

Education

2003: Doctoral degree in Computer Engineering, Politecnico di Milano, Italy.

1999: Diploma in Computer Engineering, Politecnico di Milano, Italy.

Positions

2024–: Associate Professor, Dept. of Electronics, Information and Bioengineering, Politecnico di Milano, Italy.

2021–2024: Assistant Professor, Dept. of Electronics, Information and Bioengineering, Politecnico di Milano, Italy.

2018–2021: Principal Engineer, Fair Isaac Corp., Birmingham UK.

2013–2018: Senior Engineer, Fair Isaac Corp., Birmingham UK.

2013–: Adjunct Professor, Dept. of Mathematical Sciences, Clemson University, Clemson, South Carolina, USA.

2010–2013: Assistant Professor, Dept. of Mathematical Sciences, Clemson University, Clemson, South Carolina, USA.

2008–2010: Visiting Assistant Professor, Dept. of Industrial & Systems Engineering, Lehigh University, Bethlehem, Pennsylvania, USA.

2006–2008: Postdoctoral Fellow, Tepper School of Business, Carnegie Mellon University, Pittsburgh, Pennsylvania, USA.

2003–2006: FIRB Assistant Professor, Dept. of Electronics and Information, Politecnico di Milano, Italy.

Research interests

Mixed Integer Nonlinear Optimization (MINLO): exact methods for MINLO; bound reduction techniques, branching mechanisms, reformulation and convexification of nonconvex optimization problems; exact solvers for convex and nonconvex Mixed Integer Quadratically Constrained problems.

Multiobjective optimization: exact methods for Mixed Integer Linear Optimization (MILO) problems with two or more objective functions; branching rules and fathoming rules for multiobjective MILOs; efficient storage of Pareto points in biobjective MILOs.

Alternate Current Optimal Power Flow (ACOPF): models and algorithms for the design and maintenance of power grids; reformulation, bound reduction, lower bounds; application to renewable energy sources and to strategic planning of national power grids.

Sustainable and soft mobility: exact and heuristic algorithms for planning and operation of networks for sustainable mobility involving cycle paths, railways, and canals. Models and methods for optimal location of charging stations for e-bikes on large cycle path networks.

Other interests: obnoxious location problems; sphere packing in n dimensions; multicommodity network design; the maximum feasible subsystem problem.

Awards

2019: Oberwolfach *Research in Pairs* fellowship, 22 Sep. – 5 Oct. 2019.

2017: Best paper, “On handling indicator constraints in mixed integer programming”, *Computational Optimization and Applications (COAP)* 65: 545–566, 2016.

2017: Distinguished Service Award, Web Editor, INFORMS Optimization Society, October 2017.

Nov. 2010: COIN-OR Informs Cup on the best COIN-OR software for Optimization, *Couenne*.

- June 2009: Best paper award: G. Panza, A. Capone, D. Pinarello and P. Belotti. "Robustness in Next-Generation Networks", ICT Summit Europe.
- 1998: Honorable mention, Camerini-Carraresi prize for the best M.Sc. thesis in Operations Research, Italy, 1998.

Research grants

- 2023: P.I., "HEXAGON: Highly specialized EXact Algorithms for Grid Operations at the National level", PRIN-PNRR, €232,700.
- 2013: Co-P.I., "Algorithms for mixed integer conical optimization," National Science Foundation, \$150,000, with T.K. Ralphs.
- 2010: P.I., "Robust planning of the production of liquid gases under energy uncertainty," PITA – Pennsylvania Infrastructure Technology Alliance. \$27,060, with L.V. Snyder and T.K. Ralphs.
- 2009: Co-P.I., "Computational models and algorithms for enterprise-wide optimization of process industries," PITA – Pennsylvania Infrastructure Technology Alliance. \$19,250, with L.V. Snyder.
- 2009: Co-P.I., "Capacity planning for a gases supply chain with network disruptions and interruptible power," PITA – Pennsylvania Infrastructure Technology Alliance. \$33,000, with L.V. Snyder.

Publications

Refereed Journal Publications.

- (1) P. Belotti, "Convex envelopes of bounded monomials on two-variable cones" *Mathematical Programming B*, to appear (2025).
- (2) P. Belotti, "Spatial branching for a special class of convex MIQO problems", *Optimization Letters* **18**:1757–1770 (2024).
- (3) P. Belotti, F. Errico, F. Malucelli, A.T. Massetti, "Optimization of E-bike networks", *Transportation Planning and Technology*: 1-22 (2024).
- (4) F. Furini et al., "QPLIB: A library of quadratic programming instances", *Mathematical Programming Computation* **11(2)**:237-265 (2019).
- (5) N. Adelgren, P. Belotti, A. Gupte, "Efficient storage of Pareto points in biobjective mixed integer programming", *Inform Journal on Computing* **30(2)**: 324-338 (2018).
- (6) P. Belotti, J.C. Góez, I. Pólik, T.K. Ralphs, T. Terlaky, "A complete characterization of disjunctive conic cuts for mixed integer second order cone optimization", *Discrete Optimization* **24**:3-31 (2017).
- (7) P. Belotti, T. Berthold, "Three ideas for a feasibility pump for nonconvex MINLP", *Optimization Letters* **11(1)**:3-15 (2017).
- (8) P. Belotti, P. Bonami, M. Fischetti, A. Lodi, M. Monaci, A. Nogales-Gómez, "On handling indicator constraints in mixed integer programming", *Computational Optimization and Applications* **65(3)**:545-566 (2016).
- (9) P. Belotti, B. Soylyu, M.M. Wiecek, "Fathoming rules for biobjective mixed integer linear programs: Review and extensions", *Discrete Optimization* **22**:341-363 (2016).
- (10) W. Adams, P. Belotti, R. Shen, "Convex hull characterizations of lexicographic orderings", *Journal of Global Optimization* **66(2)**:311-329 (2016).
- (11) B. Rostami, F. Malucelli, P. Belotti, S. Gualandi, "Lower bounding procedure for the asymmetric quadratic traveling salesman problem", *European Journal of Operational Research* **253(3)**:584-592 (2016).
- (12) P.M. Dearing, P. Belotti, A.M. Smith, "A primal algorithm for the weighted minimum covering ball problem in", *TOP* **24(2)**:466-492 (2016).
- (13) T.J. Mullin, P. Belotti, "Using branch-and-bound algorithms to optimize selection of a fixed-size breeding population under a relatedness constraint", *Tree Genetics & Genomes* **12(1)**:4 (2016).

- (14) P. Belotti, J.C. Góez, I. Pólik, T.K. Ralphs, T. Terlaky, "A conic representation of the convex hull of disjunctive sets and conic cuts for integer second order cone optimization", *Numerical Analysis and Optimization*, 1-35 (2015).
- (15) Ç. Latifoğlu, P. Belotti, L.V. Snyder, "Models for production planning under power interruptions", *Naval Research Logistics*, **60(5)**:413-431 (2013).
- (16) P. Belotti, J.C. Góez, I. Pólik, T.K. Ralphs, T. Terlaky, "On families of quadratic surfaces having fixed intersections with two hyperplanes", *Discrete Applied Mathematics*, **161(16)**:2778-2793 (2013).
- (17) P. Belotti, C. Kirches, S. Leyffer, J. Linderoth, J. Luedtke, and A. Mahajan, "Mixed-Integer Nonlinear Optimization", *Acta Numerica* **22**:1-131 (2013).
- (18) G. Nannicini and P. Belotti, "Rounding-based heuristics for nonconvex MINLPs", *Mathematical Programming Computation* **4(1)**:1-31 (2012).
- (19) P. Belotti, "Bound reduction using pairs of linear inequalities", *Journal of Global Optimization* **56(3)**:787-819 (2012).
- (20) P. Belotti, A.J. Miller, M. Namazifar, "Linear inequalities for bounded products of variables", *SIAG/OPT Views-and-News* **22(1)**:1-7 (2011).
- (21) A. Altın, P. Belotti, M.Ç. Pınar, "OSPF routing with optimal oblivious performance ratio under polyhedral demand uncertainty", *Optimization and Engineering* **11(3)**:395-422 (2010).
- (22) P. Belotti, J. Lee, L. Liberti, F. Margot, A. Wächter, "Branching and bounds tightening techniques for non-convex MINLP", *Optimization Methods and Software* **24(4-5)**:597-634 (2009).
- (23) P. Belotti, M.Ç. Pınar, "Optimal oblivious routing under linear and ellipsoidal uncertainty", *Optimization and Engineering* **9(3)**:257-271 (2008).
- (24) P. Belotti, A. Capone, G. Carello, F. Malucelli, "Multi-layer MPLS network design: the impact of statistical multiplexing", *Computer Networks* **52(6)**:1291-1307 (2008).
- (25) P. Belotti, M. Labbé, F. Maffioli, M. M. Ndiaye, "A branch-and-cut method for the obnoxious p -median problem", *4OR* **5(4)**:299-314 (2007).
- (26) S. Kucherenko, P. Belotti, L. Liberti, N. Maculan, "New formulations for the kissing number problem", *Discrete Applied Mathematics* **155(14)**:1837-1841 (2007).
- (27) A. Altın, E. Amaldi, P. Belotti, M.Ç. Pınar, "Provisioning virtual private networks under traffic uncertainty", *Networks* **49(1)**:100-115 (2007).
- (28) P. Belotti, F. Malucelli, L. Brunetta, "Multicommodity network design with discrete node costs", *Networks* **49(1)**:90-99 (2007).
- (29) E. Amaldi, P. Belotti, A. Capone, F. Malucelli, "Optimizing base station location and configuration in UMTS networks", *Annals of Operations Research* **146(1)**:135-151 (2006).
- (30) P. Belotti, "Multicommodity network design with survivability constraints: Some models and algorithms", *4OR* **3(1)**:79-81 (2005).

Book chapters.

- (1) P. Belotti, "Disjunctive cuts for non-convex MINLP". J. Lee and S. Leyffer (eds.), *Mixed Integer Nonlinear Programming*, IMA Volumes in Mathematics and its Applications, vol. 154, Springer, 117-144 (2012).
- (2) A. Qualizza, P. Belotti, F. Margot, "Linear programming relaxations of quadratically constrained quadratic programs". J. Lee and S. Leyffer (eds.), *Mixed Integer Nonlinear Programming*, IMA Volumes in Mathematics and its Applications, vol. 154, Springer, 407-426 (2012).
- (3) P. Belotti, L. Liberti, A. Lodi, G. Nannicini, A. Tramontani, "Disjunctive inequalities: applications and extensions." J. Cochran et al. (eds.), *Encyclopedia of Operations Research and Management Science*, John Wiley & Sons (2010).
- (4) S. Orlowski, C. Raack, A.M.C.A. Koster, G. Baier, T. Engel, P. Belotti, "Branch-and-cut techniques for solving realistic two-layer network design problems," in A.M.C.A. Koster, X. Muñoz (eds.), *Graphs and Algorithms in Communication Networks*, Springer-Verlag, 95-117 (2009).

Conference Proceedings (Reviewed).

- (1) L. Pirolo, P. Belotti, F. Malucelli, R. Moscarelli, P. Pileri, "Optimal charging station location in a linear cycle path with deviations". In A. Basu et al. (eds.), *Proceedings of the International Symposium on Combinatorial Optimization*, series: Lecture Notes in Computer Sciences 14594, 2024.
- (2) P. Belotti, S. Cafieri, J. Lee, L. Liberti, A. Miller, "On the composition of convex envelopes for quadrilinear terms". In A. Chinchuluun et al. (eds.), *Proceedings of the International Conference on Optimization, Simulation and Control*, series: Springer Optimization and its Application, Springer, 2012.
- (3) N. Touati-Moungla, P. Belotti, V. Jost, L. Liberti, "A Branch-and-Price Algorithm for the Risk-Equity Constrained Routing Problem". In J. Pahl, T. Reiners, S. Voß (eds.), *Network Optimization*, Lecture Notes in Computer Science 6701, 439-449, Springer Berlin/Heidelberg (2011).
- (4) G. Nannicini, P. Belotti, J. Lee, J. Linderoth, F. Margot, A. Wächter, "A Probing Algorithm for MINLP with Failure Prediction by SVM," *Proceedings of the eighth International Conference on Integration of Artificial Intelligence (AI) and Operations Research (OR) techniques in Constraint Programming (CPAIOR 2011)*, 154-169, Berlin, Germany (June 2011).
- (5) P. Belotti, S. Cafieri, J. Lee, L. Liberti, "Feasibility-based bounds tightening via fixed points," *Proceedings of the 4th Annual International Conference on Combinatorial Optimization and Applications (COCOA 2010)*, Big Island, Hawaii (December 2010).
- (6) A. Karabis, P. Belotti, D. Baltas, "Optimization of catheter position and dwell time in prostate HDR brachytherapy using HIPO and linear programming," *Proceedings of the World Congress on Medical Physics and Biomedical Engineering*, 612-615, Munich, Germany (September 2009).
- (7) G. Panza, A. Capone, D. Pinarello, P. Belotti, "Robustness in next-generation networks," *Proceedings of the ICT Summit Europe*, Santander, Spain (June 2009).
- (8) P. Belotti, A. Capone, G. Carello, F. Malucelli, F. Senaldi, A. Totaro, "Design of Multi-layer networks with traffic grooming and statistical multiplexing," *Proceedings of the International Network Optimization Conference (INOC 2007)*, Spa, Belgium (April 2007).
- (9) P. Belotti, A. Capone, G. Carello, F. Malucelli, F. Senaldi, A. Totaro, "MPLS over transport network: two layer approach to network design with statistical multiplexing," *Proceedings of the 2nd Conference on Next Generation Internet Design and Engineering*, 333-340, Valencia, Spain (April 2006).
- (10) E. Amaldi, P. Belotti, R. Hauser, "Randomized relaxation methods for the maximum feasible subsystem problem," *Proceedings of the 11th International Conference on Integer Programming and Combinatorial Optimization (IPCO 2005)*, 259-264, Berlin, Germany (June 2005).
- (11) P. Belotti, F. Malucelli, "Row-column generation for multilayer network design," *Proceedings of the International Network Optimization Conference (INOC 2005)*, 422-427, Lisbon, Portugal (March 2005).
- (12) P. Belotti, F. Malucelli, "Relaxation approach to network design with shared protection," *Proceedings of the International Network Optimization Conference (INOC 2003)*, 72-77, Paris-Evry, France (October 2003).
- (13) P. Belotti, T. Stidsen, "Optimal placement of wavelength converting nodes," *Proceedings of the Third International Workshop on Design of Reliable Communication Networks (DRCN 2001)*, 15-21, Budapest, (October 2001).

Teaching

Fall '22,'23: "Fondamenti di Ricerca Operativa" (undergrad.), Politecnico di Milano. Syllabus: Optimization models, Linear Optimization, Optimization problems on graphs, Integer Linear Optimization, Computational Complexity.

- June '22: "Coding con Python", for high-school students, Politecnico di Milano. Part of the *School@DEIB* dissemination program for High Schools in the Milan Area (PCTO – ex "alternanza scuola lavoro").
- March '22: "Prendere decisioni complesse", Executive Marketing Management program at the Graduate School of Business (MIP), Politecnico di Milano (taught with Stefano Ronchi).
- Spring '13: "MthSc816 – Network Algorithms and Data Structures" (grad.), Clemson University. Syllabus: graphs, binary trees, red-black trees, optimization problems on graphs.
- Spring '13: "MthSc311 – Linear Algebra" (undergrad.), Clemson University. Syllabus: vectors, matrices, null space, eigenvalues, polynomials, linear transformations.
- Fall '11,'12: "MthSc810 – Mathematical Programming" (grad.), Clemson University. Syllabus: modeling of optimization problems, convex sets. Linear programming: duality, simplex, sensitivity analysis.
- Spring/Fall '12: "MthSc365 – Numerical Methods for Engineers" (undergrad.), Clemson University. Syllabus: basics of programming, linear systems, interpolation, root finding.
- Spring '11: "MthSc101 – Essential Mathematics for the Informed Society" (undergrad.), Clemson University. Syllabus: Boolean algebra, digital data formats, randomness, graphical representation of data, inference and estimation, interest, annuities, and amortization.
- Spring '11,'12: "MthSc811 – Nonlinear Programming" (grad.), Clemson University. Syllabus: Convex sets and functions, unconstrained optimization, constrained optimization, feasible point methods, penalty and barrier methods.
- Fall '10: "MthSc440/640 – Linear Programming" (undergrad.), Clemson University. Syllabus: Linear Programming examples, duality, sensitivity analysis, the simplex method, the revised simplex method.
- Spring '09,'10: "IE341 – Data communication systems analysis and design" (undergrad.), Lehigh University. Syllabus: design, simulation, and technological aspects of Local, Metropolitan, Wide-area, and distributed computing networks.
- Spring '09,'10: "IE172 – Algorithms for systems engineering" (undergrad.), Lehigh University. Syllabus: Design, analysis, and implementation of algorithms for common engineering applications. Sorting and searching, graph algorithms, algorithms for numerical applications.
- Fall '08,'09: "IE426 – Optimization models and applications" (graduate), Lehigh University. Syllabus: convexity and relaxation; models in Linear Programming, Integer Programming, Stochastic Programming, and Nonlinear Programming. Case studies with hands-on experience on real-world problems.
- 2006: Section classes, "C++ for Java users", LIX, École Polytechnique, Paris, France.
- 2004-2005: Co-lecturer, "Design of telecommunication networks," Telecommunications Engineering, Politecnico di Milano, Italy. Syllabus: Models for uncapacitated and capacitated network design problems. Solution techniques: cutting planes, column generation, Lagrangean Relaxation, heuristics. Case studies of synthesis of real-world networks.
- 2005: Lecturer, "Introduction to Operations Research," Computer Engineering, Politecnico di Milano, Italy. Syllabus: Graph Theory, flow problems, Linear Programming, Mixed Integer Linear Programming. Complexity theory, heuristic and approximation algorithms.

- 2000-2001: Section classes, "Operations Research," Computer Engineering, Politecnico di Milano, Italy. Lecturer: F. Maffioli.
- 2001-2004: Section classes, "Introduction to Operations Research," Computer Engineering, Politecnico di Milano. Lecturers: F. Maffioli, F. Malucelli, N. Maculan.
- 2000-2001: Instructor, UNIX system programming, C, and C++, EU-funded Computer Science courses, Bergamo, Italy (60 hours).
- 2000-2001: Instructor, UNIX C and C++, *SpazioZeroUno* Computer Science courses, Vimercate, Milan, Italy (80 hours).

Editorial work

- 2019–: Co-editor, *SIAG/OPT Views and News*.
- 2011–: Associate editor, *Mathematical Models of Operations Research*.
- 2010–2017: Web editor, *INFORMS Optimization Society*.
- 2010–2020: Associate editor, *RAIRO-RO*.
- 2008–: Technical editor, *Mathematical Programming Computation* (Springer).

Organization

- ACOPF: Workshop on Power Flow Optimization, Bergamo, June 18–20, 2024. <https://hexagon.deib.polimi.it/workshop>
- SEA: Symposium on Experimental Algorithms (SEA), Vienna, July 23–26, 2024. <https://sea2024.univie.ac.at>
- ICORES: 13th International Conference on Operations Research and Enterprise Systems, Rome, Italy, 24–26 February 2024. <https://icores.scitevents.org>
- ICERM: Linear and Non-Linear Mixed Integer Optimization, February 27 – March 3, 2023, ICERM, Brown University, Providence RI, USA. <https://icerm.brown.edu/programs/sp-s23/w1>
- MINLP: Workshop on MINLP, Imperial College London, Spring 2021.
- SIOPT: SIAM Conference on Optimization, Spokane (WA), July 2021.
- CPAIOR: One-day workshop on Open Source Tools for Constraint Programming and Mathematical Programming. Organized within the 7th International Conference on Integration of Artificial Intelligence (AI) and Operations Research (OR) techniques in Constraint Programming (CPAIOR), Bologna, Italy, June 14-18, 2010.
- CPAIOR: One-day Workshop on Hybrid Methods for Nonlinear Combinatorial Problems. Organized within CPAIOR, Bologna, Italy, June 14-18, 2010.
- MOPTA: Organizing committee (2009 and 2010), Modeling and Optimization: Theory and Application, Lehigh University, Bethlehem PA. <http://mopta.ie.lehigh.edu>
- BR-OPT: Chair, BR-OPT: Bound Reduction for Mixed Integer Nonlinear Programming. CPAIOR conference, Carnegie Mellon University, Pittsburgh PA, May 27-31, 2009. <http://www.cs.utep.edu/mceberio/Research/br-cpaior09>
- IntCP: Organizing committee, IntCP 2009: Interval analysis, constraint propagation, applications (<http://icwww.epfl.ch/~sam/IntCP09>). Held within the 15th International Conference on Principles and Practice of Constraint Programming (CP 2009), September 20-24, 2009.
- MINLP: Cyber-infrastructure for Mixed Integer Nonlinear Programming (MINLP) problems (<http://www.minlp.org>). A website for exchange of MINLP instances and discussion forums for modeling and solving real-world MINLP problems.

Service activities

- 2008-09: Technical supervision for the REEF (Reconfigurable Educational Experimental Facility) laboratory for undergraduate students, ISE Dept., Lehigh University.
- 2008-10: On the graduate application committee for the ISE Dept., Lehigh University.
- 2000-2006: Supervision, ORLAB – the Operations Research laboratory at the Department of Electronics and Computer Science, Politecnico di Milano.
- Since 2001: Served as a referee for Operations Research, Siam J. on Optimization, Mathematical Programming A, Inform. J. on Computing, Discrete Applied Mathematics, J. of Global Optimization, Networks, 4OR, European J. of Operational Research, OR Letters, Optimization and Engineering, Optimization Methods & Software, Mathematical models of OR, Comp. Opt. & Applications, Telecommunication Systems, Computer Networks, the AIChE Journal, and ESA.

Supervised students

Doctoral:

- Luca Pirolo, “Optimal planning and location of recharging stations for e-bikes,” Politecnico di Milano.
- Çağrı Latifoğlu (Ph.D., 2011), “Robust Optimization techniques for Production Planning under uncertainty,” Lehigh University.

Graduate:

- Natasha Makishima (M.Sc., 2024), “Optimization models and methods for clustering problems,” Politecnico di Milano.
- Elvis Sheyler Jimenez Portillo (M.Sc., 2023), “Optimal management of a biogas production plant: optimization models with uncertainty constraints,” Politecnico di Milano.
- Tiberio Galbiati (M.Sc., 2022), “Optimization of cost and discrepancy for architectural building redrawing using prefabricated wall elements,” Politecnico di Milano.
- Antonio Massetti (M.Sc., 2022), “Optimization of E-bike networks,” Politecnico di Milano.
- Kathrin Perry (M.Sc., 2013), “Biobjective Robust Linear Programs,” Clemson University.
- Amanda Jones (M.Sc., 2013), “Mixed Integer Optimization for Identification with Multiple Data Clusters,” Clemson University.
- Erica Deahl (M.Sc., 2013), “Linear relaxations for sparse quadratic optimization problems,” Clemson University.
- Patrick Davis (M.Sc., 2013), “Lifted Inequalities for Quadratic MINLPs,” Clemson University.
- Ruobing Shen (M.Sc., 2012), “Convex Hull Characterization of Special Polytopes in n -ary Variables,” Clemson University.
- Cameron Megaw (M.Sc., 2012), “Branching Rules for Minimum Congestion Multi-Commodity Flow Problem,” Clemson University.
- Suo Mei (M.Sc., 2012), “Solution Methods For Quadratic Non-convex Optimization,” Clemson University.
- Arti Ramanathan (M.Eng., 2010), “Analysis of a shared protection network design problem,” Lehigh University.
- Nada Es-Sakli (M.Sc., 2010), “Column generation techniques for the graph K -clustering problem,” Lehigh University.
- Alberto Totaro and Federico Senaldi (M.Sc., 2005), “Lagrangian Relaxation and heuristic approaches for multi-level network design,” Politecnico di Milano.
- Sara Parolin (M.Sc., 2004), “Column generation for the design of networks under the statistical multiplexing assumption,” Politecnico di Milano.

- Alessandro Cisco (2003), “Heuristics for multi-level network design,” Politecnico di Milano.

Undergraduate (Dept. of Electronics and Computer Science, Politecnico di Milano):

- Giulio Cavitelli (2005), Lagrangian Relaxation for the problem of designing a network under survivability constraints.

Invited presentations

- (1) P. Belotti, “Spatial branching for a class of MIP problems”, Workshop on Recent Advances in Optimization, Fields Institute, University of Toronto, Canada (12 October 2023).
- (2) P. Belotti, F. Malucelli, “Network Expansion Optimization: multimodal transport on water canals, bike trails, and railways”, Joint Research Center, Sevilla, Spain (8 September 2022).
- (3) P. Belotti, F. Malucelli, “Multimodal transport networks: a case study with water canals, bicycle trails, and railways”, EURO PhD School on Data Driven Decision Making and Optimization, Sevilla (June 20, 2022).
- (4) P. Belotti, “Convex hull of bounded monomials on two-variable cones”, Dip. di Matematica, Università di Pavia (June 9, 2022).
- (5) P. Belotti, “Convex hull of bounded monomials on two-variable cones”, Machine Learning NeEDS Mathematical Optimization Seminar series, online (March 7, 2022).
- (6) P. Belotti, “Solving large-scale discrete quadratic optimization problems”, POEMA (Polynomial Optimization, Efficiency through Moments and Algebra) Industrial Workshop, online (December 14, 2021).
- (7) P. Belotti, T. Mullin, “Optimal selection of fixed-size populations: An application to tree breeding”, Strathclyde University, Glasgow (October 23 2018).
- (8) P. Belotti, B. Soylu, M. Wiecek, “Branch and bound for biobjective mixed integer optimization”, NHH, Bergen (September 14, 2017).
- (9) P. Belotti, T. Mullin, “Optimal selection of fixed-size populations: An application to tree breeding”, Lancaster University (March 8 2017).
- (10) P. Belotti, J. C. Góez, T. Ralphs, T. Terlaky, I. Pólik, “Solving conic discrete optimization problems with disjunctive programming”, Oxford University (October 26 2017).
- (11) P. Belotti, “Solving large-scale optimization problems”, University of Southampton (July 3, 2017).
- (12) P. Belotti, J. Lee, R. Weismantel, “Mixed integer nonlinear programming”, CORE50, celebrating the 50th anniversary of CORE, Université Catholique de Louvain (May 24, 2016).
- (13) P. Belotti, T. Mullin, “Optimal selection of fixed-size populations: An application to tree breeding”, Imperial College, London (March 9, 2016).
- (14) P. Belotti, “Robust optimization with the Xpress Optimizer”, Computational Optimization at Work, ZIB Berlin (October 6, 2015).
- (15) P. Belotti, B. Soylu, M. Wiecek, “Branch and bound for biobjective mixed integer optimization”, Université de Liège (May 20, 2015).
- (16) P. Belotti, B. Soylu, M. Wiecek, “Branch and bound for biobjective mixed integer optimization”, TJ Watson IBM research center, Yorktown Heights, NY (March 4, 2014).
- (17) P. Belotti, J. C. Góez, T. Ralphs, T. Terlaky, I. Pólik, “Disjunctive conic cuts for mixed integer convex optimization”, Université Paris Dauphine (November 12, 2013).
- (18) P. Belotti, T. Berthold, “Heuristic methods for MINLP”, ETH Zürich, Switzerland (June 20, 2012).
- (19) P. Belotti, J. C. Góez, T. Ralphs, T. Terlaky, I. Pólik, “Conic representation of the convex hull of disjunctive convex sets”, IBM Research Center, Zürich, Switzerland (June 18, 2012).

- (20) P. Belotti, T. Berthold, "Heuristic methods for MINLP", SAS Institute, Cary NC (June 8, 2012).
- (21) P. Belotti, T. Berthold, "Two heuristics for MINLP", Argonne National Laboratories, Argonne IL (June 29, 2011).
- (22) P. Belotti, "Couenne, an Open-Source solver for non-convex Mixed Integer Nonlinear Optimization," seminar series in Industrial Optimization, the Fields Institute, Toronto (ON), Canada (October 5, 2010).
- (23) P. Belotti, A.J. Miller, M. Namazifar, "Valid inequalities for sets defined by multilinear functions," Toulouse Conference on Global Optimization (TOGO), ENSEEIHT, Toulouse, France (September 3, 2010) – plenary talk.
- (24) P. Belotti, J. Lee, L. Liberti, F. Margot, A. Wächter, "Disjunctions in non-convex MINLP: branching and inequalities," Konrad Zuse Zentrum für Informationstechnik, Berlin (July 7, 2009).
- (25) P. Belotti, J. Lee, L. Liberti, F. Margot, A. Wächter, "Disjunctions in non-convex MINLP: branching and inequalities," Institut de Mathématiques, Université Bordeaux 1 (December 15, 2009).
- (26) P. Belotti, "Finding postdocs," Packer House, Lehigh University, Bethlehem PA (November 16, 2009).
- (27) P. Belotti, P. Bonami, J. Lee, F. Margot, A. Wächter, "A Coin-OR tool for mixed-integer non-convex programming," University of New York at Buffalo (January 26, 2007).
- (28) P. Belotti, C. Spinelli, E. Pedrinelli, M. Fumagalli, V. Mascolo, "Evolution of traffic demand and dimensioning a metro-regional transport network", Fotonica 2005, Trani, Italy (May 30, 2005).
- (29) P. Belotti, F. Malucelli, "Shared protection network design through Lagrangian relaxation," Boğaziçi Üniversitesi, Istanbul, Turkey (October 3, 2003).

Memberships

- 2010-: COIN-OR Foundation
- 2008-: Mathematical Optimization Society

Consulting

- 2011: Juniper, Sunnyvale CA: design of optical networks under uncertainty in the demand volume.
- 2012: Italian Institute for Statistics (ISTAT): Mixed integer nonlinear optimization models for balanced sampling.

Software

- COUENNE: A Branch&Bound solver for non-convex, Mixed Integer Nonlinear problems, based on Linearization techniques and released within the Coin-OR framework.
- CRÈME: Parallel randomized thermal relaxation method. Tested on instances with up to 18 million constraints on a BlueGene/L supercomputer. Released within the Coin-OR framework.