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(UPDATED 11/18/2022)

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Education

- **Ph.D. in Industrial and Systems Engineering**, 2006
  Department of Industrial and Systems Engineering, University of Florida, Gainesville, Florida
- **Master of Science in Applied Mathematics and Physics**, 2002
  Moscow Institute of Physics and Technology (MIPT), Moscow, Russia
- **Bachelor of Science in Applied Mathematics and Physics**, 2000
  Moscow Institute of Physics and Technology (MIPT), Moscow, Russia

Professional positions held

- September 2017 - present, Professor, Department of Industrial Engineering, University of Pittsburgh
- September 2012 - August 2017, Associate Professor, Department of Industrial Engineering, University of Pittsburgh
- September 2006 - August 2012, Assistant Professor, Department of Industrial Engineering, University of Pittsburgh

Honors and Awards

- The 2019 Best Publication Award in Environment and Sustainability by the INFORMS Section on Energy, Natural Resources, and the Environment (ENRE)
- U.S. Air Force Office of Scientific Research, Young Investigator Research Program (YIP) Award, 2010
- U.S. Air Force Summer Faculty Fellowship, 2010, 2011, 2013, 2014, 2021, 2022
- The 2004 William Pierskalla Best Paper Award by the Health Applications Society of INFORMS

Publications

Refereed journal papers

1. X. Shi[†], O.A. Prokopyev, T.K. Ralphs, "Mixed Integer Bilevel Optimization with a k-optimal Follower: A Hierarchy of Bounds," *Mathematical Programming Computation*, accepted for publication, 2022.
2. H. Zhong, F.M. Pajouh, O.A. Prokopyev, "On designing networks resilient to clique blockers," *European Journal of Operational Research*, accepted for publication, 2022.
3. Q. Qiu, L.M. Maillart, O.A. Prokopyev, L. Cui, "Optimal Condition-Based Mission Abort Decisions," *IEEE Transactions on Reliability*, accepted for publication, 2022.
4. J. Yang[†], X. Shi[†], O.A. Prokopyev, "Exact solution approaches for a class of bilevel fractional programs," *Optimization Letters*, accepted for publication, 2022.
5. S.S. Ketkov, O.A. Prokopyev, L.M. Maillart, "Planning of life-depleting preventive maintenance activities with replacements," *Annals of Operations Research*, accepted for publication, 2022.

[†]Denotes one of my PhD students (advised or co-advised).

6. A. Ostroski, T. Lagos, O.A. Prokopyev, V. Khanna,"Consumption-based accounting for tracing virtual water flows associated with beef supply chains in the United States," *Environmental Science & Technology*, Vol. 56/22 (2022), pp. 16347–16356.

7. Y. Blokhin, S. Butenko, P. Momcilovic, O.A. Prokopyev, "On maximum ratio clique relaxations," *Networks*, Vol. 80/4 (2022), pp. 440–465.

8. X. Shi†, O.A. Prokopyev, B. Zeng, "Sequence independent lifting for a set of submodular maximization problems," *Mathematical Programming*, Vol. 196/1-2 (2022), pp. 69–114.

9. S. Han, A. Gomez, O.A. Prokopyev, "Fractional 0-1 programming and submodularity," *Journal of Global Optimization*, 84/1 (2022), pp. 77–93.

10. J.S. Borrero†, O.A. Prokopyev, D. Saure, "Learning in Sequential Bilevel Linear Programming," *INFORMS Journal on Optimization*, Vol. 4/2 (2022), pp. 174–199.

11. A. Veremyev, V. Boginski, E.L. Pasiliao, O.A. Prokopyev, "On integer programming models for the maximum 2-club problem and its robust generalizations," *European Journal of Operational Research*, Vol. 297/1 (2022), pp. 86–101.

12. C.P. Gillen†, A. Veremyev, O.A. Prokopyev, E.L. Pasiliao,"Fortification Against Cascade Propagation Under Uncertainty," *INFORMS Journal on Computing*, Vol. 33/4 (2021), pp. 1481–1499.

13. J. Yang†, J.S. Borrero†, O.A. Prokopyev, D. Saure, "Sequential Shortest Path Interdiction with Incomplete Information and Limited Feedback," *Decision Analysis*, Vol. 18/3 (2021), pp. 218–244.

14. S. Sanoubar†, K. He†, L.M. Maillart, O.A. Prokopyev, "Optimal Age-Replacement in Anticipation of Time-Dependent, Unpunctual Policy Implementation," *IEEE Transactions on Reliability*, Vol. 70/3 (2021), pp. 1177–1192.

15. N. Vora‡, C. Gillen†, O.A. Prokopyev, V. Khanna, "Rewiring the Domestic U.S. Rice Trade for Reducing Irrigation Impacts–Implications for the Food-Energy-Water Nexus," *ACS Sustainable Chemistry & Engineering*, Vol. 9/28 (2021), pp. 9188–9198.

16. A. Gomez, O.A. Prokopyev, "A Mixed-Integer Fractional Optimization Approach to Best Subset Selection," *INFORMS Journal on Computing*, Vol. 33/2 (2021), pp. 551–565.

17. E. Mehmanchi†, A. Gomez, O.A. Prokopyev, "Solving a class of feature selection problems via fractional 0–1 programming," *Annals of Operations Research*, Vol. 303/1 (2021), pp. 265–295.

18. G.L. Zenarosa†, O.A. Prokopyev, E.L. Pasiliao, "On exact solution approaches for bilevel quadratic 0–1 knapsack problem," *Annals of Operations Research*, Vol. 298/1-2 (2021), pp. 555–572.

19. S. Sanoubar†, L.M. Maillart, O.A. Prokopyev, "Age-replacement policies under age-dependent replacement costs," *IISE Transactions*, Vol. 53/4 (2021), pp. 425–436.

20. E. Mehmanchi†, H. Bidkhori, O.A. Prokopyev, "Analysis of process flexibility designs under disruptions," *IISE Transactions*, Vol. 53/2 (2021), pp. 131–148.

21. S.S. Ketkov, E.P. Burashnikov, O.A. Prokopyev, "An approach to the distributionally robust shortest path problem," *Computers & Operations Research*, Vol. 130 (2021), Article 105212 (14 pages).

22. H. Zhong, F.M. Pajouh, O.A. Prokopyev, "Finding influential groups in networked systems: The most degree-central clique problem," *OMEGA*, Vol. 101 (2021), Article 102262 (13 pages).

23. E. Mehmanchi†, C.P. Gillen†, A. Gomez, O.A. Prokopyev, "On Robust Fractional 0-1 Programming," *INFORMS Journal on Optimization*, Vol. 2/2 (2020), pp. 96-133.

‡Denotes PhD students, on whose Dissertation Committee I served.

24. M.H. Zare†, O.A. Prokopyev, D. Saure, "On Bilevel Optimization with Inexact Follower," *Decision Analysis*, Vol. 17/1 (2020), pp. 74–95.

25. S. Rebennack, O.A. Prokopyev, B. Singh, "Two-stage stochastic minimum s-t cut problems: Formulations, complexity and decomposition algorithms," *Networks*, Vol. 75/3 (2020), pp. 235–258.

26. J. Kim, A. Veremyev, V. Boginski, O.A. Prokopyev, "On the maximum small-world subgraph problem," *European Journal of Operational Research*, Vol. 280/3 (2020), pp. 818–831.

27. S.S. Ketkov, O.A. Prokopyev, "On greedy and strategic evaders in sequential interdiction settings with incomplete information," *OMEGA*, Vol. 92 (2020), Article 102161 (15 pages).

28. O. Tavaslioglu†, O.A. Prokopyev, A.J. Schaefer, "Solving Stochastic and Bilevel Mixed-Integer Programs via a Generalized Value Function," *Operations Research*, Vol. 67/6 (2019), pp. 1659–1677.

29. J.S. Borrero†, O.A. Prokopyev, P. Krokhmal, "Optimization of Cascading Processes in Arbitrary Networks with Stochastic Interactions," *IEEE Transactions on Network Science and Engineering*, Vol. 6/4 (2019), pp. 773–787.

30. E. Mehmanchi†, A. Gomez, O.A. Prokopyev, "Fractional 0-1 programs: links between mixed-integer linear and conic quadratic formulations," *Journal of Global Optimization*, Vol. 75/2 (2019), pp. 273–339.

31. A. Veremyev, O.A. Prokopyev, E.L. Pasiliao, "Finding Critical Links for Closeness Centrality," *INFORMS Journal on Computing*, Vol. 31/2 (2019), pp. 367–389.

32. J.S. Borrero†, O.A. Prokopyev, D. Saure, "Sequential Interdiction with Incomplete Information and Learning," *Operations Research*, Vol. 67/1 (2019), pp. 72–89.

33. X. Shi†, B. Zeng, O.A. Prokopyev, "On bilevel minimum and bottleneck spanning tree problems," *Networks*, Vol. 74/3 (2019), pp. 251–273.

34. D. Matsypura, A. Veremyev, O.A. Prokopyev, E.L. Pasiliao, "On exact solution approaches for the longest induced path problem," *European Journal of Operational Research*, Vol. 278/2 (2019), pp. 546–562.

35. K. He†, L.M. Maillart, O.A. Prokopyev, "Optimal sequencing of heterogeneous, non-instantaneous interventions," *Annals of Operations Research*, Vol. 276/1-2 (2019), pp. 109–135.

36. M.H. Zare†, J.S. Borrero†, B. Zeng, O.A. Prokopyev, "A note on linearized reformulations for a class of bilevel linear integer problems," *Annals of Operations Research*, Vol. 272/1-2 (2019), pp. 99–117.

37. A. Khojandi†, L.M. Maillart, O.A. Prokopyev, M.S. Roberts, and S. Saba, "Dynamic Abandon/Extract Decisions for Failed Cardiac Leads," *Management Science*, Vol. 64/2 (2018), pp. 633–651.

38. O.Y. Ozaltin†, O.A. Prokopyev, A.J. Schaefer, "Optimal Design of the Seasonal Influenza Vaccine with Manufacturing Autonomy," *INFORMS Journal on Computing*, Vol. 30/2 (2018), pp. 371-387.

39. M.H. Zare†, O.Y. Ozaltin†, O.A. Prokopyev, "On a class of bilevel linear mixed-integer programs in adversarial settings," *Journal of Global Optimization*, Vol. 71/1 (2018), pp. 91–113.

40. C.P. Gillen†, A. Veremyev, O.A. Prokopyev, E.L. Pasiliao, "Critical arcs detection in influence networks," *Networks*, Vol. 71/4 (2018), pp. 412–431.

41. D. Matsypura, O.A. Prokopyev, A. Zahara, "Wildfire fuel management: Network-based models and optimization of prescribed burning," *European Journal of Operational Research*, Vol. 264/2 (2018), pp. 774–706.

    ⋆ The 2019 Best Publication Award in Environment and Sustainability by the INFORMS Section on Energy, Natural Resources, and the Environment (ENRE)

42. G. Pastukhov, A. Veremyev, V. Boginski, O.A. Prokopyev, "On maximum degree-based γ-quasi-clique problem: Complexity and exact approaches," *Networks*, Vol. 71/2 (2018), pp. 136–152.

43. A. Veremyev, O.A. Prokopyev, E.L. Pasiliao,"Finding groups with maximum betweenness centrality," *Optimization Methods & Software*, Vol. 32/2 (2017), pp. 369–399.

44. C. Gillen†, A. Veremyev, O.A. Prokopyev, E.L. Pasiliao, "Robustness of solutions to critical node detection problems with imperfect data: a Computational Study," *Optimization Methods & Software*, Vol. 32/2 (2017), pp. 250–273.

45. J.S. Borrero†, C. Gillen†, O.A. Prokopyev, "Fractional 0-1 programming: applications and algorithms," *Journal of Global Optimization*, Vol. 69/1 (2017), pp. 255-282.

46. K. He†, L.M. Maillart, O.A. Prokopyev, "Optimal planning of unpunctual preventive maintenance," *IISE Transactions*, Vol. 49/2 (2017), pp. 127–143.

47. V. Stozhkov, V. Boginski, O.A. Prokopyev, E.L. Pasiliao, "A simple greedy heuristic for linear assignment interdiction," *Annals of Operations Research*, Vol. 249/1-2 (2017), pp. 39-53.

48. S. Nemati‡, O.V. Shylo, O.A. Prokopyev, A.J. Schaefer, "The Surgical Patient Routing Problem: A Central Planner Approach," *INFORMS Journal on Computing*, Vol. 28/4 (2016), pp. 657–673.

49. J.S. Borrero†, C. Gillen†, O.A. Prokopyev, "A simple technique to improve linearized reformulations of fractional (hyperbolic) 0–1 programming problems," *Operations Research Letters*, Vol. 44/4 (2016), pp. 479–486.

50. S. Karademir†, O.A. Prokopyev, R.J. Mailloux, "Irregular polyomino tiling via integer programming with application in phased array antenna design," *Journal of Global Optimization*, Vol. 65/2 (2016), pp. 137–173.

51. S. Kahruman-Anderoglu, A. Buchanan, S. Butenko, O.A. Prokopyev, "On provably best construction heuristics for hard combinatorial optimization problems," *Networks*, Vol. 67/3 (2016), pp. 238–245.

52. J.S. Borrero†, O.A. Prokopyev, D. Saure, "Sequential Shortest Path Interdiction with Incomplete Information," *Decision Analysis*, Vol. 13/1 (2016), pp. 68–98.

53. A. Veremyev, O.A. Prokopyev, S. Butenko, E.L. Pasiliao,"Exact MIP-based approaches for finding maximum quasi-cliques and dense subgraphs," *Computational Optimization and Applications*, Vol. 64/1 (2016), pp. 177–214.

54. B. Beheshti†, O.A. Prokopyev, E.L. Pasiliao, "Exact solution approaches for bilevel assignment problems," *Computational Optimization and Applications*, Vol. 64/1 (2016), pp. 215–242.

55. A. Veremyev, O.A. Prokopyev, E.L. Pasiliao, "Critical nodes for distance-based connectivity and related problems in graphs," *Networks*, Vol. 66/3 (2015), pp. 170–195.

56. S. Karademir†, O.A. Prokopyev, "On speed scaling via integer programming," *Operations Research Letters*, Vol. 43/5 (2015), pp. 537-544.

57. K. He†, L.M. Maillart, O.A. Prokopyev, "Scheduling Preventive Maintenance as a Function of an Imperfect Inspection Interval," *IEEE Transactions on Reliability*, Vol. 64/3 (2015), pp. 983-997.

58. A.C. Trapp†, O.A. Prokopyev, "A note on constraint aggregation and value functions for two-stage stochastic integer programs," *Discrete Optimization*, Vol. 15 (2015), pp. 37-45.

59. B. Beheshti†, O.Y. Ozaltin†, M.H. Zare†, O.A. Prokopyev, "Exact solution approach for a class of nonlinear bilevel knapsack problems," *Journal of Global Optimization*, Vol. 61/2 (2015), pp. 291–310.

60. G. Degirmenci‡, J.P. Kharoufeh, O.A. Prokopyev, "On Optimal Clustering in Mobile Wireless Sensor Networks Under Uncertainty," *Military Operations Research*, Vol. 20/2 (2015), pp. 19-33.

61. A. Khojandi†, L.M. Maillart, O.A. Prokopyev, M.S. Roberts, T. Brown, W.W. Barrington, "Optimal Implantable Cardioverter Defibrillator (ICD) Generator Replacement," *INFORMS Journal on Computing*, Vol. 26/3 (2014), pp. 599–615.

62. A. Veremyev, O.A. Prokopyev, V. Boginski, E.L. Pasiliao, "Finding maximum subgraphs with relatively large vertex connectivity," *European Journal of Operational Research*, Vol. 239/2 (2014), pp. 349-362.

63. A. Veremyev, O.A. Prokopyev, E.L. Pasiliao, "An integer programming framework for critical elements detection in graphs," *Journal of Combinatorial Optimization*, Vol. 28/1 (2014), pp. 233–273.

64. A. Khojandi†, L.M. Maillart, O.A. Prokopyev, "Optimal planning of life-depleting maintenance activities," *IIE Transactions*, Vol. 46/7 (2014), pp. 636–652.

65. G. Degirmenci‡, J.P. Kharoufeh, O.A. Prokopyev, "Maximizing the Lifetime of Query-Based Wireless Sensor Networks," *ACM Transactions on Sensor Networks*, Vol. 10/4 (2014), Article 56 (24 pages).

66. S. Karademir†, N. Kong, O.A. Prokopyev, "On greedy approximation algorithms for a class of two-stage stochastic assignment problems," *Optimization Methods and Software*, Vol. 29/1 (2014), pp. 42–67.

67. O. Shylo, O.A. Prokopyev, A.J. Schaefer, "Stochastic Operating Room Scheduling for High Volume Specialties under Block Booking," *INFORMS Journal on Computing*, Vol. 25/4 (2013), pp. 682–692.

68. F.M. Pajouh, B. Balasundaram, O.A. Prokopyev, "On characterization of maximal independent sets via quadratic optimization," *Journal of Heuristics*, Vol. 19/4 (2013), pp. 629–644.

69. O. Mostovyi, O.A. Prokopyev, O.V. Shylo, "On Maximum Speedup Ratio of Restart Algorithms Portfolios," *INFORMS Journal on Computing*, Vol. 25/2 (2013), pp. 222-229.

70. A.C. Trapp†, O.A. Prokopyev, A.J. Schaefer, "On a Level-Set Characterization of the Value Function of an Integer Program and Its Application to Stochastic Programming," *Operations Research*, 61/2 (2013), pp. 498–511.

71. O. Ursulenko‡, S. Butenko, O.A. Prokopyev, "A global optimization algorithm for solving the minimum multiple ratio spanning tree problem," *Journal of Global Optimization*, Vol. 56/3 (2013), pp. 1029–1043.

72. O.Y. Ozaltin†, O.A. Prokopyev, A.J. Schaefer, "Two-stage quadratic integer programs with stochastic right-hand sides," *Mathematical Programming*, Vol. 133/1-2 (2012), pp. 121–158.

73. S. Karademir†, O.A. Prokopyev, "A short note on solvability of systems of interval linear equations," *Linear and Multilinear Algebra*, Vol. 59/6 (2011), pp. 707–710.

74. M. Baz‡, B. Hunsaker, O.A. Prokopyev, "How much do we 'pay' for using default parameters?," *Computational Optimization and Applications*, Vol. 48/1 (2011), pp. 91–108.

75. O.Y. Ozaltin†, O.A. Prokopyev, A.J. Schaefer, M.S. Roberts, "Optimizing the Societal Benefits of the Annual Influenza Vaccine: A Stochastic Programming Approach," *Operations Research*, Vol. 59/5 (2011), pp. 1131–1143.

76. O.V. Shylo, O.A. Prokopyev, J. Rajgopal, "On algorithm portfolios and restart strategies," *Operations Research Letters*, Vol. 39/1 (2011), pp. 49–52.

77. A.C. Trapp†, F. Zink, O.A. Prokopyev, L. Schaefer, "Thermoacoustic heat engine modeling and design optimization," *Applied Thermal Engineering*, Vol. 31/14-15 (2011), pp. 2518–2528.

78. J. Rajgopal, Z. Wang, A.J. Schaefer, O.A. Prokopyev, "Integrated design and operation of remnant inventory supply chains under uncertainty," *European Journal of Operational Research*, Vol. 214/2 (2011), pp. 358-364.

79. A.C. Trapp†, O.A. Prokopyev, "Solving the Order-Preserving Submatrix Problem via Integer Programming," *INFORMS Journal on Computing*, Vol. 22/3 (2010), pp. 387–400.

80. A.C. Trapp†, O.A. Prokopyev, S. Busygin, "Finding checkerboard pattern via fractional 0–1 programming," *Journal of Combinatorial Optimization*, Vol. 20/1 (2010), pp. 1–26.

81. O.Y. Ozaltin†, O.A. Prokopyev, A.J. Schaefer, "The bilevel knapsack problem with stochastic right-hand Sides," *Operations Research Letters*, Vol. 38/4 (2010), pp. 328–333.

82. N. Alpay, A.C. Trapp†, O.A. Prokopyev, C. Camacho, "Optimization of minimum set of protein-DNA interactions: a quasi exact solution with minimum over-fitting," *Bioinformatics*, Vol. 26/3 (2010), pp. 319–325.

83. O.A. Prokopyev, "On equivalent reformulations for absolute value equations," *Computational Optimization and Applications*, 44/3 (2009), pp. 363-372.

84. O.A. Prokopyev, S. Butenko, A.C. Trapp†, "Checking solvability of systems of interval linear equations and inequalities via mixed integer programming," *European Journal of Operational Research*, Vol. 199/1 (2009), pp. 117-121.

85. J. Rajgopal, Z. Wang, A.J. Schaefer, O.A. Prokopyev, "Effective management policies for remnant inventory supply chains," *IIE Transactions*, Vol. 41/5 (2009), pp. 437–447.

86. O.A. Prokopyev, N. Kong, D.L. Martinez-Torres, "The equitable dispersion problem," *European Journal of Operational Research*, Vol. 197/1 (2009), pp. 59-67.

87. O. Seref, O.E. Kundakcioglu, O.A. Prokopyev, P.M. Pardalos, "Selective support vector machines," *Journal of Combinatorial Optimization*, Vol. 17/1 (2009), pp. 3–20.

88. O.V. Shylo, O.A. Prokopyev, V. Shylo, "Solving weighted MAX-SAT via global equilibrium search," *Operations Research Letters*, Vol. 36/4 (2008), pp. 434-438.

89. S. Busygin, O.A. Prokopyev, P.M. Pardalos, "Biclustering in data mining," *Computers & Operations Research*, Vol. 35/9 (2008), pp. 2964-2987.

90. P. Pardalos, O.A. Prokopyev, O.V. Shylo, V.P. Shylo, "Global equilibrium search applied to the unconstrained binary quadratic optimization problem," *Optimization Methods and Software*, Vol. 23/1 (2008), pp. 129–140.

91. C.A.S. Oliveira, O.A. Prokopyev, P.M. Pardalos, M.G.C. Resende, "Streaming cache placement problems: complexity and algorithms," *International Journal of Computational Science and Engineering*, Vol. 3/3 (2007), pp. 173–183.

92. S. Busygin, O.A. Prokopyev, P.M. Pardalos, "An optimization-based approach for data classification," *Optimization Methods and Software*, Vol. 22/1 (2007), pp. 3–9.

93. W. Chaovalitwongse, O.A. Prokopyev, P.M. Pardalos, "Electroencephalogram (EEG) time series classification: Applications in epilepsy," *Annals of Operations Research*, Vol. 148/1 (2006), pp. 227–250.

94. M. Min, O.A. Prokopyev, P.M. Pardalos, "Optimal solutions to minimum total energy broadcasting problem in wireless ad hoc networks," *Journal of Combinatorial Optimization*, Vol. 11/1 (2006), pp. 59–69.

95. H.-Z. Huang, P. Pardalos, O.A. Prokopyev, "Lower Bound Improvement and Forcing Rule for Quadratic Binary Programming," *Computational Optimization and Applications*, Vol. 33/2-3 (2006), pp. 187–208.

96. S. Busygin, O.A. Prokopyev, P.M. Pardalos, "Feature Selection for Consistent Biclustering via Fractional 0–1 Programming," *Journal of Combinatorial Optimization*, Vol. 10/1 (2005), pp. 7–21.

97. O.A. Prokopyev, C. Meneses, C.A.S. Oliveira, P.M. Pardalos, "On multiple-ratio hyperbolic 0–1 programming problems," *Pacific Journal of Optimization*, Vol. 1/2 (2005), pp. 327–345.

98. O.A. Prokopyev, H.-Z. Huang, P.M. Pardalos, "On complexity of unconstrained hyperbolic 0–1 programming problems," *Operations Research Letters*, Vol. 33/3 (2005), pp. 312–318.

99. H.K. Fung, S. Rao, C.A. Floudas, O.A. Prokopyev, P.M. Pardalos, F. Rendl, "Computational Comparison Studies of Quadratic Assignment Like Formulations for the In Silico Sequence Selection Problem in De Novo Protein Design," *Journal of Combinatorial Optimization*, Vol. 10/1 (2005), pp. 41–60.

100. P.M. Pardalos, W. Chaovalitwongse, L.D. Iasemidis, J.C. Sackellares, D.-S. Shiau, P.R. Carney, O.A. Prokopyev, V.A. Yatsenko, "Seizure warning algorithm based on optimization and nonlinear dynamics," *Mathematical Programming*, Vol. 101/2 (2004), pp. 365–385.

    ⋆ The 2004 William Pierskalla Best Paper Award by the Health Applications Society of INFORMS

101. W. Chaovalitwongse, P.M. Pardalos, O.A. Prokopyev, "A new linearization technique for multi-quadratic 0–1 programming problems," *Operations Research Letters*, Vol. 32/6 (2004), pp. 517-522.

102. O.A. Prokopyev, P.M. Pardalos, "On Approximability of Boolean Formula Minimization," *Journal of Combinatorial Optimization*, Vol. 8/2 (2004), pp. 129–135.

103. O.A. Prokopyev, P.M. Pardalos, "Minimum ϵ-equivalent Circuit Size Problem," *Journal of Combinatorial Optimization*, Vol. 8/4 (2004), pp. 495–502.

Edited books & proceedings

1. I. Bychkov, V.A. Kalyagin, P.M. Pardalos, O.A. Prokopyev (Editors),"Network Algorithms, Data Mining, and Applications: NET, Moscow, Russia, May 2018," Springer Proceedings in Mathematics & Statistics, Vol. 315, Springer, 2020.

2. V.A. Kalyagin, P.M. Pardalos, O.A. Prokopyev, I. Utkina (Editors),"Computational Aspects and Applications in Large-Scale Networks: NET 2017, Nizhny Novgorod, Russia, June 2017," Springer Proceedings in Mathematics & Statistics, Vol. 247, Springer, 2018.

3. V.A. Kalyagin, A. Nikolaev, P.M. Pardalos, O.A. Prokopyev (Editors),"Models, Algorithms, and Technologies for Network Analysis: NET 2016, Nizhny Novgorod, Russia, May 2016," Springer Proceedings in Mathematics & Statistics, Vol. 197, Springer, 2017.

4. D. Grundel, R. Murphey, P. Pardalos, O.A. Prokopyev (Editors), "Cooperative Networks: Control and Optimization," Series: New Dimensions in Networks, Edward Elgar Publishing, 2008.

5. D. Grundel, R. Murphey, P. Pardalos, O.A. Prokopyev (Editors), "Cooperative Systems: Control and Optimization," Series: Lecture Notes in Economics and Mathematical Systems, Vol. 588, Springer, 2007.

6. W.W. Hager, S.-J. Huang, P.M. Pardalos, O.A. Prokopyev (Editors), "Multiscale Optimization Methods and Applications," Series: Nonconvex Optimization and Its Applications, Vol. 82, Springer, 2006.

Chapters in edited books

1. O.V. Shylo, O.A. Prokopyev, "Restart Strategies," in *Handbook of Heuristics* (R. Martí, P.M. Pardalos, M.G.C. Resende, eds.), Springer (2018), pp. 205–220.

2. C.P. Gillen[†], D. Matsypura, O.A. Prokopyev, "Operations Research Techniques in Wildfire Fuel Management," in *Optimization Methods and Applications: In Honor of Ivan V. Sergienko's 80th Birthday*, (S. Butenko, P.M. Pardalos, V. Shylo, eds.), Springer (2017), pp. 119–135.

3. O.A. Prokopyev, "Fractional Zero-One Programming," in *Encyclopedia of Optimization* (C. Floudas, P.M. Pardalos, eds.), Springer (2009), pp. 1091–1094.

4. C. Ihrig, M. Baz[‡], J. Stander, R. R. Hoare, B. A. Norman, O.A. Prokopyev, B. Hunsaker, and A. K. Jones, "Greedy Algorithms for Mapping onto a Coarse-grained Reconfigurable Fabric," in *Advances in Greedy Algorithms* (W. Bednorz, ed.), In-Tech (2008), pp. 193–222.

5. O.A. Prokopyev, V. Boginski,W. Chaovalitwongse, P.M. Pardalos, J.C. Sackellares, P.R. Carney, "Network-based Techniques in EEG Data Analysis and Epileptic Brain Modeling," in *Data Mining in Biomedicine* (P.M. Pardalos, V. Boginski, A. Vazakopoulos, eds.), Springer (2007), pp. 559–574.

6. W. Chaovalitwongse, L.D. Iasemidis, P.R. Carney, J.C. Sackellares, D.-S. Shiau, L.K. Dance, O.A. Prokopyev, V. Boginski, P.M. Pardalos, "Data Mining in EEG: Application to Epileptic Brain Disorders," in *Data Mining in Biomedicine* (P.M. Pardalos, V. Boginski, A. Vazakopoulos, eds.), Springer (2007), pp. 459–481.

7. P.M. Pardalos, O.A. Prokopyev, S. Busygin, "Continuous Approaches for Solving Discrete Optimization Problems," in *Handbook on Modelling for Discrete Optimization* (G. Appa, L. Pitsoulis, H.P. Williams, eds.), pp. 39–60, Springer, 2006.

8. P.M. Pardalos, V.L. Boginski, O.A. Prokopyev, W. Suharitdamrong, P.R. Carney, W. Chaovalitwongse, A. Vazacopoulos, "Optimization Techniques in Medicine," in *Essays and Surveys in Global Optimization* (C. Audet, P. Hansen, G. Savard, eds.), Springer, pp. 211–232, 2005.

9. V. Boginski, S. Butenko, P.M. Pardalos, O.A. Prokopyev, "Collaboration Networks in Sports," in *Economics, Management and Optimization in Sports* (S. Butenko, J.Gil-Lafuente, P.M. Pardalos, eds.), Springer, pp. 265–277, 2004.

Refereed conference proceedings & abstracts

1. X. Shi†, O.A. Prokopyev, B Zeng, "Sequence independent lifting for the set of submodular maximization problem," in Proceedings of the 21st International Conference on Integer Programming and Combinatorial Optimization, IPCO 2020 (D. Bienstock, G. Zambelli, eds.), pp. 378–390.

2. A. Khojandi†, L.M. Maillart, O.A. Prokopyev, M.S. Roberts, S. Saba, "Dynamic Abandon/Extract Decisions for Failed Cardiac Leads," Proceedings of the 2013 Society for Medical Decision Making Conference (the Lee B. Lusted Student Prize Competition Finalist).

3. O.V. Shylo, L. Luangkesorn, O.A. Prokopyev, J. Rajgopal, A.J. Schaefer, "Managing patient backlog in a surgical suite that uses a block-booking scheduling system," Proceedings of the 2011 Winter Simulation Conference, pp. 1414–1324.

4. P. Velagapudi, O.A. Prokopyev, K. Sycara, P. Scerri, "Analyzing the Performance of Randomized Information Sharing," Proceedings of the *8th International Joint Conference on Autonomous Agents and Multiagent Systems (AAMAS 2009),* Vol. 2, pp. 821–828.

5. P. Velagapudi, O.A. Prokopyev, P. Scerri, K. Sycara, "A Token-Based Approach to Sharing Beliefs in a Large Multiagent Team," in *Optimization and Cooperative Control Strategies* (M.J. Hirsch, C. Commander, P.M. Pardalos, and R. Murphey, eds.), Proceedings of the 8th International Conference on Cooperative Control and Optimization, Lecture Notes in Control and Information Sciences, Vol. 381, Springer (2009), pp. 417–429.

6. P. Velagapudi, O.A. Prokopyev, K. Sycara, P. Scerri, "Maintaining Shared Belief in a Large Multiagent Team," Proceedings of the *10th International Conference on Information Fusion*, 2007, pp. 1–8.

7. P.M. Pardalos, O.A. Prokopyev, S. Busygin, "On Biclustering with Feature Selection for Microarray Data Sets," *BIOMAT 2005 – International Symposium on Mathematical and Computational Biology*, R. Mondaini, R. Dilão (ed.), World Scientific (2006), pp. 367–378.

Courses Taught

University of Pittsburgh

- ◇ IE 0015, Introduction to Information Systems Engineering (undergraduate)
  - – Fall 2006, Fall 2007

◇ IE 1081, Deterministic Methods in Operations Research (undergraduate)

– Fall 2010 - Fall 2014, Fall 2018 - Fall 2022

◇ IE 2082, Linear Optimization (MS/Ph.D.)

– Fall 2008 - Fall 2016, Fall 2018 - Fall 2022

◇ IE 3097, Algorithms for Engineers (Ph.D.)

– Fall 2007, Fall 2016

◇ IE 3053, Global Optimization (Ph.D.)

– Spring 2008, Spring 2015, Spring 2018

◇ IE 3078, Convex Optimization (Ph.D.)

– Spring 2009

◇ IE 3087, Network-based Optimization (Ph.D.)

– Spring 2007, Spring 2010, Spring 2013, Fall 2015, Spring 2021

◇ IE 3080, Advanced Topics in Operations Research (Ph.D.)

– Spring 2014, Spring 2018, Spring 2020

◇ IE 3057, Bilevel Optimization (Ph.D.)

– Spring 2017, Spring 2022

University of Florida

- ESI 4312, Operations Research I (undergraduate)

  – Spring 2006

- ESI 4567C, Matrix and Numerical Methods in Systems Engineering (undergraduate)

  – Summer 2005, Fall 2005

Graduate Students

Graduated Ph.D. students

◇ Andrew C. Trapp, Ph.D. 2011
"On Solving Selected Nonlinear Integer Programming Problems in Data Mining, Computational Biology, and Sustainability"

◇ Osman Y. Ozaltin, Ph.D. 2011 (co-advised with Dr. Andrew J. Schaefer)
"Optimal Design of the Annual Influenza Vaccine"
2013 Pritsker Outstanding Dissertation Award (IIE)

◇ Serdar Karademir, Ph.D. 2013
"Essays on Integer Programming in Military and Power Management Applications"

◇ Anahita Khojandi, Ph.D. 2014 (co-advised with Dr. Lisa M. Maillart)
"Optimizing Implanted Cardiac Device Follow-up Care"
Honorable Mention for the 2014 George B. Dantzig Dissertation Award (INFORMS)

- ◇ Behdad Beheshti, Ph.D. 2014
  "Efficient Resource Allocation in a Bilevel Hierarchy with Knapsack and Assignment Lower-Level Problems"
- ◇ Gabriel L. Zenarosa, Ph.D. 2016 (co-advised with Dr. Andrew J. Schaefer)
  "Integrating Proactive and Reactive Decision-making in Surgery Scheduling"
- ◇ Kai He, Ph.D. 2016 (co-advised with Dr. Lisa M. Maillart)
  "Optimal Maintenance Planning in Novel Settings"
- ◇ Juan S. Borrero, Ph.D. 2017
  "Sequential Bilevel Linear Programming with Incomplete Information and Learning"
- ◇ M. Hosein Zare, Ph.D. 2018
  "Bilevel Linear Programs: Generalized Models for the Lower-Level Reaction Set and Related Problems"
- ◇ Onur Tavaslioglu, Ph.D. 2019 (co-advised with Dr. Andrew J. Schaefer)
  "Stochastic Operating Room Scheduling under Emergency Arrivals with Integrated Block Assignments"
- ◇ Colin P. Gillen, Ph.D. 2019
  "Critical Elements Detection in Dynamic Networks Under Uncertainty"
  Runner-up, The INFORMS Computing Society (ICS) Student Paper Award, 2018
- ◇ Erfan Mehmanchi, Ph.D. 2019
  "Reformulation Techniques and Solution Approaches for Fractional 0–1 Programs and Applications"
- ◇ Xueyu Shi, Ph.D. 2021 (co-advised with Dr. Bo Zeng)
  "Exploiting Local Optimality and Strong Inequalities for Solving Bilevel Combinatorial and Submodular Optimization Problems"
- ◇ Shadi Sanoubar, Ph.D. 2022 (co-advised with Dr. Lisa M. Maillart)
  "Temporal and Spatial Considerations in Maintenance Planning"
- ◇ Jing Yang, Ph.D. 2022
  "Essays on Interdiction Problems in Novel Settings"

Current Ph.D. students

- ◇ Tomás Lagos, Ph.D. expected August 2024/2025
- ◇ Luca Wrabetz (co-advised with Jourdain Lamperski), Ph.D. expected August 2025/2026
- ◇ Haeseong Yang (co-advised with Jourdain Lamperski), Ph.D. expected August 2026/2027

Professional Service Activities

Editorial service

- ◇ Co-Editor-in-Chief, *Optimization Letters*
- ◇ Department Editor, *IISE Transactions* (Focused Issue: Operations Engineering & Analytics)
- ◇ Editorial Board Member, *Journal of Global Optimization*
- ◇ Editorial Board Member, *Journal of Industrial and Management Optimization*
- ◇ Area Editor, *Omega* (2017-2019)
- ◇ Editorial Board Member (Advisory Editor), book series *Springer Optimization and Its Applications*

- ◇ Guest co-editor:
  - ◇ Special Issue of *Journal of Global Optimization* dedicated to *the 60th birthday of Panos M. Pardalos* (O.A. Prokopyev and N.V. Sahinidis, Guest Editors), Volume 59, Issue 2-3, 2014
  - ◇ Special Issue of *Journal of Global Optimization* dedicated to *International Workshop on Multilevel Optimization: Algorithms and Applications* (A. Karakitsiou and O.A. Prokopyev, Guest Editors), Volume 38, Issue 4, 2007
  - ◇ Special Issue on *Systems Analysis, Optimization and Data Mining in Biomedicine* of *Optimization Methods and Software* (C. Floudas and O.A. Prokopyev, Guest Editors), Volume 22, Issue 1, 2007

Conferences

- ◇ Organizing Committee Member (Emerging Topics Sessions Co-Chair), INFORMS 2018 Annual Meeting, Phoenix, AZ, November 4-7, 2018
- ◇ Local Organization Committee, 22nd International Symposium on Mathematical Programming (ISMP), Pittsburgh, PA, July 12-17, 2015
- ◇ Organizing Committee Member, Conference on Optimization, Control and Applications in the Information Age (in honor of the 60th birthday of Panos M. Pardalos), Chalkidiki, Greece, June 15-20, 2014
- ◇ Cluster Chair, "Optimization/Global Optimization," INFORMS 2012 Annual Meeting, Phoenix, AZ, October 14-17, 2012
- ◇ Cluster Chair, "Optimization/Global Optimization," INFORMS 2011 Annual Meeting, Charlotte, NC, November 13-16, 2011
- ◇ Co-organizer, 3rd Yalta Optimization Conference, Yalta, Ukraine, August 2-4, 2010
- ◇ Organizing Committee Member (Student Volunteers Coordinator), INFORMS 2006 Annual Meeting, Pittsburgh, PA, November 4-7, 2006

Professional societies

- ◇ Member, 2022 INFORMS Minority Issues Forum (MIF) Early Career Award Committee
- ◇ Co-Chair, 2018 INFORMS JFIG Best paper competition
- ◇ Chair, 2015 IISE Transactions (Focused Issue on Operations Engineering & Analytics) Best Paper Award committee
- ◇ Vice-Chair for Global Optimization, INFORMS Optimization Society, 2010-2012