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RESEARCH INTERESTS AND EXPERTISE

General: Business Analytics (BA), Operations Research (OR), Management Science (MS), Information Systems (IS)

Specializations: Nonlinear Optimization, Algorithm and Software Development, BA / OR / MS / IS Applications

EDUCATION AND DEGREES

M.Sc. *Summa cum laude*, Applied Mathematics / Operations Research, Eötvös Loránd University (ELTE), Hungary, 1973

Ph.D., Probability Theory / Stochastic Optimization, Moscow State University, 1982

D.Sc., Mathematics / Global Optimization, Hungarian Academy of Sciences, 2000

ACADEMIC AND PROFESSIONAL POSITIONS

2020-Present	Associate Professor of Professional Practice, Rutgers University, New Brunswick, NJ, USA
2016–2020	Professor of Practice, Lehigh University, Bethlehem, PA, USA
2015–2016	Associate Professor, Saint Mary's University, Halifax, NS, Canada
2011–2016	Adjunct Professor, Özyeğin University, Istanbul, Turkey
2009–2011	Visiting Professor, Özyeğin University, Istanbul, Turkey
2008–2009	Visiting Associate Professor, Bilkent University, Ankara, Turkey
1994–2007	Adjunct Professor, Dalhousie University, Halifax, NS, Canada
1994–2016	Proprietor & Research Scientist, Pintér Consulting Services, Inc., Halifax, NS, Canada
1993–1994	Senior Research Associate, Atlantic Industrial Research Institute, Halifax, NS, Canada
1991–1993	Associate Professor and Technical Project Director, Dalhousie University, Halifax, NS, Canada
1990–1991	Senior Research Scientist, Institute for Inland Water Management and Wastewater Treatment, Lelystad, Netherlands
1989–1990	Scientific Advisor, Institute of Transport Sciences, Budapest, Hungary

1988–1989	Scientific Advisor, Water Resources Research Centre, Budapest, Hungary
1987	Visiting Research Fellow, Delft University of Technology, Netherlands
1983–1986	Scientific Advisor, Water Resources Research Centre, Budapest, Hungary
1981–1983	Senior Research Associate and Lecturer, Eötvös University of Sciences, Budapest, Hungary
1980–1981	Senior Research Associate and Lecturer, Computing Center for Universities and University of Economics, Budapest, Hungary
1979–1980	Senior Research Associate, International Institute of Control Sciences Moscow, Russia (18 months)
1976	UNDP Research Fellow, USA (6 months)
1973–1979	Research Associate and Lecturer, Computing Center for Universities and University of Economics, Budapest, Hungary
1968-1973	Student, Eötvös University of Sciences, Budapest, Hungary

JOURNAL PUBLICATIONS (PEER-REVIEWED)

1. Maximal deviation of empirical pdf-sequences: application to a multi-period reliability type inventory model. *Alkalmazott Matematikai Lapok* 1 (1975) 189-195. (In Hungarian)
2. Technico-economic water quality model of the Sajó river. *Hidrológiai Közlöny* 57 (1977) 27-37. Co-authors: Bora, Gy., Hock, B., Mucsy, Gy., Réczey, G. and Rösler, K. (In Hungarian)
3. Water resources management model for the Sajó region. *Vizügyi Közlemények* (1977) 3, 418-426. (In Hungarian)
4. Random search procedures: convergence and numerical efficiency. *Alkalmazott Matematikai Lapok* 4 (1978) 197-228. (In Hungarian)
5. Stochastic models for regional water quality management. *Hidrológiai Közlöny* 60 (1980) 364-373. (In Hungarian)
6. On a method of random search for unconstrained minimization. *Avtomatika i Telemekhanika* (1980) No. 12, 76-85. (In Russian; English translation *Automation and Remote Control* (1980) No. 12.)
7. Hybrid procedures for solving non-smooth stochastic problems. *Alkalmazott Matematikai Lapok* 7 (1981) 83-97. (In Hungarian)
8. Stochastic methods for solving optimization problems. *Alkalmazott Matematikai Lapok* 7 (1981) 217-252. (In Hungarian)
9. Hybrid procedures for solving non-smooth constrained stochastic optimization problems. *Vestnik MGU, Ser. VMK* (1982) 1, 39-49. (In Russian; English translation *Moscow University Computational Mathematics and Cybernetics* (1982) No. 1.)
10. An improved Chebyshev inequality for estimating function values by Monte Carlo procedures. *Alkalmazott Matematikai Lapok* 9 (1983) 93-104. (In Hungarian)
11. Convergence properties of stochastic optimization procedures. *Optimization* 15 (1984) 405-427.

12. A modified Bernstein-technique for estimating noise-perturbed function values. *Calcolo* 22 (1985) 241-247.
13. A note on the frequency analysis and the statistical extrema of maximal precipitation. *Vizügyi Közlemények* 67 (1985) 348-353. (In Hungarian)
14. Globally convergent methods for n-dimensional multiextremal optimization. *Optimization* 17 (1986) 187-202.
15. Extended univariate algorithms for n-dimensional global optimization. *Computing* 36 (1986) 91-103.
16. Multiextremal optimization for calibrating water resources models. *Environmental Software* 1 (1986) 98-105. Co-authors: Szabó, J. and Somlyódy, L.
17. Global optimization on convex sets. *Operations Research Spektrum* 8 (1986) 197-202.
18. Water quality management: Methodology and applications. *Foundations of Control Engineering* 11 (1986) 177-189. Co-author: Somlyódy, L.
19. Global optimization procedures and their applications in water resources modelling. *Vizügyi Közlemények* 68 (1986) 520-529. (In Hungarian) Co-author: Szabó, J.
20. Optimization of regional water quality monitoring strategies. *Water Science and Technology* 19 (1987) 721-727. Co-author: Somlyódy, L.
21. A conceptual optimization framework for regional acidification control. *Systems Analysis, Modelling and Simulation* 4 (1987) 213-226.
22. Branch-and-bound algorithms for solving global optimization problems with Lipschitzian structure. *Optimization* 19 (1988) 101-110.
23. Deterministic approximations of probability inequalities. *ZOR – Methods and Models of Operations Research, Series Theory* 33 (1989) 219-239.
24. Optimization in risk management. *Civil Engineering Systems* 6 (1989) 122-128. Co-author: Cooke, R.
25. Environmental risk analysis and management. *Hidrológiai Közlöny* 69 (1989) 264-268. (In Hungarian)
26. Solving nonlinear equation systems via global partition and search: some experimental results. *Computing* 43 (1990) 309-323.
27. On the convergence of adaptive partition algorithms in global optimization. *Optimization* 21 (1990) 231-235.
28. Risk management of accidental water pollution: an illustrative application. *Water Science and Technology* 22 (1990) 265-274. Co-authors: Benedek, P. and Darázs, A.
29. Globally optimized calibration of environmental models. *Annals of Operations Research* 25 (1990) 211-222.
30. Adaptive partition strategies for solving global optimization problems. *Alkalmazott Matematikai Lapok* 15 (1990/1991) 329-352. (In Hungarian)
31. Stochastic modelling and optimization for environmental management. *Annals of Operations Research* 31 (1991) 527-544.
32. Global convergence revisited: Reply to A. Žilinskas. *Computing* 46 (1991) 87-91.
33. Set partition by globally optimized cluster seed points. *European Journal of Operational Research* 51 (1991) 127-135. Co-author: Pesti, G.
34. An application of Lipschitzian global optimization to product design. *Journal of Global Optimization* 1 (1991) 389-401. Co-author: Hendrix, E.M.T.

35. Convergence qualification of partition algorithms in global optimization. *Mathematical Programming* 56 (1992) 343-360.
36. The impact of accelerating tools on the interval subdivision algorithm for global optimization. *European Journal of Operational Research* 65 (1993) 314-320. Co-author: Csendes, T.
37. Environmental model calibration under different problem specifications: an application to the model SED. *Ecological Modelling* 68 (1993) 1-19. Co-author: van der Molen, D.T.
38. A new interval method for locating the boundary of level sets. *International Journal of Computer Mathematics* 49 (1993) No. 1-2, 53-59. Co-author: Csendes, T.
39. An intelligent decision support system for assisting industrial wastewater management. *Annals of Operations Research* 58 (1995) 455-477. Co-authors: Fels, M, Lycon, D.S., Meeuwig, D.J., and Meeuwig, J.W.
40. Continuous and Lipschitz global optimization: algorithms and applications. *Sigma* XXVII (1996) 3, 71-104. (In Hungarian)
41. Optimized design of wastewater treatment systems: application to the mechanical pulp and paper industry. I. Design and cost relationships. *The Canadian Journal of Chemical Engineering* 75 (1997) 437-451. Co-authors: Fels, M. and Lycon, D.S.
42. Automatic model calibration applying global optimization techniques. *Environmental Modeling and Assessment* 3 (1998) 117-126. Co-authors: Finley, J.R. and Satish, M.G.
43. Globally optimized spherical point arrangements: model variants and illustrative results. *Annals of Operations Research* 104 (2001) 213-230.
44. Finding elliptic Fekete points sets: two numerical solution approaches. (Revised version.) *Journal of Computational and Applied Mathematics* 130 (2001) No. 1-2, pp. 205-216. Co-authors: Stortelder, W.J.H. and de Swart, J.J.B.
45. An optimization-based approach to the multiple static delivery technique in radiation therapy. (Revised version.) *Annals of Operations Research* 119 (2003) 205-227. Co-authors: Tervo, J., Kolmonen, P., Lyyra-Laitinen, T., and Lahtinen, T.
46. A global optimization approach to laser design. *Optimization and Engineering* 4 (2003) (3) 177-196. Co-authors: Isenor, G. and Cada, M.
47. Globally optimized calibration of nonlinear models: techniques, software, and applications. *Optimization Methods and Software* 18 (2003) (3) 335-355.
48. Comparative assessment of algorithms and software for global optimization. *Journal of Global Optimization* 31 (2005) 613-633. Co-authors: Khompatraporn, C. and Zabinsky, Z.B.
49. Nonlinear optimization in *Mathematica* with *MathOptimizer Professional*. *Mathematica in Education and Research* 10 (2005) 2, 1-18. Co-author: Kampas, F.J.
50. Configuration analysis and design by using optimization tools in *Mathematica*. *The Mathematica Journal* 10 (2006) 1, 128-154. Co-author: Kampas, F.J.
51. Global Optimization Toolbox for Maple: an introduction with illustrative applications. *Optimization Methods and Software* 21 (2006) 565-582. Co-authors: Linder, D. and Chin, P.
52. Nonlinear optimization with GAMS/LGO. *Journal of Global Optimization* 38 (2007) 79-101.

53. Integrated production system optimization using the Lipschitz Global Optimizer and the Discrete Gradient Method. *Journal of Industrial and Management Optimization* 3 (2007) 2, 257-277. Co-authors: Mason, T.L., Emelle, C., van Berkel, J., Bagirov, A.M., and Kampas, F.J.
54. Integrated software tools for the OR/MS classroom. *Algorithmic Operations Research* 3 (2008) 82–91. Co-authors: Castillo, I. and Lee, T.
55. Solving circle packing problems by global optimization: numerical results and industrial applications. *European Journal of Operational Research* 191 (2008) 786–802. Co-authors: Castillo, I. and Kampas, F.J.
56. Model development and optimization in interactive computing environments. *Central European Journal of Operations Research* 16 (2008) 165–178.
57. A global optimization study on the devolatilisation kinetics of coal, biomass and waste fuels. *Fuel Processing Technology* 90 (2009) 762-769. Co-authors: Pantoleontos, G., Basinas, P. Skodras, G., Grammelis, P. Topis, S., Sakellariopoulos, G.P.
58. A computational geometric / information theoretic method to invert physics-based MEC model attributes for MEC discrimination. *Mathematical Machines and Systems* (2011) No 2, pp. 50-61. (Published by the National Academy of Sciences of Ukraine.) Co-authors: Deschaine, L.M. and Nordin, P.
59. Benchmarking nonlinear optimization software in technical computing environments: global optimization in *Mathematica* with *MathOptimizer Professional*. *TOP* (An official journal of the Spanish Society of Statistics and Operations Research) 21 (2013), 133-162. Co-author: Kampas, F.J.
60. Calibrating artificial neural networks by global optimization. *Expert Systems with Applications* 39 (2012) 25–32.
61. Development and calibration of currency market strategies by global optimization. *Journal of Global Optimization* 56 (2013), 353-371. Co-author: Çağlayan, M.O.
62. Integrated experimental design and nonlinear optimization to handle computationally expensive models under resource constraints. *Journal of Global Optimization* 57 (2013) 191-215. Co-author: Horváth, Z.
63. Groundwater remediation design using physics-based flow, transport, and optimization technologies. *Environmental Systems Research* 2 (2013) 2:6. Available at <http://www.environmentalsystemsresearch.com/content/2/1/6>. Co-authors: Deschaine, L.M. and Lillys, T.P. <https://doi.org/10.1186/2193-2697-2-6>.
64. Benchmarking the LGO solver suite within the COCO test environment. *Acta Technica Jauriensis* 7 (2014), 156–171. Co-author: Hatwágner, M.F.
65. Distance correlation based nearly orthogonal space-filling experimental designs. *International Journal of Experimental Design and Process Optimisation* 4 (2015) 3/4, 216-233. Co-authors: Shamsuzzaman, Md. and Satish, M.G.
66. Obituary: János Fodor 1956–2016. *European Journal of Operational Research* 258 (2017) 2. Co-author: Fullér, R.
67. How difficult is nonlinear optimization? A practical solver tuning approach, with illustrative results. *Annals of Operations Research* 265 (2018) 119-141.
68. Globally optimized packings of non-uniform size spheres in R^d : a computational study. *Optimization Letters* 12 (2018) 585-613. Co-authors: Kampas, F.J. and Castillo, I.

69. Optimized ellipse packings in regular polygons. *Optimization Letters* 13 (2019) 1583–1613. Co-authors: Kampas, F.J. and Castillo, I.
70. A novel optimization approach for developing foods that address childhood malnutrition. (Full research article) *Proc. IEEE Global Humanitarian Technology Conference*, Seattle, October 17–20, 2019. Co-authors: Fereno, C., Shankar, S., Corr, S., and Herz, L. <https://doi.org/10.1109/GHTC46095.2019.9033043>.
71. Packing ovals in optimized regular polygons. *Journal of Global Optimization* 77 (2020) 175–196. Co-authors: Kampas, F.J. and Castillo, I.
72. Largest small n-polygons: numerical results and conjectured optima. (Submitted)

JOURNAL PUBLICATIONS (NON PEER-REVIEWED)

I don't have a list of such publications. Instead, I present below a selection of contributions to conference proceedings. Many of these were also peer-reviewed.

I also have a Selected list of Research Reports and Other Publications, not included here.

1. Mathematical model for water quality management in the Sajó river, pp. 400–431. In: Deininger, R.A., ed. *Proc. WHO Seminar on Systems Analysis in Water Quality Management* (Budapest, 1975); University of Michigan Press, Ann Arbor, 1977. Co-authors: Bora, Gy., Francia, L., Kulcsár, D. and Réczey, G.
2. On the maximal distance between two series of empirical distribution functions, with application to an inventory problem. *Methods of Operations Research* 29 (1978) 623–636.
3. Some methodological aspects of optimization techniques in water quality management. In: *Proc. WHO Seminar on Water Quality Management* (Budapest, 1977), pp. 164–171. Water Resources Management Institute, Budapest, 1978.
4. On the convergence and efficiency of random search optimization. *Methods of Operations Research* 33 (1979) 347–362.
5. On a stochastic model of reservoir system sizing. In: Iracki, K., Malanowski, K. and Walukiewicz, S., eds. *Proceedings of the 9th IFIP Conference on Optimization Techniques* (Warsaw, 1979), pp. 546–558. Lecture Notes in Control and Information Sciences 23, Springer, Berlin.
6. Stochastically combined optimization procedures, their convergence and numerical performance. *Methods of Operations Research* 43 (1981) 143–150.
7. Stochastic procedures for solving optimization problems. *Methods of Operations Research* 45 (1983) 135–144.
8. Multiextremal (global) optimization algorithms for engineering applications. In: *Proc. Fourth International Conference on Engineering Software (ENGSOFT '85)*, Kensington, 1985), pp. 7–17 to 7–25. Springer, Berlin, 1985. Co-author: Szabó, J.
9. Global optimization algorithms: An axiomatic approach. In: *Proc. 30th Scientific Colloquium, Series E*, pp. 117–120. Technical University of Ilmenau, 1985.
10. Contributions to the methodology of stochastic optimization. In: *Proc. IFIP Workshop on Stochastic Programming* (Gargnano, Sept. 1983). Lecture Notes in Control and Information Sciences 76, Springer, Berlin, 1986.

11. A stochastic lake eutrophication management model. In: Arkin, V.I., Shiriaev, A.N. and Wets, R., eds. *Stochastic Optimization (Kiev, 1984)*, pp. 501-512. Lecture Notes in Control and Information Sciences 81, Springer-Verlag, Berlin, 1986. Co-author: Somlyódy, L.
12. Sampling strategy optimization for regional water quality monitoring. In: *Proc. 5th IFAC/IFORS Conference on Dynamic Modelling and Control of National Economies*. (Budapest, June 1986.) Co-author: Somlyódy, L.
13. Global optimization algorithms: Theory and some applications. In: Prékopa, A. Straziczky, B. and Szelezsán, J., eds. *Proc. 12th IFIP Conference on Systems Modelling and Optimization* (Budapest, 1985), pp. 704-713. Lecture Notes in Control and Information Sciences 84, Springer, Berlin, 1986. Co-author: Szabó, J.
14. Estimating averages and detecting trends in water quality data. In: *Proc. 2nd Scientific Assembly of the International Association for Hydrologic Sciences* (Budapest, 1986); *IAHS Publications* 157 (1986) 61–69. Co-authors: Somlyódy, L., Koncsos, L., Hanácsék, I. and Juhász, I.
15. Water quality and management modelling of non-point source pollution – A case study. In: *Proc. 2nd Scientific Assembly of the International Association for Hydrologic Sciences* (Budapest, 1986); *IAHS Publications* 157 (1986) 197–206. Co-author: Jolánkai, G.
16. Optimization of regional water quality monitoring strategies. In: *Proc. 2nd Scientific Assembly of the International Association for Hydrologic Sciences* (Budapest, 1986); *IAHS Publications* 158 (1986) 259–268. Co-author: Somlyódy, L.
17. Optimization models in water quality control. In: Beck, M.B., ed. *Systems Analysis in Water Quality Management (Proc. WATERMATEX 87, London, 1987)* pp. 201–210. Pergamon Press, Oxford, 1987. Co-author: Somlyódy, L.
18. Extreme order statistics applied for optimum estimation in ‘hard’ MP problems. In: Vísek, J.A. (Ed.), *Transactions of the Tenth Prague Conference on Information Theory, Statistical Decision Functions, and Random Processes* (Prague, July, 1986), 321-328. Publishing House of the Czechoslovakian Academy of Sciences, Prague, 1988. Co-author: C. Fodor, J.
19. A new stochastic approach for controlling point source river pollution. In: *Proc. 3rd Scientific Assembly of the International Association for Hydrologic Sciences* (Baltimore, 1989); *IAHS Publications* 180 (1989) 241–249. Co-authors: Boon, J.G. and Somlyódy, L.
20. Combining expert opinions: An optimized negotiation approach. In: Chikán, A., ed. *Proc. 4th Int. Conf. on the Foundations and Applications of Utility, Risk and Decision Theory* (Budapest, June 1988). Reidel, Dordrecht, 1990. Co-author: Cooke, R.
21. Aquifer model calibration applying global optimization. *Proc. 3rd IASTED Conf. Reliability, Control and Risk Assessment* (Washington, D.C., Oct. 1994.) Co-authors: Finley, J.R. and Satish, M.G.
22. Optimal load distribution. In: *Advances in Military Load Carriage. Proc. TTCP-TLG-8 and TCIEM Workshop* (Queen’s University, Kingston, Ontario, October 1996), pp. 26-27. Co-author: Pelot, R.P.
23. A global optimization approach to inverse groundwater model calibration. Extended abstract in: *Proc. IASTED Conf. MIC'98* (Grindelwald, Switzerland, Febr. 18-20, 1998.) Co-author: Satish, M.G.

24. An application development system for global optimization. Invited tutorial presentation. Extended abstract in: *Proc. IASTED Conf. MIC'98* (Grindelwald, Switzerland, February 18-20, 1998.)
25. Computational global optimization: Models, algorithms and applications. Invited tutorial presentation. In: Mohammadian, M., ed. *Concurrent Systems Engineering Series 55 (Proc. CIMCA'99, Vienna, Febr. 17-19, 1999)*; pp. 1-10. IOS Press, Amsterdam, 1999.
26. Optimization of finite element models with *MathOptimizer* and *ModelMaker*. *Proceedings of the 2003 Wolfram Technology Conference*, <http://library.wolfram.com/infocenter/Conferences/5347/>. Co-author: Purcell, C.J.
27. *MathOptimizer Professional*. *Proceedings of the 2003 Wolfram Technology Conference*, <http://library.wolfram.com/infocenter/Conferences/4905/>. Co-author: Kampas, F.J.
28. Generalized circle packings: model formulations and numerical results. *Proceedings of the 6th International Mathematica Symposium* (Banff, August 2004). Co-author: Kampas, F.J.
29. Advanced nonlinear optimization in *Mathematica*. *Proceedings of the 2004 Wolfram Technology Conference* <http://library.wolfram.com/infocenter/Conferences/5398/>. Co-author: Kampas, F.J.
30. Global Optimization Toolbox for Maple: introduction and applications. In: Koutsiras, I.S., ed. *Proceedings of the 2005 Maple Conference*, pp. 70-85. Maplesoft, Waterloo, ON, 2005.
31. Global optimization in *Mathematica*: a comparative numerical study. *Proceedings of the 2005 Wolfram Technology Conference* <http://library.wolfram.com/infocenter/Conferences/5824/> Co-author: Kampas, F.J.
32. *MathOptimizer Professional*: new features and applications. *Proceedings of the 2006 Wolfram Technology Conference* <http://library.wolfram.com/infocenter/Conferences/6471/>. Co-author: Kampas, F.J.
33. Testing the "No free lunch theorem" for circle and sphere packings with *MathOptimizer Professional*. *Proceedings of the 2007 Wolfram Technology Conference* <http://library.wolfram.com/infocenter/Conferences/6952/>. Co-author: Kampas, F.J.
34. Optimized calibration of currency market strategies. Co-author: Çağlayan, M.O. In: *Proceedings of the Conference on Continuous Optimization and Information-Based Technologies in the Financial Sector* (24th MEC-EUROPT, Izmir University of Economics, Izmir, Turkey, June 23-26, 2010).
35. Global optimization in practice: solver implementations and applications. *Proceedings of the Conference on Challenges in Statistics and Operations Research* (CSOR2011), Kuwait City, Kuwait, March 8-10, 2011.

BOOK CHAPTER CONTRIBUTIONS

Refereed Chapters in Books

1. Stochastic optimization methods for solving mathematical programming problems. In: Mogyoródi, J., Vincze, I. and Wertz, W., eds. *Statistics and Probability*, pp. 271–282. Publishing House of the Hungarian Academy of Sciences, Budapest, 1984.
2. Decision models in water quality management. In: Katona, E., ed. *Handbook of Water Quality Management*, pp. 152–159. AQUA Publishers, Budapest, 1989. (In Hungarian)
3. Lipschitzian global optimization: Some prospective applications. In: Floudas, C.A. and Pardalos, P.M., eds. *Recent Advances in Global Optimization*, pp. 399–432. Princeton University Press, Princeton, New Jersey, 1992.
4. LGO: A program system for continuous and Lipschitz optimization. In: Bomze, I.M., Csendes, T., Horst, R. and Pardalos, P.M., eds. *Developments in Global Optimization*, pp. 183-197. Kluwer Academic Publishers, Dordrecht, 1997.
5. A model development system for global optimization. In: De Leone, R., Murli, A., Pardalos, P.M. and Toraldo, G., eds. *High Performance Algorithms and Software in Nonlinear Optimization*, pp. 301-314. Kluwer Academic Publishers, Dordrecht, 1998.
6. Extremal energy models and global optimization. In: Laguna, M. and González-Velarde, J-L., eds. *Computing Tools for Modeling, Optimization and Simulation*, pp. 145-160. Kluwer Academic Publishers, Dordrecht, 2000.
7. Continuous global optimization: Software. Invited contribution to the *Encyclopedia of Optimization* (Floudas, C. A. and Pardalos, P.M., eds.) Kluwer Academic Publishers, Dordrecht, 2001.
8. Continuous global optimization: Illustrative applications. Invited contribution to the *Encyclopedia of Optimization* (Floudas, C. A. and Pardalos, P.M., eds.) Kluwer Academic Publishers, Dordrecht, 2001.
9. Global optimization in the analysis and management of environmental systems. Invited contribution to the *Encyclopedia of Optimization* (Floudas, C. A. and Pardalos, P.M., eds.) Kluwer Academic Publishers, Dordrecht, 2001.
10. Global optimization: Software, test problems, and applications. In: Pardalos, P. M. and Romeijn, H. E., eds. *Handbook of Global Optimization, Volume 2*, pp. 515-569. Kluwer Academic Publishers, Dordrecht, 2002.
11. O.R. model development and optimization with Mathematica. In: Golden, B., Raghavan, S., and Wasil, E., eds. *The Next Wave in Computing, Optimization, and Decision Technologies*, pp. 285-302. Springer Science + Business Media, New York, 2005. Co-author: Kampas, F.J.
12. Nonlinear optimization in modeling environments: software implementations for compilers, spreadsheets, modeling languages, and integrated computing systems. In: V. Jeyakumar and A.M. Rubinov, eds. *Continuous Optimization: Current Trends and Applications*, pp. 147-173. Springer Science + Business Media, New York, 2005.
13. MathOptimizer Professional: Key features and illustrative applications. In: Liberti, L., and Maculan, N., eds. *Global Optimization: From Theory to Implementation*, pp. 263-279. Springer Science + Business Media, New York, 2006. Co-author: Kampas, F.J.

14. Preface. In: Pintér, J. D., ed. *Global Optimization: Scientific and Engineering Case Studies*, pp. ix-xxi. Springer Science + Business Media, New York, 2006.
15. Determination of a distributed feedback laser's field solution using global optimization. In: Pintér, J. D., ed. *Global Optimization: Scientific and Engineering Case Studies*, pp. 181-212. Springer Science + Business Media, New York, 2006. Co-authors: Isenor, G. and Cada, M.
16. Optimization of radiation therapy dose delivery with multiple static collimation. In: Pintér, J. D., ed. *Global Optimization: Scientific and Engineering Case Studies*, pp. 461-485. Springer Science + Business Media, New York, 2006. Co-authors: Tervo, J., Kolmonen, P., and Lyyra-Laitinen, T.
17. Computational global optimization. In: *TutORials in Operations Research*, Published by the Institute for Operations Research and the Management Sciences (INFORMS), Hanover, MD, 2007. Co-author: Lasdon, L.S.
18. Global optimization in practice: State-of-the-art and perspectives. In: Gao, D. Y. and Sherali, H. D., eds., *Advances in Applied Mathematics and Global Optimization*, pp. 377-404. Springer Science + Business Media, New York, 2009.
19. Software development for global optimization. In: Pardalos, P.M. and T. F. Coleman, eds. *Global Optimization: Methods and Applications*, pp. 183-204. Fields Institute Communications Volume 55. Published by the American Mathematical Society, Providence, RI, 2009.
20. Model development and optimization for space engineering. In: Fasano, G. and Pintér, J.D., eds., *Modeling and Optimization in Space Engineering*, pp. 1-32. Springer Science + Business Media, New York, 2013. Co-author: Fasano, G.
21. Global optimization approaches to sensor placement: Model versions and illustrative results. In: Fasano, G. and Pintér, J.D., eds., *Modeling and Optimization in Space Engineering*, pp. 235-247. Springer Science + Business Media, New York, 2013. Co-author: Fasano, G.
22. Preface. In: Fasano, G. and Pintér, J.D., eds., *Optimized Packings with Applications*, pp. v-xii. Springer Science + Business Media, New York, 2015. Co-author: Fasano, G.
23. Preface. In: Fasano, G. and Pintér, J.D., eds., *Space Engineering: Modeling and Optimization with Case Studies*, pp. v-vii. Springer Science + Business Media, New York, 2016. Co-author: Fasano, G.
24. Nonlinear regression analysis by global optimization: a case study in space engineering. In: Fasano, G. and Pintér, J.D., eds., *Space Engineering: Modeling and Optimization with Case Studies*, pp. 287-302. Springer Science + Business Media, New York, 2016. Co-authors: Fasano, G., Castellazzo, A., and Vola, M.
25. Optimal packing of general ellipses in a circle. In: Takáč, M. and Terlaky, T., eds., *Modeling and Optimization: Theory and Applications (MOPTA 2016)*, pp. 23-37. Springer Science + Business Media, New York, 2017. Co-authors: Kampas, F.J. and Castillo, I.
26. Efficient piecewise linearization for a class of non-convex optimization problems: comparative results and extensions. In: Pintér, J.D. and Terlaky, T., eds., *Modeling and Optimization: Theory and Applications (MOPTA 2017)*. Springer Science + Business Media, New York, 2018. Co-author: Fasano, G.

27. Preface. In: Pintér, J.D. and Terlaky, T., eds., *Modeling and Optimization: Theory and Applications (MOPTA 2017)*. Springer Science + Business Media, New York, 2019. Co-author: Terlaky, T.
28. Preface. In: Fasano, G. and Pintér, J.D., eds., *Optimization in Space Engineering*. Springer Science + Business Media, New York, 2019. Co-author: Fasano, G.
29. Optimized packings in space engineering applications: Part I. In: Fasano, G. and Pintér, J.D., eds., *Optimization in Space Engineering 2019*. Springer Science + Business Media, New York, 2019. Co-authors: Stoyan, Y., Pankratov, A., Romanova, T., Stoian, Y. E., Chugay, A., Fasano, G.

BOOKS

Monographs

1. *Stochastic Optimization Procedures*. (University lecture notes, in Hungarian) Hungarian State Textbook Publishers, 1984.
2. *Global Optimization in Action – Continuous and Lipschitz Optimization: Algorithms, Implementations and Applications*. Kluwer Academic Publishers, Dordrecht, 1996. Now published by Springer Science + Business Media, New York.
3. *Computational Global Optimization in Nonlinear Systems – An Interactive Tutorial*. Lionheart Publishing, Atlanta, GA, 2001.
4. *Global Optimization with Maple: An Introduction with Illustrative Examples*. An electronic book published by Pintér Consulting Services, Halifax, NS; and by Maplesoft, Waterloo, ON, Canada, 2006.
5. *Global Optimization in Practice – Model Development, Software and Applications*. Springer Science + Business Media, New York (In progress)

Edited Books

1. *Global Optimization: Scientific and Engineering Case Studies*. Springer Science + Business Media, New York, 2006.
2. *Modeling and Optimization in Space Engineering*. Springer Science + Business Media, New York, 2013. Co-editor: Fasano, G.
3. *Optimized Packings With Applications*. Springer Science + Business Media, New York, 2015. Co-editor: Fasano, G.
4. *Space Engineering: Modeling and Optimization with Case Studies*. Springer Science + Business Media, New York, 2016. Co-editor: Fasano, G.
5. *Modeling and Optimization: Theory and Applications (MOPTA 2017)*. Springer Science + Business Media, New York, 2019. Co-editor: Terlaky, T.
6. *Modeling and Optimization in Space Engineering – State of the Art and New Challenges*. Springer Science + Business Media, New York, 2019. Co-editor: Fasano, G.

Technical Editor of Books by Other Authors

1. *Theory of Global Random Search*. Author: Zhigljavsky, A.A. Kluwer Academic Publishers, Dordrecht, 1991.

2. *Nonlinear Optimization Applications Using the GAMS Technology*. Author: Neculai, A. Springer Science + Business Media, New York, 2013.

PROCEEDINGS (PEER-REVIEWED)

N/A.

PRESENTATIONS

Summary

I have been visiting scholar, visiting professor, invited lecturer, workshop and short course presenter, contributing conference and workshop participant at universities, research institutions, industrial organizations, and conferences in more than 40 countries of the Americas, Asia, Europe, the Middle East, and the Pacific Region. An illustrative selection of invited lectures and workshops is listed below in the separate section devoted to presentations. A more detailed list of presentations is available upon request.

Additional Notes

1. All presentations listed below were given by myself: in most cases, I am the sole author.
2. In case of stand-alone workshops, I presented the event in 4 to 8 hours or during several days.
3. I also organized and chaired sessions e.g., at CORS, EURO, EUROPT and INFORMS and other international meetings. (There are too many of these sessions to remember and to itemize, only a few are mentioned below.)
4. All listed presentations were invited and partially or fully sponsored by the inviting party, except in a few cases when I (my own consulting company) paid for some or all expenses.
5. I have been a Traveling Speaker of the Canadian Operational Research Society (CORS) since 2002.
6. I have been an INFORMS Traveling Speaker since 2003.
7. At Lehigh University, my participation in the listed 2017 and 2018 conferences was supported by the University. I gave lectures at each of these events.

Selected List of Presentations

- Canadian International Development Agency (CIDA) Project lecturer. Beijing University, China, 1993 (2 weeks)

- CIDA Project advisor and course lecturer. Environmental Studies Centers Development Project, Indonesia, 1994-1995 (2 + 2.5 months)
- Global Optimization Workshop. Australian Institute for Operational Research, Melbourne, Australia, July 2001
- Global Optimization Software (Lecture), MOPTA Conference, McMaster University, Hamilton, Canada, August 2002
- Global Optimization Workshop, University of South Australia, Adelaide, Australia, November 2002
- Global Optimization Workshop, University of Ballarat, Australia, December 2002
- Global Optimization Workshop, INFORMS Texas Chapter, San Antonio, USA, March 2003
- Global Optimization Lecture Series, Trinity University, San Antonio, USA, March 2003
- Global Optimization Lecture Series, Tilburg University, Netherlands, April 2003
- Global Optimization (Invited semi-plenary lecture), Operations Research International Conference, Tilburg University, Netherlands, September 2004
- Global Optimization Workshop, Candiensten, Amsterdam, Netherlands, September 2004
- Global Optimization with Maple, Lectures sponsored by Maplesoft, Aachen, Stuttgart (Germany), Zurich (Switzerland), September 2004
- Global Optimization Lecture Series, UANL, Monterrey, Mexico, November 2004
- Global Optimization (Invited plenary lecture), IW04 Conference, University of Melbourne, Australia, December 2004
- Global Optimization Tutorial, ICOTA 2004, University of Ballarat, Australia, December 2004
- Global Optimization Workshop, Shell International Exploration and Production, Rijswijk, The Netherlands, April 2005
- Maplesoft Annual Conference (Invited lecture), Waterloo, Canada, July 2005
- Computational Global Optimization (Invited semi-plenary lecture), Conference on Complementarity, Duality, and Global Optimization in Science and Engineering, Virginia Tech, Blacksburg, USA, August 2005
- Applied Nonlinear Optimization Workshop, DRDC, Dartmouth, Canada, October 2005
- Applied Nonlinear Optimization Lecture Series, University of Girona, Spain, April 2006
- Computational Global Optimization: Software Development and Advanced Applications (Invited semi-plenary lecture, and four other presentations) 21st European Conference on Operational Research, University of Iceland, Reykjavik, July 2006
- Global Optimization: Software Development and Advanced Applications (Invited lecture), Fields Institute, Toronto, Canada, October 2006
- Optimization with Maple (Invited lecture), Atlantic Optimization Days, Fredericton, Canada, October 2006
- Computational Global Optimization (Invited presentation in the “*Great Unsolved Problems in OR*” session series, presenting also several other lectures), INFORMS Annual Meeting, Pittsburgh, USA, November 2006

- Global Optimization Course: Models, Algorithms, Software, and Applications, University of Jyväskylä, Finland, March 2007
- Global Optimization Workshop, Helsinki School of Economics, Finland, March 2007
- Global Optimization Workshop, Shell International Exploration and Production, Rijswijk, The Netherlands, March 2007
- Global Optimization Course: Models, Algorithms, Software, and Applications, Széchenyi University, Győr, Hungary, March 2007
- Global Optimization with Maple: An Introduction with Illustrative Examples, and Global Optimization in Practice: State-of-the-Art and Perspectives (Invited presentations), University of Saskatchewan and Saskatchewan CORS Section, Saskatoon, Canada, April 2007
- Computational Global Optimization (Invited presentation), Workshop on Global Optimization: Methods and Applications, Fields Institute, Toronto, Canada, May 2007
- Nonlinear Optimization in Integrated Computing Systems (Invited tutorial), CORS National Meeting, London, Canada, May 2007
- Modeling and Optimizing Nonlinear Systems in Integrated Computing Environments (Invited tutorial), INFORMS International Meeting, Rio Grande, Puerto Rico, July 2007
- Invited CORS Speaker lectures on continuous and mixed integer optimization, ICCOPT II & MOPTA, McMaster University, Hamilton, Canada, August 2007
- Computational Global Optimization (Invited tutorial), INFORMS Annual Meeting, Seattle, USA, November 2007
- Global Optimization in Nonlinear Systems: Algorithms, Software, and Applications (Invited plenary lecture), International Conference on Modelling, Identification and Control, Shanghai, China, June 2008
- Global Optimization (Invited workshop lecturer), SINTEF Workshop, Geilo, Norway, January 2009
- Computational Global Optimization (Invited plenary tutorial), 14th International Congress on Computational and Applied Mathematics, Antalya, Turkey, September 2009
- Global Optimization Intensive Course for MSc students, University of Edinburgh, Scotland, March 2010
- Nonlinear Optimization (Invited plenary tutorial), 1st International Symposium on Computing in Science & Engineering (ISCSE 2010), Izmir, Turkey, June 2010
- Global Optimization Intensive Course for engineers and scientists, HydroGeoLogic, Reston, USA, August 2010
- A Review of Global Optimization Applications (Invited plenary lecture), Conference on Numerical Optimization and Applications in Engineering, CRM, Barcelona, Spain, October 2010
- Global Optimization Intensive Course for scientists, ESRF, Grenoble, France, January 2011
- Nonlinear Modeling and Optimization with *Mathematica* (Invited presentation), Sabanci University, Istanbul, Turkey, March 2011

- Global Optimization: State-of-the-Art and Selected Applications (Invited lecture), *Conference on Challenges in Statistics and Operations Research* (CSOR 2011), Kuwait City, Kuwait, March 2011
- Nonlinear Optimization in Technical Computing Systems Kadir Has University, Istanbul, Turkey, March 2011
- Nonlinear Optimization in Technical Computing Systems Yeditepe University, Istanbul, Turkey, April 2011
- Nonlinear Optimization in Technical Computing Systems Technical University of Turin, Italy September 2012
- Global Optimization (Invited presentation), King Abdullah University of Science and Technology, Thuwal, Saudi Arabia, October 2012
- Global Optimization: A Review of the State-of-the-Art (Invited presentation), University of Lancaster, United Kingdom, May 2013
- Global Optimization Software and Illustrative Applications (Invited presentation), University of Southampton, United Kingdom, May 2013
- Nonlinear Optimization Course (Invited lecture series). Széchenyi University, Győr, Hungary, May 2013
- Global Optimization: A Review of the State-of-the-Art (Invited presentation), Óbuda University, Budapest, Hungary, May 2013
- Global Optimization Software and Illustrative Applications (Invited presentation), University of Bergamo, Italy, May 2013
- How Difficult is Nonlinear Optimization? (Invited presentation), DSOC Workshop, Széchenyi University, Győr, Hungary, May 2014
- Global vs. Local Optimization in Calibrating Engineering Models (Invited presentation), EngOpt 2014 Conference, Lisbon, Portugal, September 2014
- Global Optimization: Models, Algorithms, Software, and Applications (Invited workshop presentation), University of Aveiro, Portugal, September 2014
- How Difficult is Nonlinear Optimization? (Invited presentation) University of Connecticut, Storrs, CT, USA, October 2014
- Operations Research and Optimization: Towards Better Decision-Making for the Real World (Invited presentation), MBA Course, Saint Mary's University, Halifax, Canada, March 2015
- Globally Optimized Packings of Non-uniform Size Circles and Spheres. Paths, Pivots, and Practice: The Power of Optimization, Montréal, Canada, June 2015
- Towards Better Decision-Making for the Real World: Big Data, Business Analytics, Operations Research and Optimization (Invited presentation), MBA Course, Saint Mary's University, Halifax, Canada, November 2015
- Global Optimization for Finding Numerical Solutions to Object Packing Problems. (Invited presentation) Department of ISE, Lehigh University, Bethlehem, PA, USA, February 2016
- How Difficult is Nonlinear Optimization? (Invited presentation) Department of ISE, Lehigh University, Bethlehem, PA, USA, February 2016
- Packing Finite Sets of Ellipses in Optimized Circular Containers. EUROPT 2017, Montréal, Canada, July 2017

- Globally Optimized Packings of Non-uniform Size Spheres in R^d : A Computational Study. IFORS 2017, Quebec City, Canada, July 2017
- Nonlinear Regression Analysis by Global Optimization: A Case Study in Space Engineering. MOPTA 2017, Lehigh University, Bethlehem, PA, USA, August 2017
- Packing General Convex Sets into Polygons EURO 2018, Universidad de València and Universidad Politècnica de València, Spain, July 2018
- Composite Test Functions for Benchmarking Nonlinear Optimization Software. EUROPT 2018, Universidad de Almeria, Spain, July 2018
- Largest Small n-Polygons: Numerical Results and Conjectured Optima. (Invited presentation) Rutgers University, March 2019
- Largest Small n-Polygons: Numerical Results and Conjectured Optima. (Invited presentation) Imperial College, London, UK, July 2019
- Global Optimization in Practice. (Invited public talk) University of Bath, UK, July 2019
- Largest Small n-Polygons: Numerical Results and Conjectured Optima. (Invited presentation) University of Bath, UK, July 2019
- A General Lagrange Multipliers Based Approach for Object Packing Applications. MOPTA 2019, Lehigh University, Bethlehem, PA, USA, August 2019
- Largest Small n-Polygons: Numerical Results and Conjectured Optima. (Invited presentation) 5th Conference on Numerical Analysis and Optimization, Muscat, Oman, January 2020

INTELLECTUAL PROPERTY

I am the developer and sole IP owner of the LGO solver suite for global-local nonlinear optimization. LGO has been in use in several implementation versions around the world.

Patent or Copyright: LGO © János D. Pintér. Versions licensed and sold by my company Pintér Consulting Services, Inc. and its business partners. Further information is available upon request.

PUBLISHED CASES or CASE COMPETITION ORGANIZER/JUDGE

N/A

COMPILATION OF READINGS, ARTICLES, OR CASES

N/A

ONLINE BLOGS/NEWSPAPER COLUMNS or ACADEMIC/PROFESSIONAL VIDEOS (must provide public access website)

N/A

CONSULTING

Between 1994-2016, I was running my own scientific-technical consulting company (Pintér Consulting Services, Inc., Canada). Client organizations for my software and services included hundreds of academic, business, government, and research institutions.

CONTRACTS, FELLOWSHIPS, GRANTS AND SPONSORED RESEARCH

A selection of visiting scholarships and grants received is listed below.

- United Nations Development Program Fellowship, USA, 1976: as part of this 6-month fellowship, first I took graduate level engineering courses at UCLA. Then I had the opportunity to meet a number of leading professionals working at universities and research institutions across the USA, on topics related to environmental systems modeling and management.
- Ph.D. Program Fellowship awarded by the Hungarian Academy of Sciences, to study at Moscow State University, between 1978 and 1982 (travel and living expense grants were provided, to pass exams and to defend my thesis in Moscow)
- Research Fellowship, Delft University of Technology, 1987 (1 year)
- Hungarian Scientific Research Fund: several grants, received between 1991 and 2004
- Visiting Scholarship, National Research Institute for Mathematics and Computer Science, Amsterdam, The Netherlands, 1997 (1 month)
- Visiting Scholarship, Wolfram Research, Champaign, IL, USA, 1998 (1 month)
- Visiting Research Fellowship, Central Queensland University, Australia, 2001(1 month)
- Visiting Research Fellowship, University of Ballarat, Australia, 2002, 2003, 2004 (5 months in total)
- Industrial R&D grants for scientific research, algorithm and professional software product development, National Research Council of Canada (NRC), 1999, 2002, and 2012. My consulting company (PCS Inc.) received several substantial financial grants from NRC for advanced algorithm and software development projects.
- Eugene Mercy, Jr. President / Provost Fund for Faculty Development, Lehigh University, 2017, 2018
- KEEN Foundation Grants, Lehigh University, 2017, 2018
- Creative Inquiry Faculty Fellowship, Lehigh University, 2018
- Numerous other visiting grants (lecture, workshop, and short course invitations) received from about 40 countries of the world

PROFESSIONAL MEMBERSHIPS

Past and present professional society memberships

- Canadian Operational Research Society (CORS)
- EUROPT, the Continuous Optimization Working Group of EURO (The Association of European Operational Research Societies)

- Hungarian Operations Research Society (HORS)
- Institute for Operations Research and the Management Sciences (INFORMS)
- Mathematical Programming Society (MPS)
- Society for Industrial and Applied Mathematics (SIAM)

Society officer positions

In addition to actively organizing and contributing to events organized by these societies over several decades, I held the following volunteer society officer positions

- Global Optimization Vice-Chair, INFORMS Optimization Society, 2002 to 2004
- EUROPT Managing Board Member, 2010 to 2012
- EUROPT Managing Board Chair, 2012 to 2014

Committee Memberships at Conferences

For several decades, I have been involved in numerous international conferences as program committee member, stream and session organizer. To illustrate, here I mention only several recent conferences between 2016 and 2020.

- Program Chair, Modeling and OPTimization: Theory and Applications Conference (MOPTA 2017), Lehigh University, Bethlehem, PA, USA, August 16-18, 2017
- Program Committee Member, 16th EUROPT Workshop on Advances in Continuous Optimization (EUROPT 2018), Almería, Spain, July 12-13, 2018
- Program Committee Member, 17th EUROPT Workshop on Advances in Continuous Optimization (EUROPT 2019), University of Strathclyde, UK, June 28-29, 2019
- Scientific Committee Member, 6th World Congress on Global Optimization (WCGO 2019), Metz, France July 8-10, 2019

AWARDS / HONORS

- 2000 INFORMS Computing Society Prize for Research Excellence for my monograph titled *Global Optimization in Action*, Kluwer Academic Publishers, Dordrecht, 1996. Now distributed by Springer Science + Business Media, New York.

PROFESSIONAL AND/OR EXECUTIVE TRAINING

Between 1994-2016, I was running my own scientific-technical consulting company (Pintér Consulting Services, Inc., Canada). Client organizations for my software and services included hundreds of academic, business, government, and research institutions. In this capacity, I presented training courses in several countries including Canada, France, Germany, Hungary, United Kingdom, United States.

FACULTY DEVELOPMENT ACTIVITIES ATTENDED

N/A. Instead, please see my selected list of presentations.

LICENSURES AND CERTIFICATIONS

N/A

MEDIA CONTRIBUTIONS and QUOTES

N/A

DIRECTED STUDENT LEARNING

N/A (I started to work at Rutgers University in September 2020)

SERVICE TO THE PROFESSION

Editor / Editorial Review Board Membership for Scholarly Publications

- Editorial Board member, *Journal of Global Optimization* (since 1991)
- Editorial Board member, *GAMS Global World and GAMS Performance World* web forums (since 2002)
- Editorial board member: *Journal of Applied Mathematics & Decision Sciences* (now published as *Advances in Decision Sciences*, from 2003 to 2011)
- Editorial board member: *Algorithmic Operations Research* (from 2004 to 2011)
- Editorial board member: *International Journal of Modeling, Identification and Control* (from 2005 to 2009)
- Editorial board member: *SN Operations Research Forum* (since 2019)
- Advisory board member, *SpringerBriefs on Optimization* book series, Springer Science + Business Media (since 2012)
- Technical editor, and reviewer of books: the list of publishers that I have been working with includes Cambridge University Press, CRC Press / Taylor and Francis, Duxbury / Thomson, Elsevier, Kluwer Academic Publishers, McGraw-Hill, Pergamon Press, Springer Science + Business Media, Springer Nature, Wiley, and World Scientific
- Author and reviewer, contributor to more than 30 professional journals since 1975

SERVICE TO THE UNIVERSITY

N/A (I started to work at Rutgers University in September 2020)

SERVICE TO THE COLLEGE

N/A (I started to work at Rutgers University in September 2020)

SERVICE TO THE DEPARTMENT

N/A (I started to work at Rutgers University in September 2020)

SERVICE TO THE LOCAL COMMUNITY

N/A (I started to work at Rutgers University in September 2020)