrum Nauki – NCN), Poland, since 2015.

Expert for ANR (Agence National de Recherche), France

Expert for ANRT (Association National Recherche Technologie), France.

PhD Jurys (outside of my University)

19 times as a reviewer for a PhD thesis in France and 3 times abroad.

2 times as HDR reviewer in France.

Publications:

36 publications in referred international journals and:
8 Chapters or special issues and French journal publications, 3 international patents, 68 publications in international conferences...

Publication in referred international journals

1 J.L. Lutton, D. Nace, J. Carlier, "Assigning Spare Capacities in Survivable Mesh Networks", paru dans *Telecommunication Systems Journal*, Vol. 13, No. 2-4, pages 441-452, août 2000, http://dx.doi.org/10.1023/A:1019164611304.

2 F. Chatté, B. Ducourthial, D. Nace, S. Niculescu, "Fluid Modelling Packet Switched Networks: Perspectives for Congestion Control", paru dans IJSS (International Journal of Systems Science, Special Issue), Vol. 34, N° 10-11, août-septembre 2003, pages 585-597.

3 H. Kerivin, D. Nace, T-T-L. Pham, "Design of Capacitated Survivable Networks with single facility", *IEEE/ACM Trans. on Networking*, Vol. 13, N°.2, pages 248-261, avril 2005.

4 D. Nace, L. N. Doan, E. Gourdin, B. Liau "Computing Optimal Max-min Fair Resource Allocation for Elastic Flows", *IEEE/ACM Transactions on Networking*, Vol. 14 No. 6, pages 1272-1282, décembre 2006.

5. D. Nace, J. B. Orlin "Lexicographically Minimum and Maximum Load Linear Programming Problems" *Operations Research*, Vol. 55, Issue 1, pages 182-187, janvier-février 2007.

6. B. Lardeux, D. Nace et J. Geffard "Multi-Period Network Design With Incremental Routing",*Networks, Volume 50, Issue 1, Août 2007, pages 109-117* .

7 R. Sirdey, J. Carlier, H. Kerivin et D. Nace, "On a resource-constrained scheduling problem with application to distributed systems reconfiguration", *European Journal on Operations Research* (*EJOR), Issue 2, 1 December 2007, Pages 546-563* online, 13 décembre 2006, http://dx.doi.org/10.1016/j.ejor.2006.10.011.

8 D. Nace, L. N. Doan, O. Klopfenstein, A. Bashllari "Max-Min Fairness in multi-commodity flows", *Computers & Operations Research, Volume 35, Issue 2, February 2008, Pages 557-573,* http://dx.doi.org/10.1016/j.cor.2006.03.020.

9 D. Nace et M. Pioro, "A Tutorial on Max-Min Fairness and its Applications to Routing and Load-Balancing in Telecommunication Networks" IEEE Journal Communications Surveys and Tutorials, Volume 10, Issue 4, Fourth Quarter 2008 Page(s):5 – 17, 2008.

10. O. Klopfenstein et D. Nace "A robust approach to the chance-constrained knapsack problem", Operations Research Letters, vol. 36, Issue 5, September 2008, Pages 628-632.

11. A. Bashllari, D. Nace, E. Gourdin, O. Klopfenstein, "Max-Min Fair Survivable Networks », *Annals of Telecommunications Journal,* Springer, Volume 63, Numbers 9-10 / October, 2008, Pages 511-522, http://dx.doi.org/10.1007/s12243-008-0048-z.

12. R. Sirdey, J. Carlier, D. Nace "Approximate resolution of a resource-constrained scheduling problem", Journal of Heuristics, Volume 15, Number 1, pp 1-17, February, 2009.

13. R. Sirdey, J. Carlier, D. Nace "A GRASP for a resource-constrained scheduling problem" *Int. J. Innovative Computing and Applications, Vol. 2, No. 3, 2010*

14. O. Klopfenstein, D. Nace: Cover inequalities for robust knapsack sets - Application to the robust bandwidth packing problem. Networks 59(1): 59-72 (2012)

15. X. Cao, A. Jouglet, D. Nace: A Multi-Period Renewal equipment problem. European Journal of Operational Research 218(3): 838-846 (2012)

16. S. Carpov, J. Carlier, D. Nace, R. Sirdey: Two-stage hybrid flow shop with precedence constraints and parallel machines at second stage. Computers & OR 39(3): 736-745 (2012)

17. Nace, D. and Pioro, M. and Tomaszewski, A. and Zotkiewicz, M., Complexity of a classical flow restoration problem, *Networks*, vol. 62, num. 2, pp. 149-160, Sep, 2013.

18. A. Fundo, A. Bashllari, D. Nace, I. Shinko "A hybrid rerouting scheme", Telecommunications System Journal, May 2014, Volume 56, Issue 1, pp 69-78.

19. W. Ogryczak, H. Luss, M. Pióro, D. Nace, and A. Tomaszewski, "Fair Optimization and Networks: A Survey", Journal of Applied Mathematics (open access), Hindawi, Volume 2014 (2014), Article ID 612018, 25 pages.

20. A. Gogu, D. Nace, S. Chatterjea, and A. Dilo, "Max-Min Fair Link Quality in WSN Based on SINR", Journal of Applied Mathematics (open access), Hindawi, Volume 2014 (2014), Article ID 693212, 11 pages

21. O. Stan, R. Sirdey, J. Carlier and D. Nace, "The robust binomial approach to chance-constrained optimization problems with application to stochastic partitioning of large process networks", Journal of Heuristics, June 2014, Volume 20, Issue 3, pp 261-290.

22. I. Shinko, Y. Fouquet, D. Nace « Elastic routing for survivable networks », IJGUC (International Journal of Grid and Utility Computing), Inderscience, 2015 Vol. 6 No. 2, pp 121-129.

23. O. Stan, R. Sirdey, J. Carlier and D. Nace, "A GRASP metaheuristic for the robust mapping and routing of Dataflow Process Networks on Manycore architectures" 4OR - A Quarterly Journal of Operations Research: Volume 13, Issue 3 (2015), Page 309-334.

24. Y. Fouquet, D. Nace, M. Pioro, M. Poss, and M. Zotkiewicz, "Generalized Elastic Flow Rerouting Scheme" Networks, Networks 66(4): 267-281 (2015).

25. A. Jouglet, D. Nace, C. Outteryck: "Timetabling of sorting slots in a logistic warehouse". Annals OR 239(1): 295-316 (2016)

26. M. Pióro, Y. Fouquet, D. Nace, M. Poss, "Optimizing Flow Thinning Protection in Multicommodity Networks with Variable Link Capacity". Operations Research 64(2): 273-289 (2016)

27. A. Agra, M. C. Santos, D. Nace, M. Poss, "A Dynamic Programming Approach for a Class of Robust Optimization Problems". *SIAM Journal on Optimization 26(3):* 1799-1823 (2016).

28. Fouquet, Y. and Nace, D. and Pioro, M. and Poss, M. “An optimization framework for traffic restoration in optical wireless”, *Optical Switching and Networking, Volume 23, Part 2, January 2017, Pages 108-117*

29. Ada Gogu, Dritan Nace, Enrico Natalizio, Yacine Challal, « Using dynamic programming to solve the Wireless Sensor Network Configuration Problem”, *Journal of Network and Computer Applications, Volume 83, 1 April 2017, Pages 140-154.*

30. Marcio C Santos, Michael Poss, and Dritan Nace. A perfect information lower bound for robust lot-sizing problems. *Annals of Operations Research*, 271(2):887{913, 2018. doi: 10.1007/s10479-018-2908-x

31. Dritan Nace, Michal Pioro, Michael Poss, Fabio D'Andreagiovanni, Ilya Kalesnikau, Marinela Shehaj, and Artur Tomaszewski. An optimization model for robust FSO network dimensioning. *Optical Switching and Networking*, 32:25, Vol. 40, April 2019.

32. Marcio Santos, Hannan Luss, Dritan Nace, Michael Poss. Proportional and maxmin fairness for the sensor location problem with chance constraints, *Discrete Applied Mathematics*, Elsevier, 2019, 261 (31), pp.316-331

33. Jacques Carlier, Joël Lattmann, Jean-Luc Lutton, Dritan Nace, Thanh Son Pham. An automatic restoration scheme for switch-based networks. Ad Hoc Networks, Elsevier, 2019, 89, pp.78-87.

34. Marinela Shehaj, Dritan Nace, Ilya Kalesnikau, Michał Pióro, Link dimensioning of hybrid FSO/fiber networks resilient to adverse weather conditions, *Computer Networks*, Elsevier, 2019.

35. *Ilya Kalesnikau, Michal Pióro, Michael Poss, Dritan Nace, Artur Tomaszewski:* ***A robust optimization model for affine/quadratic flow thinning: A traffic protection mechanism for networks with variable link capacity.*** *Networks 75(4): 420-437 (2020)*

36. Ilya Kalesnikau, Marinela Shehaj, Dritan Nace, Michał Pióro, Optimizing FSO networks resilient to adverse weather conditions by means of enhanced uncertainty sets, Optical Switching and Networking, 2021, (Article 100628).

Chapters, special issues and French journals' publications

1. D. Nace, W. Benameur, "Méthodes, techniques et stratégies de reroutage pour les réseaux de télécommunications", paru dans *Calculateurs Parallèles*, Vol. 11 N°1/ juin 1999, p. 9-37.

2. A. Gogu, D. Nace, A. Dilo, N. Meratnia « Review of Optimization problems in Wireless Sensor Networks », in « *Telecommunication Networks, Current status and future trends*», Intech, ISBN 978-953-51-0341-7, Mars 2012.

3. L. Brac de la Perrière, A. Jouglet, A. Nace, D. Nace, “Water Planning and Management: An Extended Model for the Real-Time Pump Scheduling Problem”, appeared in Advances in Hydroinformatics, Springer Hydrogeology 2014, pp 153-170.

4. D. Nace, J. Carlier, "Distributed Rerouting in DCS Mesh Networks", *Lecture Notes in Computer Science*, Vol. n° 1120, pages 406-415, 1996, http://dx.doi.org/10.1007/3-540-61576-8_99.
5. D. Nace, J. Carlier, J.L. Lutton, « Issues in Distributed Rerouting in High Speed Networks », proceedings de OPODIS'99, Hanoï, octobre 1999, *Studia Informatica*, hors-série, pages 205-214, Editions Suger.
6. N-L. Doan, V. Duong, D. Nace, "The Air Route Network Design Problem", paru dans *Studia Universalis*, Edition Suger, pages 15-20, selected papers from RIVF'2004.
7. A. Bashllari, D. Nace "A Study on Two New Protection Strategies", Lecture Notes in Computer Science, Volume 5275/2008 pages 66-77, selected papers from IPOM'2008.
8. *Michal Pióro, Emma Fitzgerald, Ilya Kalesnikau, Dritan Nace, Jacek Rak:* ***Optimization of Wireless Networks for Resilience to Adverse Weather Conditions.*** *Guide to Disaster-Resilient Communication Networks 2020: 523-556*