

Personal Data

Last Name	Louveaux
First Name	Quentin
Current Position	Professor
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Education

- **1999** : Engineer in Applied Mathematics, Université catholique de Louvain, Belgium
- **2004** : Ph. D. in Applied Mathematics, Université catholique de Louvain, Belgium

Career

- **2016-now** : Professor, Faculty of Applied Sciences, Liège, Belgium
- **2013-2014** : Invited professor, University of California, Davis, USA
- **2007-2016** : Assistant Professor, Faculty of Applied Sciences, Liège, Belgium
- **2006-2007** : FNRS Postdoctoral researcher , Université catholique de Louvain, Belgium
- **2006** : Postdoctoral researcher, EPFL, Lausanne, Switzerland
- **2004-2006** : Postdoctoral researcher, Otto-von-Guericke Universität Magdeburg, Germany
- **1999-2004** : FNRS research fellow, Université catholique de Louvain, Belgium

Conferences and seminars

- Chair of program or organization committee
 - 2016 IPCO, Integer Programming and Combinatorial Optimization, Liège

- 2015 Dysco study Day, Liège
- 2008, 5th Mixed-Integer programming workshop, New-York, USA
- Participation to conference as keynote or invited speaker
 - 2023, 27th SPOC, ESSEC, Paris, France
 - 2019, SIAM Workshop day, Delft, The Netherlands
 - 2018, 15th Mixed-integer programming workshop, Greenville, USA
 - 2016, Diamant symposium, Soest, The Netherlands
 - 2015, 10th Mixed-Integer Programming workshop, Madison, USA
 - 2010, 7th Mixed-Integer Programming workshop, Atlanta, USA
 - 2008, 1st Multi-row cutting planes workshop, Bertinoro, Italy
 - 2007, 4th Mixed-Integer Programming workshop, Montréal, Canada
- Supervision of completed doctoral theses
 - 2012 Laurent Poirrier : Multi-row approaches to cutting plane generation
 - 2013 David Lupien Saint-Pierre : Contributions to Monte-Carlo search
 - 2015 Sébastien Mathieu : Flexibility services in the electrical system
 - 2016 Alejandro Marcos Alvarez : Computational and theoretical synergies between linear optimization and supervised machine learning
 - 2025 Bardhyl Miftari : Tools and Techniques for Efficient Encoding and Analysis of Linear Programming Models
- Jury member of 12 theses (5 abroad)
- Editorial activities
 - since 2017 : Associate editor of INFORMS Journal on computing
 - 2016-2017 : Guest editor of Mathematical Programming Series B
 - Reviewers for many journals : Mathematical Programming, Mathematics of Operations Research, Discrete Optimization, ...

- Miscellaneous
 - 2019-2023 Member of the FRIA jury
 - 2023-2027 Member of the CSRV-ST (research council in Stem) for the university of Liège
 - Evaluator of research projects in The Netherlands, Singapore, FNRS, Brussels region

Selected publications

- Boveroux, L., Ernst, D., and Louveaux, Q. (14 October 2025). Investigating the Monte-Carlo Tree Search Approach for the Job Shop Scheduling Problem. *EURO Journal on Computational Optimization*, 13 doi:10.1016/j.ejco.2025.100118
- Paulo, G. S. D., Louveaux, Q., Salomão, A. C. B., and Primo, G. (25 November 2024). A proposal in STEM for virtual exchange held by Computer Science and Applied and Computational Mathematics programs. *Journal of Virtual Exchange*, 7(SI-IVEC2023) , 28-41. doi:10.21827/jve.7.41323
- Miftari, B., Berger, M., Derval, G., Louveaux, Q., and Ernst, D. (2024). GBOML: A Structure-exploiting Optimization Modelling Language in Python. *Optimization Methods and Software* . doi:10.1080/10556788.2023.2246169
- Resimont, T., Louveaux, Q., and Dewallef, P. (06 September 2021). Optimization Tool for the Strategic Outline and Sizing of District Heating Networks Using a Geographic Information System. *Energies*, 14 (17), 5575. doi:10.3390/en14175575
- Berger, M., Radu, D.-C., Dubois, A., Pandzic, H., Dvorkin, Y., Louveaux, Q., and Ernst, D. (August 2021). Siting Renewable Power Generation Assets with Combinatorial Optimisation. *Optimization Letters* . doi:10.1007/s11590-021-01795-0
- Blanchard, M., De Loera, J., and Louveaux, Q. (2021). On the length of monotone paths in polyhedra. *SIAM Journal on Discrete Mathematics* . doi:10.1137/20M1315646

- Duchesne, L., Louveaux, Q., and Wehenkel, L. (2021). Supervised learning of convex piecewise linear approximations of optimization problems. In Proceedings of the 29th European Symposium on Artificial Neural Networks, Computational Intelligence and Machine Learning . doi:10.14428/esann/2021.ES2021-74
- Radu, D.-C., Berger, M., Dubois, A., Fonteneau, R., Pandzic, H., Dvorkin, Y., Louveaux, Q., and Ernst, D. (2021). Assessing the Impact of Offshore Wind Siting Strategies on the Design of the European Power System. Applied Energy, 305 . doi:10.1016/j.apenergy.2021.117700
- Jacqmin, H., Chatelain, B., Louveaux, Q., Jacqmin, P., Dogné, J.-M., Graux, C., and Mullier, F. (2020). Clustering and Kernel Density Estimation for Assessment of Measurable Residual Disease by Flow Cytometry. Diagnostics, 10 (5). doi:10.3390/diagnostics10050317
- Cuvelier, T., Archambeau, P., Dewals, B., and Louveaux, Q. (March 2018). Comparison Between Robust and Stochastic Optimisation for Long-term Reservoir Management Under Uncertainty. Water Resources Management, 32 (5), 1599–1614. doi:10.1007/s11269-017-1893-1
- Aliev, I., Bassett, R., De Loera, J., and Louveaux, Q. (2017). A Quantitative Doignon-Bell-Scarf theorem. Combinatorica . doi:10.1007/s00493-015-3266-9
- Gerard, D., Koeppe, M., and Louveaux, Q. (2017). Guided Dive for the Spatial Branch-and-Bound. Journal of Global Optimization . doi:10.1007/s10898-017-0503-3
- Marcos Alvarez, A., Louveaux, Q., and Wehenkel, L. (January 2017). A Machine Learning-Based Approximation of Strong Branching. INFORMS Journal on Computing, 29 (1), 185-195. doi:10.1287/ijoc.2016.0723
- Georges, E., Cornélusse, B., Ernst, D., Louveaux, Q., Lemort, V., and Mathieu, S. (June 2016). Direct control service from residential heat pump aggregation with specified payback. In Proceedings of the 19th Power Systems Computation Conference (PSCC) . doi:10.1109/PSCC.2016.7540835
- Aliev, I., De Loera, J., and Louveaux, Q. (2016). Parametric Polyhedra with at least k Lattice Points: Their Semigroup Structure and the k -Frobenius Problem. In A. Beveridge, J. Griggs, L. Hogben, G. Musiker,

... P. Tetali (Eds.), Recent trends in Combinatorics (pp. 753-778). Springer.

- Louveaux, Q., Mathei, A., and Mathieu, S. (2016). Box search for the data mining of the key parameters of an industrial process. *Intelligent Data Analysis*, 20 (6). doi:10.3233/IDA-150335
- Mathieu, S., Louveaux, Q., Ernst, D., and Cornélusse, B. (2016). DSIMA: A testbed for the quantitative analysis of interaction models within distribution networks. *Sustainable Energy, Grids and Networks*, 5 , 78 - 93. doi:10.1016/j.segan.2015.11.004
- Louveaux, Q., Poirrier, L., and Salvagnin, D. (June 2015). The strength of multi-row models. *Mathematical Programming Computation*, 7 (2), 113-148. doi:10.1007/s12532-014-0076-9
- Agra, A., Doostmohammadi, M., and Louveaux, Q. (May 2015). Valid inequalities for the single arc design problem with set-ups. *Discrete Optimization*, 16 , 17-35. doi:10.1016/j.disopt.2014.12.002
- Merciadri, L., Mathieu, S., Ernst, D., and Louveaux, Q. (2015). Optimal Assignment of Off-Peak Hours to Lower Curtailments in the Distribution Network. In *Proceedings of the 5th European Innovative Smart Grid Technologies (ISGT)* . doi:10.1109/ISGTEurope.2014.7028787
- Mathieu, S., Louveaux, Q., Ernst, D., and Cornélusse, B. (August 2014). A quantitative analysis of the effect of flexible loads on reserve markets. In *Proceedings of the 18th Power Systems Computation Conference (PSCC)* . doi:10.1109/PSCC.2014.7038428
- Gemine, Q., Ernst, D., Louveaux, Q., and Cornélusse, B. (August 2014). Relaxations for multi-period optimal power flow problems with discrete decision variables. In *Proceedings of the 18th Power Systems Computation Conference (PSCC'14)* . doi:10.1109/PSCC.2014.7038396
- Aliev, I., De Loera, J., and Louveaux, Q. (June 2014). Integer Programs with Prescribed Number of Solutions and a Weighted Version of Doignon-Bell-Scarf's Theorem. *Lecture Notes in Computer Science* . doi:10.1007/978-3-319-07557-04

- St-Pierre, D. L., Maes, F., Ernst, D., and Louveaux, Q. (March 2014). A learning procedure for sampling semantically different valid expressions. *International Journal of Artificial Intelligence*, 12 (1), 18-35.
- Louveaux, Q., and Poirrier, L. (February 2014). An algorithm for the separation of two-row cuts. *Mathematical Programming*, 143 (1-2), 111-146. doi:10.1007/s10107-012-0597-9
- Mathieu, S., and Louveaux, Q. (2014). A combinatorial branch-and-bound algorithm for box search. *Discrete Optimization*, 13 , 36-48. doi:10.1016/j.disopt.2014.05.001
- Mathieu, S., Ernst, D., and Louveaux, Q. (October 2013). An efficient algorithm for the provision of a day-ahead modulation service by a load aggregator. In *Proceedings of the 4th European Innovative Smart Grid Technologies (ISGT)* . doi:10.1109/ISGTEurope.2013.6695247
- Fonteneau, R., Ernst, D., Boigelot, B., and Louveaux, Q. (2013). Min max generalization for deterministic batch mode reinforcement learning: relaxation schemes. *SIAM Journal on Control and Optimization*, 51 (5), 3355–3385. doi:10.1137/120867263
- Dey, S., and Louveaux, Q. (August 2011). Split rank of triangle and quadrilateral inequalities. *Mathematics of Operations Research*, 36 (3), 432-461. doi:10.1287/moor.1110.0496
- Lupien St-Pierre, D., Louveaux, Q., and Teytaud, O. (2011). *Online Sparse Bandit for Card Games*. *Lecture Notes in Computer Science* .
- Andersen, K., Louveaux, Q., and Weismantel, R. (July 2010). Mixed-integer sets from two rows of two adjacent simplex bases. *Mathematical Programming*, 124 (1-2), 455-480. doi:10.1007/s10107-010-0376-4
- Andersen, K., Louveaux, Q., and Weismantel, R. (February 2010). An analysis of mixed integer linear sets based on lattice point free convex sets. *Mathematics of Operations Research*, 35 (1), 233-256. doi:10.1287/moor.1090.0439
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- Louveaux, Q., and Weismantel, R. (May 2008). Polyhedral properties for the intersection of two knapsacks. *Mathematical Programming*, 113 (1), 15-37. doi:10.1007/s10107-006-0045-9
- Andersen, K., Louveaux, Q., Weismantel, R., and Wolsey, L. A. (June 2007). Inequalities from two rows of the simplex tableau. *Lecture Notes in Computer Science*, 1-15. doi:10.1007/978-3-540-72792-7-1
- Louveaux, Q., and Wolsey, L. A. (2007). Lifting, Superadditivity, Mixed Integer Rounding and Single Node Flow Sets Revisited. *Annals of Operations Research*, 153 (1), 47-77. doi:10.1007/s10479-007-0171-7
- Köppe, M., Louveaux, Q., Weismantel, R., and Wolsey, L. A. (2004). Extended formulations for Gomory Corner polyhedra. *Discrete Optimization*, 1 (2), 141-165. doi:10.1016/j.disopt.2004.06.001
- Louveaux, Q., and Wolsey, L. A. (2003). Lifting, Superadditivity, Mixed Integer Rounding and Single Node Flow Sets Revisited. *4OR: A Quarterly Journal of Operations Research*, 1, 173-207. doi:10.1007/s10288-003-0016-4
- Louveaux, Q., and Wolsey, L. A. (2002). Combining problem structure and basis reduction to solve a class of hard integer programs. *Mathematics of Operations Research*, 27 (3), 470-484. doi:10.1287/moor.27.3.470.315